

Information and Media Literacy in Kindergarten

Sonja Gust von Loh and Maria Henkel

Heinrich-Heine Universität Düsseldorf, Dept. of Information Science,
Universitätsstraße 1, 40225 Düsseldorf, Germany
gust-von-loh@phil-fak.uni-duesseldorf.de, maria.henkel@hhu.de

Abstract. This paper describes a methodological approach towards studying information literacy of kindergarten children (age three - six years). As information literacy gains more and more importance, its representation in young children becomes a particularly interesting aspect. Media and Information Literacy (MIL) is a subject in the educational context in early childhood. We want to define what MIL means for small children and what can be done in kindergarten to promote it. To find out what children aged from three to six years are able to do with new media and information, this paper shows a method to perform an analysis with children, their parents and their nursery nurses. This analysis is to take place across different nurseries in Düsseldorf and later in Hong Kong.

Keywords: Information literacy, media literacy, media use, children, childhood studies, kindergarten.

1 Introduction

The media consumption of children is a topic widely discussed nowadays. In Germany we find a lot of programs for children from aged older than six years. There is for example the mediapass in elementary schools, where teachers receive materials and support for media education. The aim of this program is to lead young children to the use of media. Another approach in the field of media literacy is made by public libraries. Here we find programs for children, including kindergarten children, but the focus lies on reading and books, not on digital media. Offerings include readings for almost all ages, puppet theaters and media boxes for kindergartens and schools, not much research has been conducted on the promotion of information and media literacy skills among children under six. Although media education has been added to the early childhood education and care agreement in North Rhine Westphalia, our pretest indicates that parents are cautious with regard to media education in kindergarten.

Media influence on children does not start with attending school, it starts with birth. That is why we need to start with early education in media and information literacy. We are convinced that including media education into the curriculum of German kindergartens will have a positive effect on the information behavior of small children. We plan to conduct this study to assess the level of media and information literacy among children aged three to six. Another aspect is the perception of parents

and educators. We want to know what their experiences are in this field – are they able to deal with media in general and do they know how to encourage media literacy in their children? The goal is to get a deeper understanding of what children are able to do in the field of information literacy and what media they want to and should use.

Our approach is methodological. An aspect is how to detect what media is used in early childhood and furthermore in kindergarten. We have three different approaches for learning about media and information behavior of little children. In the first step we questioned parents in an online survey. The second step is to play a game with the children. The third step is to interview their parents and their educators in kindergarten.

In this paper, first, we will explain information literacy in early childhood. For this we start with an established theory of information literacy and then adapt it to children wherever necessary. What is the difference between information literacy of adults and information literacy of young children? In chapter 3 we will communicate possible approaches to conduct research in kindergarten and talk about the state of the art in Germany, especially in North Rhine Westphalia and Düsseldorf. The composition and timeline of our study will be described in chapter 4. There we find different methods for getting information about media and information literacy of children. We chose a playful approach for working with children in this sector. At last we will summarize the main aspects of the paper and suggest what can be done in the future.

2 Information Literacy in Early Childhood

In a modern society highly influenced by media new and old, children are being confronted with media daily. As technology is advancing and existing in almost all areas of our lives, the need for information and media literacy – even at a young age – is increasingly important. Children’s approach to media has to be guided and their consumption has to be moderated. To prevent risks due to excessive or otherwise improper media consumption, we have to make sure that children deal with media competently, responsibly and critically [1]. As well as there are risks when dealing with new technologies, there are also chances: Children’s education can be positively impacted by media [2]. With the help of a wide variety of educational options it is possible to enhance learning processes and improve cognitive and linguistic skills [1]. New media can be a tool to support the early educational development in an interesting and interactive way. Stock and Stock [3] developed a diagram (Fig.1) dividing media and information literacy into levels, which can be altered into the levels of information literacy of early childhood. The first level includes the basic components reading, writing and arithmetic. The second level, the information and communication technology competencies, i.e. technoliteracy, and media literacy are built on those three fundamental abilities. Last but not least, the third level contains information literacy. We can see that today’s information literacy is not a field that can be discussed in isolation. Necessary starting components are the ability to use ICT and media skills, e.g. the use of computers and smartphones, office software, the internet and its services – briefly, the adequate usage of media in general. With this

definition we see the difficulty in distinguishing information literacy from media literacy. The last aspect does not put emphasis on dealing with information, but on the use of media in general.

