

Original Paper

Video Recording as a Method for Swedish Preschool Teachers to Analyze Multilingual Strategies

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Abstract

This participatory action research study draws attention to how fifteen preschool teachers develop didactic strategies by using video recording as a method for performing critical and didactic analyses. The overall aim is to develop didactic strategies and knowledge to support multilingual children's emergent literacy development in Swedish preschools.

The starting point for a participatory action research, is action learning and a pragmatic orientation. The approach focuses on human development in an organization where action research is a tool for learning. This study employs a mixed-methods design where qualitative data were analyzed and derived from the preschool teachers' written reflections related to their video-recorded activities and support of the analysis tool Social Language Environment-Domain, SLE-D (Norling, 2015a). The results show didactic strategies that are related to multilingual children's interests, strategies that support multilingual children's empowerment and strategies that challenge multilingual children's reading and writing processes.

Continuing research suggests paying attention to the conditions of multilingual children in preschool education. This entails a long-term effort where action research engages preschool teachers to develop their beliefs into sustainable knowledge, in which video recording can serve as a method for preschool teachers to analyze multilingual strategies.

Keywords

emergent literacy, multilingualism, participatory research, preschool teachers

1. Introduction

Previous studies have investigated preschool staff's approaches regarding the emergent literacy environment and preschool staff's beliefs regarding preschool practices (e.g., Girolametto et al., 2007; Harle & Trudeau, 2006; Jacobs, 2004) as well as preschool teachers' beliefs and knowledge about children's language and literacy development (Cash et al., 2015). Lynch (2015) has investigated 79 preschool teachers' beliefs about teaching language and literacy in preschool. Based on four language and literacy areas, the results show that the oral language was found to be in line with research-based best practice, unlike the other areas where there was much uncertainty in best practice beliefs among the teachers. Further, the findings show that less teaching experiences were related to preschool teachers' knowledge in best practice in teaching language and literacy. Similar results were found in the Sandberg, Lillvist, Sheridan and Williams (2012) study about preschool staff's competence in play. The results show that preschool teachers who have several years of professional experience estimated their playing skills higher than those who had a more recent preschool teacher education and shorter work experience. The explanation may be that the preschool teachers who have recently graduated have more research-based knowledge in their education and are thus more critical in their assessment of competence (Sandberg et al., 2012). Based on these results, there are indications that preschool teachers who are working for a longer period in preschool seem to be in need of in-service training in order to develop their best practice on a disciplinary foundation related to teaching (Norling, 2014). However, there is a multidimensional character between the two concepts of *beliefs* and *knowledge*. According to Alexander and Dochy's (1995) study, the results show that adults in American and European cultures perceive knowledge and beliefs as overlapping ideas that still retain some unique dimensions. The participants perceived knowledge as facts, concepts gathered from theory or empirical understanding that is based on learning and experience. Beliefs, however, imply a part of some knowledge in daily experiences based on assumptions.

Some studies have investigated multilingual children's conditions for emergent literacy development in preschool (e.g., Björk-Willén, 2018; Kultti, 2014; Wedin et al., 2019). However, there is limited research investigating preschool staff's knowledge, descriptions and critical analysis concerning their didactic approaches in order to support multilingual children's emergent literacy development (Norling & Sandberg, 2018). To address the limitation, this study draws attention to an action research in which Swedish preschool teachers use video recording in teaching activities to analyze and develop didactic strategies in order to support multilingual children's emergent literacy development. Further, this study applies the concepts of *knowledge* and *beliefs* in order to highlight the learning process, since the preschool teachers' beliefs form a base in the process of developing knowledge about didactic strategies to support multilingual children's emergent literacy development.