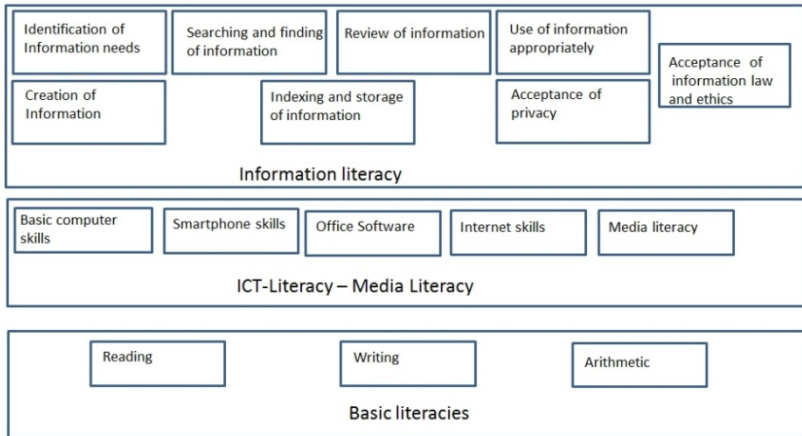


Fig. 1. Levels of information literacy [3]

In the context of German schools we find that media literacy is a better known concept than information literacy. Yet often we can see that what is actually meant is information literacy, because in the school context the use of information is very important. We can thus say that media literacy is the background for information literacy.

The term “early childhood” can be defined very broadly. In our study, young children are aged from three to six years.

Small children of this age have a different starting position than adults. We know that basic skills are developed at an early age [4]. So we also need an early starting point for using media. Children between three and six years are able to deal with media, but they need to be guided while doing it.

Figure 2 shows the diagram of Stock and Stock in a modified way for small children. In particular, the basic literacies have changed: instead of reading we find observing, instead of writing small children might be able to draw and instead of calculating we choose counting. Most of the children between three and six years can fulfill these aspects. On the second and third level some aspects have been eliminated since they do not apply to young children. We no longer find office software on the second level and on the third level “review of information” and the two aspects of information privacy were removed.

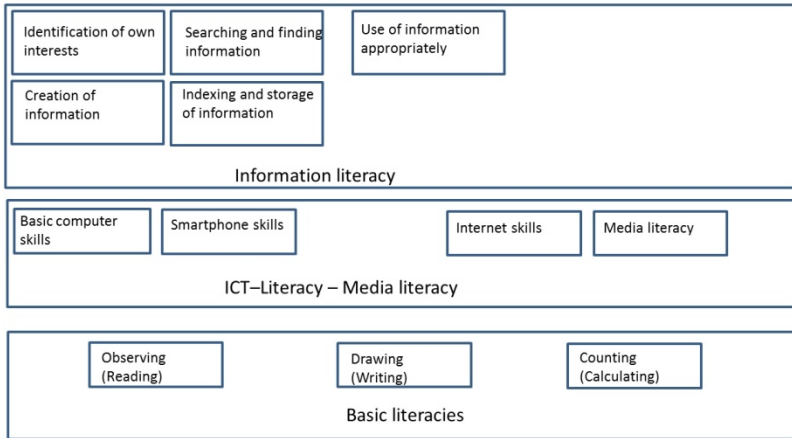


Fig. 2. Levels of information literacy in early childhood

Moreover in the childhood context it is not possible to divide media and information literacy. Information literacy itself can be found only in a very simple way. Therefore media literacy can be considered as an indicator for information literacy among young children.

Especially when it comes to digital media there are different voices that speak out either for (e.g. [5]) or strictly against dealing with it (e.g. [6]) in childhood. Because of these severely differing opinions parents and nursery nurses are often disoriented. We want to help these target groups find a way how to deal with media regarding the early education of children. We believe that a conscious use of media and information is becoming increasingly important. It is necessary that even small children are made aware of a sensible use.