1.1 Video Recording to Support Teaching Strategies

There are some Nordic studies that have used video-taped observations in order to study preschool teachers' interactions (Alatalo & Westlund, 2019; Gjems, 2017; Sigurdardottir, Williams, & Einarsdottir,

2019) in the preschool environments. Gjems (2017) has investigated how preschool teachers, through everyday talk, can support children's understanding of the connection between everyday concepts, abstracts and scientific concepts. The study has a qualitative approach where video-taped observation was used to analyze language interactions between two preschool teachers and children in two Norwegian preschool classrooms. The results indicated that the preschool teachers invited the children to use language in order to make meaning of a shared topic but seldom expanded the children's concept of understanding. In another study by Sigurdardottir et al. (2019), the researchers investigated how preschool teachers communicate values they consider important for children to learn in preschool. By using video observation, they received nine hours and 17 minutes of sequences regarding teachers communicating with children about values. However, only two sequences were selected for further analysis, based on play in small groups and with at least one preschool teacher present. The findings show that values were communicated implicitly rather than explicitly in play activities. However, in both studies the analysis of the video recordings was performed solely by the researcher and was not intended for the preschool teacher to make critical reflections. Alatalo and Westlund (2019) have examined preschool teachers' thoughts and perceptions in terms of read-alouds as a tool to support children's language and literacy development. The researcher's video recorded read-aloud activities in large groups of children of the age of three to four years were to be used as a basis for discussion in focus group conversations, so called *stimulated recall* (Schepens, Aelterman, & Van Keer, 2007). The preschool teachers who participated in focus group conversation were not involved in the tape-recorded activities, although they were expected to discuss and critically reflect on their own read-aloud practices as well as those of the video-recorded preschool teachers. The results show that the preschool teachers tried to organize read-alouds but did not always succeed as a result of logistical and practical challenges. In summary, none of the studies seems to use video recording as a tool for preschool teachers to analyze and critically review their didactic strategies. Therefore this study may contribute knowledge about using video recording as a method for preschool teachers to analyze multilingual strategies.

1.2 Didactic Strategies to Support Multilingualism in Children's Early Years

Previous research has emphasized in various ways the value of meaningful learning environments such as play, and teaching activities to promote multilingual children's emergent literacy development (Björk-Willén & Comdal, 2009; Damber, 2016; GrøverAukrust, 2008; Norling & Sandberg, 2018). There are mainly some specific didactic areas in research that have been noticed. For instance, play activities are emphasized as important for multilingual children's language competences. In a study by Grøver Aukrust (2008), the results indicate that meaningful play activities where multilingual children have the opportunity to use their languages in parallel processes (code switch) promote the ability of children to construct a story as well as its content and structure. According to Björk-Willén and Comdal (2009), the concept of "free play" in preschool is often misunderstood, since free play is not seen as a planned and organized activity that refers to the content related to the preschool's curriculum goals.

However, findings in their study show that multilingual children of the age of 3 -5 years give feedback, challenge one another as well as give further instructions in language modeling during free play activities such as object labeling, self-presentation and book reading. Furthermore, Led in and Samuelsson's (2016) study shows that multilingual children can initiate and maintain play activities by using physical resources such as gestures and imitating one another. The researchers argue that preschool teachers can use children's engagement in adult-initiated play activities for didactic purposes to support multilingual children's cultural and language development. Both cultural and linguistic resources are required for children to coordinate their perspectives and sometimes there may be misconceptions. Therefore preschool teachers have a significant role in supporting and challenging multilingual children's languages in their negotiations. To summarize, play activities, child-initiated as well as adult-initiated, play a significant role for children's empowerment to construct and develop their knowledge in meaningful situations. However, management of educational artefacts as well as gestures are crucial to children's accomplishment in play activities, as artifacts and gestures provide a structure of communication as well as support in shared attention and meaning-making (Björk-Willén & Comdal, 2009; Ledin & Samuelssons, 2016; Norling & Lillvist, 2016).

Another didactic area is multilingual children's opportunity to explore writing in various environments. Wedin, Pettersson, and Warström (2019) emphasize the importance of multilingual children's access to various writing opportunities. Writing in relation to children's early years refers to the use of writing as a form of representation and as a part of children's meaning-making. Children learn at an early age to distinguish between different written languages, since it becomes a socialization and an awareness of different languages. The letters represent something that the children recognize, for example letters in their names; however, the letters may look different depending on which language they are written in. According to Wedin et al. (2019) and Cummins et al. (2005) it is important if preschool teachers are curious and pay attention to children's writing resources. If children become aware that they have access to different written representations, it creates opportunities to develop the languages in parallel processes. Research suggests that preschool teachers can involve parents in the education in order to facilitate for multilingual children to develop their language experiences (Wedin et al., 2019). Language and multilingualism are closely linked to identity, and the process of using concepts in parallel processes to transfer them from one to another increases multilingual children's *biliteracy* skills (Cummins et al., 2005).

Digitization is being increasingly implemented in our society, even in preschools, and the communication becomes more multicultural, multilingual and multimodal, in which preschool teachers as well as children are using more digital technologies in their everyday lives. Moinian, Kjällander, and Dorls (2016) have investigated Swedish mother tongue teachers' views of using digital tablets in teaching multilingual preschool children. The results show that digital tablets in teaching increase access to meaningful content for multilingual children. However, there are many difficulties in using digital resources in teaching. The mother tongue teachers expressed a lack of adequate knowledge of

apps and very limited access to and experience of digital technologies. The study shows that some of the mother tongue teachers used digital tablets in order to develop educational material based on the children's interests and languages, since it is difficult to teach when pedagogical materials are available in only one language. The use of the internet and digital technologies then becomes necessary. However, several teachers did not have access to digital tablets, and the mother tongue teachers explained that if they possessed a digital tablet they would be able to search, find, and download original educational and valuable cultural resources from their own languages. According to Kress (2009), children can be constructors of their own learning process by using various digital tools, and Hermansson and Lindhé (2019) argue that "Digi-reading" encourages democratic cooperation on texts and supports children in meaningful contexts to develop linguistic strategies in their understanding of the content of texts, as well as responding to the perspective of their peers. Thus, research suggests that digital tools are necessary to create meaningful teaching activities in which multilingual children are given empowerment to learn their languages in parallel processes.

1.3 Emergent Literacy and Multilingualism: The Swedish Context

In the Swedish national preschool curriculum (Swedish National Agency for Education, 2018), multilingualism is addressed in terms of conditions to develop both the Swedish language and the pupils' mother tongue, develop cultural identity, knowledge of and interest in different cultures as well as understanding of the value of living in a society characterized by diversity. In 2012, the Swedish preschool became a part of the education system. The Education Act (2010, p. 800) stipulates that education should ensure that children acquire and develop knowledge and values as well as promote all children's development and learning. Further, a holistic perspective on teaching should characterize the preschool education in which play has a central role for learning.

In Sweden, preschool is offered to children between the ages of one and five to the extent necessary with regard to parents' work or studies. Children who have parents who are unemployed or have parental leave should, from the age of one, be offered preschool for at least three hours a day or 15 hours a week. In addition, from the fall when the child turns three, all children are offered at least 525 hours per year free of charge, so-called public preschool. In 2018, almost 85% of all children between the ages of one and five attend preschool and 5% of these children have a foreign background (Swedish National Agency of Education, 2019). However, there are no statistics of how many preschool children are multilingual. According to a document from the Swedish Schools Inspectorate (2017), there is a lack of knowledge and didactic strategies to support multilingualism as well as using play activities as a resource for language learning. Further, didactic strategies are lacking regarding collaboration with multilingual parents, since the language is perceived as a barrier to communicate about children's language development.

In Swedish preschool, the staff mostly consists of preschool teachers and child minders or people with other qualifications related to childcare and education. According to the Swedish National Agency of Education (2018), almost 40% of preschool staff are qualified preschool teachers with over three years

of university studies. Preschool teachers have specific responsibilities that are expressed in the curriculum (Swedish National Agency of Education, 2018). Responsibilities that relate to emergent literacy are expressed in terms of “*preschool teachers are responsible for every child being challenged and stimulated in her or his development of language and communication, as well as mathematics, science and technology, and being able to use digital tools in a way that stimulates development and learning*” (p. 16). However, the education in preschool should provide conditions for children as well as multilingual children to communicate thoughts and experiences in various forms of expression such as image, form, drama, dance, music and singing. Furthermore, children should have opportunities to use pictures and text in different media, to use spoken language and vocabulary, as well as the ability to play with words and explore the written language as well as the meaning of symbols and how they are used.

2. Method

This study has a participatory action research design (Reason & Bradbury, 2006; Gaventa & Cornwall, 2008), since the intention is to use video recording as a method for preschool teachers to perform critical didactic analyses of teaching activities in order to support multilingual children’s emergent literacy development.