3 Information Literacy in Kindergarten

Directed information literacy education in Kindergarten does not really exist at this time in Germany. There are studies in the field of media literacy, where we can find results regarding children's interaction with media. In this field the research of Marci-Boehncke et al. [7] is most important for us. Together with the German city Dortmund and IBM they investigated media literacy of children and nursery nurses for four years (2010-2014). With the help of a semi-standardized questionnaire, interviews and participant observation they received information from educators, parents and children about the use of both new (digital) and traditional media[7]. The focus in Germany still is on studies investigating the use of television (e.g. [8]). Mainly in the Anglo-Saxon, North-American countries and in the Asia-Pacific region we can find out more information on media and information literacy. In Australia, for instance, a study about the online behaviour of kindergarten children was conducted in 2010 [9]. The Australian study by Spink, Danby, Mallan and Butler [9] investigated the Internet search behaviour of young children. The scholars share the opinion that even three-year-old children already know how to use computers and the

Internet. They examine the way five- and six-year-old preschool children search using Google. The difficulty for these children is that some of them do not have any writing and reading skills yet. The online behaviour of these children was investigated at home and in their preschool class. In addition, Spink et al. are interested in the children's knowledge with regard to the Internet. Curricular models and research directions are being developed on the basis of those results. The focus is on the more general question of the search behaviour on the Web in pre-school classes [9].

Another study by Spink and Heidström [10] investigates the user behaviour of young children in libraries. Their findings indicate that young children categorize on the basis of their own life circumstances, and that they are able to create an alphabetical classification as well as arrange books on the basis of book covers [10].

For us MIL (media and information literacy) in early childhood is an important aspect. In this age children learn playfully and adults have the opportunity to introduce them to useful and careful media consumption. In general children learn with the help of trial and error. They are not afraid of making mistakes [4].

Neuss [1] emphasizes the importance of media education in early childhood and places the responsibility not only in the hands of parents. In Germany, more than 93 percent of all children ages three to five are attending kindergarten [11]. Here, an educational environment for media and information literacy can be created.

Education in kindergarten also offers the possibility to combine MIL with other aspects like health promotion, physical education and familial activity [12]. A lot of scientists argue that an adequate use of media is very important. It is a challenge for their families and also for the education in general [4]. When involved in media education, educators in kindergarten are able to support families. Theunert and Demmler [13] endorse a responsible use of media in Kindergarten. They argue that a media-hostile attitude today can only be described as pedagogically irresponsible, simply because children from low-educational backgrounds make inconsistent experiences. The kindergarten has the possibility to support socially deprived families by demonstrating an adequate use of different media [4].

The use of and education on new media is fixed in some curricula of kindergarten education in Germany – e.g. in North Rhine Westphalia [1]. But the education and care agreement of North Rhine Westphalia does not hold any clear information or instructions on how to execute it. We find the aspect of media education in the section “playing, creating and media”. For this section there are no concrete proposals, because there are too few statements about the use of media by children of preschool age. Media should be included contextually according to the everyday experiences of children [14]. The work with (new) media takes place on a very different level and depends on the individual kindergarten. In the north of Düsseldorf for example, kindergartens were supported by politicians. They provided a Laptop for each Kindergarten in that area to promote media education. Now pre-schoolers are able to use those devices for educational games. In general there are some ideas for how to deal with media in nursery nurses [15], but they are not included in the curriculum. We see that scientific research for evaluating a uniform instruction suitable for the curriculum is strongly needed.

For this we plan to conduct a study on kindergarten children starting in Düsseldorf, Germany.

4 Applications of This Methodological Approach

4.1 The Study in General

Our study is focused on two research questions. The first is small children's use of media, and the second is the use of information within different media. There are three research methods for obtaining data, distributed on three different levels. The three levels are:

1. Children (aged three to six)
2. Their parents
3. Nursery nurses

On the first level, we want to know the significance of media for children, which media they use and what they do with them. To get more information, we use our own story- and game-based interview technique based on puppet interviews and participant observation. On the second and third level, we plan to execute some personal interviews with the children's parents and their nursery nurses. These two parts – adults and children – are important, because it is likely that children will say something different than their parents or their nursery nurse [16]. Even very young children already have their own life, to which their parents have no access [17]. Interviews with nursery nurses are also significant. It is important whether they are interested in working with media, or whether they have the possibility and the knowledge to execute education on media and information literacy education. Another interesting point is which role media plays in the education of nursery nurses in Germany.