The starting point for a participatory action research, according to Johansson and Lindhult (2008), is action learning and a pragmatic orientation. The approach focuses on human development in an organization where action research is a tool for learning. According to Coghlan and Barnnick (2012), action learning is based on two principles: first, learning cannot take place without action and action cannot occur without learning; and second, those who are not open for change cannot change the environment. Based on these two principles, the participating preschool teachers as well as researchers have actively read previous research about subjects such as teaching, multilingualism, reading and writing in preschool, and discussed the results from previous research related to preschool teachers’ beliefs, knowledge and teaching strategies. However, the action-learning process is closely rooted to the concepts of *knowledge* and *beliefs* (Alexander & Dochy, 1995) where the preschool teachers’ based their beliefs on learning and knowledge to support multilingual children’s emergent literacy development. Furthermore, each preschool teacher implemented teaching strategies (action) in the process of developing didactic strategies. Additionally, the preschool teachers used video recording in their teaching activities in order to change or deepen their previous beliefs in favor of acquired knowledge. Reason and Bradbury (2006) argue that participatory action research claims that the “real reality” and the original gift is “we participate” *and when we draw on the constructivist perspective trying to formulate our intentions, we come into a world of human language and cultural expression* (p. 7).

In this study, cultural expression can be interpreted as the preschool teacher’s professional language in order to express and formulate didactic strategies within a preschool context rooted in research with

regard to education and teaching. However, from the perspective participatory worldview, the preschool teachers' voices and knowledge cannot be seen as separate things in our society since they can be seen as co-authors in relationships with researchers, colleagues, children, and parents as well as principals.

The methodology in this study is structured on five features that have been developed by Reason and Bradbury (2006): *meaning and purpose, practical being and acting, extended epistemology and relational ecological form* (2006, p. 7). However, the fifth feature, *participatory evolutionary reality*, relates to the discussion in this paper.

2.1 Meaning and Purpose

The overall aim in this participatory action research is to develop didactic strategies and knowledge to support multilingual children's literacy development in Swedish preschools. The key issue for participatory action research is to formulate the aim and research questions that have a meaning and purpose to fill in that hole that the participants define as being missing. In this project, this means that the aim, as well as the research questions formulated by the participants, need to be closely related to their profession, that is to say, the fundamental issues for quality with regard to trustworthiness in a participatory research (Gustavsen, Hansson, & Qvale, 2008; Reason & Bradbury, 2006).

The following research question is formulated by the researcher and the participants: What knowledge and didactic strategies are needed to be developed in order to support multilingual children's emergent literacy development?

2.2 Practical Being and Acting

Practical being and acting related to this project can be interpreted as the preschool teacher's participation and actions in order to produce knowledge about teaching and didactic strategies to support multilingual children's emergent literacy development.

This participatory action research project has been carried out in collaboration between the researcher and 15 preschool teachers in Sweden. The preschool teachers represent three different areas distributed over two municipalities in Sweden, in which three teachers were multilingual. The number of years in the profession varies from two to twenty years. The preschools are located in so-called socioeconomically vulnerable areas and about sixteen to twenty different languages are spoken in these preschools.

Overall, the research project employs a mixed-methods design where qualitative data are derived from the preschool teachers' critical didactic analyses, written descriptions referred to video recordings as well as collegial group discussions about didactic strategies. The quantitative data consists of eighteen dimensions of language promotion strategies that are analyzed with the scoring and analysis instrument Social Language Environment-Domain, SLE-D (Norling, 2015a). However, the foundation in this paper refers to written descriptions referred to the preschool teacher's reflections from the video sequences. However, the content in the three dimensions, *play strategies, emotional strategies and communicative strategies* in the SLE-D instrument serves as a support for the preschool teachers in

their qualitative video analyses. Play strategies are explained in terms of activities that are developed in the children's interests. Furthermore, didactic strategies that encourage explorative play relate to language, reading and writing, in which multilingualism is seen as an opportunity to negotiate contents in the play activity. With regard to children's play and the time it takes for children to coordinate their perspectives, smaller groups constitute a didactic strategy to support children's conditions to explore and interact with peers as well as adults. The preschool teachers' support and encouragement in a caring and positive environment that takes into account children's perspectives are related to emotional strategies. Emotional strategies refer to promoting multilingual children to express, speak their mother tongue, confirm and be responsive to children's initiatives to language modeling, reading and writing in order to support the children's language and literacy learning processes. Communicative strategies involve didactic strategies that support and challenge children's communicative competences, that is, asking open-ended questions, using a varied language, an expansive language, listening and giving feedback. Communicative strategies involve resources other than oral language, such as challenging children's communicative skills by using gestures, images, symbols, texts, and multimodal resources, such as music and songs. However, the social language environment encompasses a broader concept of emergent literacy and is defined as:

Varied language environments in a social context, in which language, gestures and symbols are based on previous experiences and life stories—that is, the period and the processes in a person's life leading up to formal reading and writing (Norling, 2015b, p. 101).