Thus the first step for our project must be to contact kindergartens in Germany (Düsseldorf).

4.2 Study with Children

The main problem is how to obtain valid data from children. This is very difficult [18-20]. Children cannot express themselves very well linguistically, their gestures and motor skills are well below the levels of an adult, they have difficulties with temporal and quantitative information, they may suffer anxiety and self-consciousness problems around strangers, i.e. towards the interviewer [19], they have insufficient knowledge for judging and commenting on their own experiences, and finally, infant logic follows its own tangents, which are sometimes hard to understand [18]. These are only some reasons why childhood research is so complicated and must be conducted in a different way than research with adults. One way to get access to the child's perspective is through a special form of interview, the so-called puppet interview. Using a hand puppet, one playfully approaches the children, approximating the child's own level and thus becoming able to lead meaningful conversations. The level which we conduct the interview on is less asymmetrical [21]. The advantage of a hand puppet is that since it is a well-known toy, children can experience the interview as a kind of role-playing game [19].

For a better understanding of what the children say and do, a participant observation of the children in kindergarten could be helpful. There is no laboratory

situation, but an almost entirely natural one where the researcher takes part in the children's everyday environment [22]. There are different approaches in the context of observation: the close and the open observation [22-23]. In the open observation the interviewee knows the research interest of the researcher and is thus fully aware of their role as interviewee. We thus should follow Mey's [23] recommendations:

1. The researcher as a participant observer himself is present, he is part of the situation
2. Children know about the situation and also about the purpose of the research
3. Children are seen as partners and trust must be built up

The third point in particular is a more recent aspect in childhood research. Especially when working with very young children, it is necessary to choose a child-friendly method [24]. It can be helpful to work with children of the same age beforehand to develop guidelines for the interview. This way we make sure that the questions are not too complex [25].

In our context of, -"information literacy in early childhood"-, we must observe which media are used by children and how children deal with different kinds of media. A big problem we might face is that in most kindergartens there is no significant media infrastructure. Thus it is likely that we cannot make observations in all of our chosen nurseries. Since we plan not only to obtain information on their media use but also on their information literacy we need more indicators than just observation. We developed a play for children, where we use a hand puppet as assistance. This "play" consists of several stations the child can reach by fulfilling tasks or just making decisions. The stations of the interview are connected by a storyline – a "problem" that needs to be solved by the interviewee in cooperation with the interviewer. This way the interview will seem like an adventure made up of little games to the child. Since we want the interview to stay as flexible as possible, there is the option to jump back and forth between stations. There are parallel routes that will eventually lead to the same ending: the solution of the problem and the completion of the interview. This is necessary to adjust to the different needs and variable capacity of each child while testing the upper limit of their ability. While some children are experienced in dealing with media devices and will solve the varied tasks effortlessly, others might be overwhelmed by some of them. With this adaptable approach we want to prevent the premature discontinuance of an interview as well as enable the use of different methods (observation, interrogation, interaction) and the distinction between several information literacy indicators (media literacy, categorization, rehearsal, etc.). To get an overall impression, we still need two more perspectives, the view of the parents and the view of the educators. To obtain information from the adults, we need a third research method.