2.3 *Extended Epistemology*

One challenge with participatory research is that the theoretical foundations and data collection occur in parallel processes: first, the participant's process of learning and development and second, the phenomenon that is being studied. According to this study, the processes relate to the preschool teacher's knowledge and development of didactic strategies to support multilingual children's language development as well as theories about multilingualism and emergent literacy in preschool.

Drawing on a social constructivist perspective with a focus on the didactic approaches and strategies employed by preschool teachers to support multilingual children's literacy development, the video recordings and the written descriptions are analyzed in accordance with the theoretical foundations of bioecological and sociocultural theory (Barton, 2007; Bronfenbrenner, 2001; 2005; Vygotsky, 1986). Towards a participatory worldview perspective, the theories can be related to the intention of a systematic, holistic and relational research in which the researcher and preschool teachers develop knowledge to become a "part of the whole" (Reason & Bradbury, 2006, p. 11), that is, rooted and formulated by the preschool teachers' voices.

2.4 *Relational Ecological Form*

The starting point of a participatory action research is that participants and researchers create relationships that enable development of knowledge (Gustavsen, Hansson, & Qvale, 2008; Reason & Bradbury, 2006). The development of knowledge in this study can be seen as *relational*, where

meaningful social interactions between the researcher and preschool teachers allow shared perceptions of didactic strategies in order to support multilingual children's emergent literacy development.

In this study, a system thinking approach (Barton, 2007; Bronfenbrenner, 2005) has been applied in order to provide the conditions for relational development of knowledge among the participants. The figure below illustrates the relational ecological form as well as the action process.

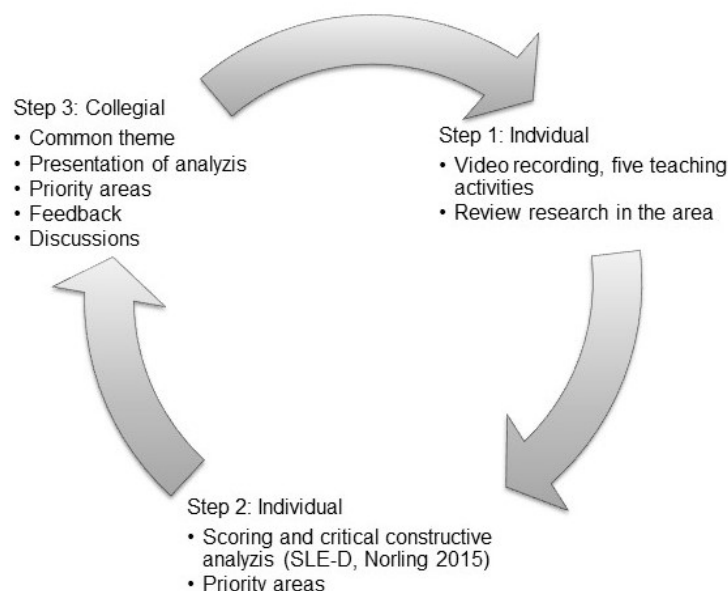


Figure 1. The Figure Illustrates the Relational Ecological Form and the Action Process

The arrows illustrate the learning process that is systematically organized in three steps. This process was conducted five times within a period of 22 months. The procedure was collegial, although the “action” process was carried out individually by each preschool teacher and the didactic questions why, what, how, when, who, as well as the three dimensions in the SLE-D instrument (Norling, 2015a), where used for analyzing the video recordings. However, on the first occasion the preschool teachers and researcher tested jointly to analyze one film sequence (chosen by the preschool teacher), that is, to give preschool teachers the opportunity to discuss any questions with colleagues and how to proceed with the analysis individually.