4.3 Study with Parents and Nursery Nurses

In the context of adults, we wish to continue a qualitative approach. Here we want to conduct interviews in order to compare the statements of children to those of their parents. Since we hope to confirm the previously collected information, the interview will be structured similar to the child-level interviews. The nursery nurses are asked questions on their own relevant public establishment, e.g.: Does your kindergarten use

new media? Which are they? Do parent-teacher conferences deal with the topic of media education? And so on. This time we would like to conduct a semi-structured interview in which there is a guideline, but the interviewer does not have a strict plan for the interview. The sequence and wording of the questions are not fixed [26]. In general, the use of interviews is very popular. There are several advantages: they are authentic, comprehensible, and can be reproduced at will [22]. For our study we need a weak or neutral investigative interview. In this interview, it is important to show empathy with the interviewees. Here we have, on the one hand, open questions, and on the other hand, closed questions in which the interviewee may not give their own answers [22]. Generally, there are three different sorts of questions. At the beginning of the interview we need an introductory question for establishing contact. The second kind of question is the so-called central question. These questions ask about the main content of the interview and are the core of the whole question-and-answer session. To finish the interview, we have ad-hoc questions. Here, too, the interviewee has the option of asking questions about the topic. At that point, we normally see questions that were generated during the interview [26].

The first step has already been executed. We made a first online survey for getting information about the use of media of parents and children. We hope to see parallels in their daily routine with media. Moreover we want to gain information on media usage of small children in general. For example what media are used by little children, are children able to deal with media in an autonomous way and so on. We opened this anonymous online survey for two months (June to August 2014), and shared it through social networks. The survey included 28 questions and was completed by 231 people.

5 Conclusion

We see that research in the field of MIL in early childhood is underrepresented. We do not have many research results to rely on and are planning to conduct a first attempt in Düsseldorf, Germany. It is obvious that we need research on this topic, because media and therefore also media- and information literacy are important aspects in early education of children. A first online survey was the start of our project. We notice that little children use more and more tablet PCs for playing games. To get a deeper understanding of what children are able to do with new media we plan to conduct interviews in kindergartens. With the help of a story- and game-based interview designed to assess the level of media and information literacy we want to gather data on media and information literacy in kindergarten. For the creation of this playful interview we used some known levels of information literacy, like information need, use of information, organization of information and so on. Naturally, not all aspects of information literacy apply for children aged three to six. For a holistic view we would like to interview parents and nursery nurses of the children as well.

Future research is possible regarding the digital divide and information literacy in early childhood. The divide between families who use media in a reasonable way and

families who are not is visible [4]. A constructive use of media and information instead of passive consumption by children is desired for the future [4]. New media require an optimal use, more media skills and more knowledge-oriented conditions than traditional media [4] as for example TV. Another goal will be to conduct the study on the one hand in other German regions to make a comparison possible (e.g. rural and urban) and on the other hand in Hong Kong.

References

1. Neuss, N.: Medienkompetenz in der Frühen Kindheit. In: Bundesministerium für Familie (ed.) Medienkompetenzförderung für Kinder und Jugendliche, Berlin, pp. 34–45 (2013)
2. Yelland, N.: New Technologies, Playful Experiences and Multimodal Learning. In: Berson, I.R., Berson, M.J. (eds.) High-Tech Tots: Childhood in a Digital World, pp. 5–22. Information Age Publishing, Charlotte (2010)
3. Stock, W.G., Stock, M.: Handbook of Information Science. DeGruyter Saur, Berlin (2013)
4. Aufenanger, S.: Familie und neue Medien. Medienimpulse 47, 11–13 (2004)
5. Tapscott, D.: Net Kids: Die Digitale Generation Erobert Wirtschaft und Gesellschaft. Gabler, Wiesbaden (1998)
6. Spitzer, M.: Vorsicht Bildschirm!: Elektronische Medien, Gehirnentwicklung, Gesundheit und Gesellschaft. Dt. Taschenbuch-Verl., München (2006)
7. Marci-Boehncke, G., Rath, M., Müller, A.: Medienkompetent zum Schulübergang: Erste Ergebnisse einer Forschungs- und Interventionsstudie zum Medienumgang in der Frühen Bildung. MedienPädagogik 22 (2012), <http://www.medienpaed.com/Documents/medienpaed/22/marci-boehncke1212.pdf>
8. Feierabend, S., Mohr, I.: Mediennutzung von Klein- und Vorschulkindern. Media Perspektiven 9, 453–461 (2004)
9. Spink, A., Danby, S.J., Mallan, K., Butler, C.: Exploring Young Children's Web Searching and Technoliteracy. J. Doc. 66(2), 191–206 (2010)
10. Spink, A., Heinström, J.: Information Behaviour Development in Early Childhood. In: Spink, A., Heinström, J. (eds.) New Directions in Information Behaviour, vol. 1, pp. 245–256. Emerald, Bingley (2011)
11. Statistisches Bundesamt: Kindertagesbetreuung in Deutschland. Wiesbaden (2013)
12. Neuss, N.: Thematische Elternabende. In: Hess, S. (ed.) Grundwissen Zusammenarbeit mit Eltern. Kindertageseinrichtungen und Familienzentren, pp. 168–178. Cornelsen Verlag, Berlin (2012)
13. Theunert, H., Demmler, K.: Medien Entdecken und Erproben Null bis Sechsjährige in der Medienpädagogik. In: Theunert, H. (ed.) Medienkinder von Geburt an. Medienaneignung in den Ersten Sechs Lebensjahren, pp. 91–118. Kopaed, München (2007)
14. Ministerium für Familie: Bildungsvereinbarung NRW. Düsseldorf (2003)
15. Ministerium für Familie: Kinder: Mehr Chancen durch Bildung von Anfang an. Düsseldorf (2011), http://www.schulministerium.nrw.de/BP/Schulsystem/Bildungsgrundsuetze_fuer_den_Elementar_und_Primarybereich/Bildungsgrundsuetze_fuer_den_Elementar-_und_Primarybereich.pdf
16. Scott, J.: Children as Respondents: Methods for Improving Data Quality. In: Lyberg, L. (ed.) International Conference on Survey Measurement and Process Quality, pp. 331–350. Wiley, New York (1997)

17. Lipski, J.: Zur Verlässlichkeit der Angaben von Kindern bei standardisierten Befragungen. In: Heinzl, F. (ed.) Methoden der Kindheitsforschung. Ein Überblick über Forschungszugänge zur kindlichen Perspektive, pp. 77–86. Juventa, Weinheim (2000)
18. Hülst, D.: Ist das Wissenschaftlich Kontrollierte Verstehen von Kindern möglich? In: Heinzl, F. (ed.) Methoden der Kindheitsforschung. Ein Überblick über Forschungszugänge zur Kindlichen Perspektive, pp. 37–55. Juventa, Weinheim (2000)
19. Weise, M.: Der Kindergarten wird zum "Forschungsort",– Das Puppet Interview als Forschungsmethode für die Frühe Bildung. MedienPädagogik 11, 1–10 (2008)
20. Oswald, H., Krappmann, L.: Kinder. In: Flick, U. (ed.) Handbuch Qualitative Sozialforschung. Grundlagen, Konzepte, Methoden und Anwendungen, pp. 355–358. Beltz, Psychologie-Verl.-Union, Weinheim (2012)
21. Paus-Hasebrink, I.: Forschung mit Kindern und Jugendlichen. In: Mikos, L., Wegener, C. (eds.) Qualitative Medienforschung. Ein Handbuch, pp. 222–231. UVK Verlagsgesellschaft, Konstanz (2005)
22. Lamnek, S.: Qualitative Sozialforschung: Lehrbuch, 4th edn. Beltz, PVU, Weinheim, Basel (2005)
23. Mey, G.: Zugänge zur Kindlichen Perspektive. Methoden der Kindheitsforschung. In: Forschungsberichte aus der Abteilung Psychologie im Institut für Sozialwissenschaften der Technischen Universität Berlin. Berlin (2003)
24. Vogl, S.: Alter und Methode: Ein Vergleich Telefonischer und Persönlicher Leitfadenterviews mit Kindern. VS Verlag für Sozialwissenschaften, Wiesbaden (2012)
25. Lipski, J.: Kindern eine Stimme geben. Erfahrungen mit Sozialwissenschaftlichen Kinderbefragungen. Zeitschrift für Soziologie der Erziehung und Sozialisation 18(4), 403–422 (1998)
26. Hussy, W., Schreier, M., Echterhoff, G.: Forschungsmethoden in Psychologie und Sozialwissenschaften - für Bachelor. Springer, Heidelberg (2010)