Concerning this article, the data are based on the preschool teachers' written descriptions and the procedure for the method is as follows. First, the preschool teachers' written descriptions were delivered to the researcher four times, evenly distributed over the time of the project. The researcher and the preschool teachers had jointly decided when and where the coded descriptions should be delivered.

The data analysis in this paper is derived from the preschool teachers' written descriptions collected from the third submission, that is, $5 \times 15 = n = 75$ written reflections based on the video recordings from the teaching activities.

A content analysis (Graneheim & Lindman, 2004) was used to find meaning units that visualize the preschool teachers' written descriptions of didactic strategies to support multilingual children's emergent literacy development. The preschool teachers' written descriptions have a deductive approach (Elo & Kyngäs, 2008), in which their reflections have been coded based on the three dimensions of *play strategies*, *emotional strategies* and *communicative strategies*. The purpose of this strategy was to find the content of various didactic strategies concerning support of multilingual children's emergent literacy development in preschool.

2.5 Ethical Issues

All participants were personally informed about the study, both orally and written, and they signed informed consent forms (Swedish Research Council 2019). Further, the participants were informed that they were free to end their participation at any time. The written descriptions were coded in order to prevent traceability and for confidentiality.

3. Result

The preschool teachers' written reflections of the video sequences are related to the Social Language Environment-Domain (Norling, 2015a) and the three dimensions of play strategies, emotional strategies and communicative strategies. However, the dimensions are multidimensional and the three dimensions interact in parallel processes and do not work separately, as all three are essential for children's learning processes in the social language environment.

The overview shows the content related to the Social Language Environment-Domain that has emerged in the preschool teachers' written reflections.

Table 1. The Overview, Related to the Social Language Environment-Domain

<i>Play Strategies</i>	<i>Emotional Strategies</i>	<i>Communicative Strategies</i>
strategies based on children's interests and experiences exploring multilingualism, language, reading and writing in play activities	support strategies for encouraging multilingualism, language and writing	communicative resources that help to challenge children's communicative skills
Material related to reading and writing	Encourage multilingualism	Multilingual preschool teacher
Small groups	Child perspective/children's perspectives	Expansive language/code switch
Presence of preschool teacher	Responsive Support of participation/empowerment	Feedback and challenge of Multimodal resources

The preschool teachers' reflections from the video-recorded sequences mainly show didactic strategies that are based on multilingual children's interests, strategies that support multilingual children's empowerment and strategies that challenge multilingual children's reading and writing processes.

3.1 Strategies Based on Multilingual Children's Interests

The preschool teachers' reflections show that their presence and attention to children's exploration in play activities contribute to add material that is related to children's popular culture as well as books, paper and pencils, which encourages reading and writing.

We want to take advantage of the children's interests to learn and use the play activity with water as concrete experiences, which underlies the increasingly abstract knowledge and links to the book and story of "Doddo showers and Dadda does the dishes". The socio cultural perspective became important, since the theory emphasizes the context in which language development and learning take place. The context became understandable and was built on children's experiences.

This description shows an awareness of didactic strategies of using children's interests to create meaningful activity. The preschool teacher supports children's concrete experiences of water to another context, a story that the children are familiar with as well as connecting concepts such as *shower* and *does the dishes*. The preschool teacher relates the strategies to the sociocultural theory in which the context becomes important for children's language development.

The preschool teachers' written reflections include both adult-initiated and child-initiated play activities. The descriptions show that they offer children various materials that are connected to the children's interest as well as material that enables the exploration of language, code-switching between languages, reading, printing and writing in play activities. With regard to children's play and the time it takes for children to coordinate their perspectives, smaller groups constitute a didactic strategy to support children's conditions to explore and interact with peers as well as adults. However, the preschool teachers pay attention to the fact that their presence is of great importance in order to confirm, support and encourage children to explore and play with words, texts, symbols as well as visualizing children's learning processes in play activities.

The first idea the children had with the milk cartons was that they should stand on the table, then in the cupboard or on the cupboard (based on their experience). Further, the children developed the play activity, using their creativity, communication and interacting with one another all the time, together with the present teacher who confirmed, supported and encouraged the children in their process of counting [the milk cartons]. The learning environment, together with the presence of the teacher, creates good conditions for learning; likewise [reference to research], who argues that children in preschool need confirmation in oral interactions and a preschool teacher who is responsive to children's interest in learning to interact with peers.

In this description the purpose is to use *milk cartons* in a play activity. The preschool teacher knows

that children have experiences from these cartons from another context, which is noted in the parentheses as an explanation, when the children first put the milk cartons on the table. Further, the preschool teacher illustrates the fact that the presence of an adult is needed to confirm, support as well as encourage children's learning processes, and to link the argument to research.

3.2 Strategies that Support Multilingual Children's Empowerment

In the preschool teachers' analyses, various activities appear in which the preschool teachers use didactic strategies with intentions to create a confident and positive climate. In these descriptions the preschool teachers emphasize the approach of children's perspectives, as well as create conditions for children to feel that they are confident, independent and are constructors in their processes to explore language, reading and writing. These approaches and didactic strategies are applied anywhere and anytime during a day in preschool.

By allowing teachers to be in an environment that is very popular with children, it is easy to create a positive/joyful learning environment. The teacher confirms the children's body language, sound, facial expressions and puts words to what they feel, shares joy with them but also confirms when it feels uncomfortable and a little scary: "And now it was a little too high" [referring to an activity where a child is on a swing]. The children are given power in their own learning processes.

The preschool teacher observes how she confirms the child's initiative to communicate by interpreting the child's gestures and emotions. The didactic strategies are to respond with words and concepts that are connected to the child's initiative to communicate. The preschool teacher claims that this strategy supports children's empowerment of their learning processes.

Children's preconditions for making their voices heard are repetitive in the preschool teacher's reflections. In the written descriptions the preschool teachers pay attention to noticing and supporting children's competences as well as encouraging children's agency and participation in teaching activities.

The children become involved [in the activity] and have the opportunity to influence their own situation and the opportunity for independence. The teacher pays attention and responds to the children, for dialogue and interaction. Children with another mother tongue are affirmed, with the help of gestures and eye contact; additionally, the teacher knows a few words [in the children's mother tongue]. The childminder [multilingual] uses parallel languages consistently throughout the activity and the children have an opportunity to speak their mother tongue.

In the description didactic strategies are apparent, such as confirming the children's intentions to interact as well as promoting independence and multilingualism to encourage children to interact in the language they want to use. The preschool teacher uses gestures and eye contact to facilitate interaction and dialogue with the children, and is supported by a child minder who speaks the children's languages. These strategies allow the children to develop their languages in parallel processes in Swedish.

3.3 Strategies that Challenge Multilingual Children's Reading and Writing Processes

The conditions for multilingual children's reading and writing were the most challenging strategies for preschool teachers to develop. The reflections show that preschool teachers were aware of their lack of knowledge about literacy in general and multilingualism and biliteracy in particular. In many of the reflections, it appears that preschool teachers have a view of what is needed to be developed when critically examining themselves in the video sequences.

We need to work more with text, symbols and tablets as we paint with the children.

The preschool teachers have recognized the importance of having access to multilingual preschool staff. However, the reflections indicate that multilingual staff could participate more extensively.

We should use more multilingual preschool staff and name things in the languages we had access to.

The preschool teachers' reflections indicate that multilingual children need access to various texts in Swedish as well as in several languages:

That the children, in more everyday contexts, see the written language and that it is more accessible in the preschool environment.

Nevertheless, there are descriptions of didactic strategies that challenge children's literacy processes. The preschool teachers' reflections show that they use texts combined with pictures in different environments, for example naming outdoor clothing in various languages. To encourage children's narrative skills, pictures are used to support meaning-making and understanding.

Pictures on the board make it possible to connect to children's own experiences. The kick in the rhyme connects a child to Pippi and quite rightly, Pippi kicks in the movie "Pippi's Christmas".

In the written reflection it appears that pictures are used to support the understanding of rhyme, namely in encouraging children to connect one picture to another that sounds similar but shows different things. In this example, the preschool teacher notices that a child, through experience in the existing context, connects a picture of a kick to another context and the popular figure, Pippi Long stocking. Furthermore, the multilingual children are challenged to write in various activities.

The children wrote their names on the drawings. The children who could not [refers to writing their name] is invited to collect their names, as we have labels with the children's names on. It was fun to see that a child learned to write their name during this time.

It is common that the preschool teachers support children with printed text in various languages or use tablets to visualize letters and texts. Furthermore, the preschool teachers' reflection is that books create opportunities for conversation, and inspire children's own storytelling, reading and writing. There are opportunities for an expansive language in continued book practice.

4. Discussion

The overall aim in this participatory action research was to develop didactic strategies and knowledge to support multilingual children's language and literacy learning in Swedish preschools. The participating preschool teachers have, by using video recording as well as support of the analysis tool SLE-D (Norling, 2015a), been able to analyze and make written descriptions about their actions in preschool activities, aiming to support multilingual children's emergent literacy development. The written descriptions of their reflections indicate various activities in which didactic strategies have been systematically tested and critically analyzed constructively in relation to preschool teachers' beliefs and knowledge.

4.1 Participatory Evolutionary Reality

According to Reason and Bradbury (2006), there are questions that are of importance for the credibility, validity and the quality in a participatory project. The following discussion will continue with five general questions: *emergence and enduring consequence, questions of outcomes and practice, questions about plural ways of knowing, questions of relational practice and questions about significance.*

Action research is an emergent process, an evolutionary and educational process of engaging with oneself and other persons. In this project, the researcher themselves and other persons are the participating preschool teachers, principals and preschool managers who need to be sustained for a significant period of time. From a bioecological perspective (Bronfenbrenner, 2001; 2005), principals and managers in this study are seen as resources within the mesosystem that create conditions for the preschool teachers to engage in educational processes and develop knowledge as well as "actions". However, the preschool teachers are the active players in the personal educational process and the collegial changing and development in interaction with the immediate environment, that is, colleagues and multilingual children.

The evolutionary and educational process draws attention to questions of emergence and enduring consequence (Reason & Bradbury, 2006). The "actions" and collegial discussions have developed knowledge and learning about didactic strategies to support multilingual children's emergent literacy development, and as one preschool teacher expressed: *"my attitude has changed, it feels like I got new glasses that I cannot do without"*.

Some preschool teachers connect their written analysis to their knowledge and learning process in this participatory action research, such as video recording as a support to analyze didactic consequences.

I feel that continuing knowledge [aims of this participatory action research] gives me inspiration and a better understanding of both pedagogy and didactics. Based on children's perspectives, encouraging oral communication means more initiatives for communication.

When preschool teachers examine themselves in a commonly occurring teaching activity, the preschool teachers gain insight into how they can challenge multilingual children's emergent literacy

development in that particular situation and activity. Questions about how the contribution of knowledge and results are relevant to the processes of inquiry, as well as whether the results are authentic and practice-enhancing, are related to questions about outcome and practice (Reason & Bradbury, 2006). The research question, formulated by the preschool teachers in this study, is about what knowledge and didactic strategies are needed to be developed in order to support multilingual children's emergent literacy development? The research question was formulated since the preschool teachers expressed their lack of knowledge and didactic strategies to support both the Swedish language and multilingual children's mother tongues, as expressed in Swedish National Agency of Education (2018). Furthermore, previous research indicates that more research is needed to support multilingual children's emergent literacy development (Björk-Willén & Comdal, 2009; Cummins et al., 2005; Norling & Sandberg, 2018).

This paper highlights the process of knowledge about didactic strategies and linguistic content related to play strategies, emotional strategies and communicative strategies. The didactic strategies are illustrated in some examples of preschool teachers' written reflections about multilingual didactic actions in preschool activities in "real life", that is to say, the preschool context in multilingual preschools. The written reflections are authentic and practice-enhancing for both participants and practicing preschool teachers. In a participatory research project, it is important to communicate acquired knowledge to practicing within the profession. By describing the development of knowledge, knowledge can be consolidated at the same time as it is communicated to other practicing preschool teachers. In addition, it can lead to preschool teachers' empowerment (Gaventa & Cornwall, 2008).

4.2 Didactic Strategies to Support Multilingual Children's Emergent Literacy Development

The results show three overall themes of didactic strategies: *strategies based on multilingual children's interests*, *strategies that support multilingual children's empowerment*, and *strategies that challenge multilingual children's reading and writing processes*.

According to strategies that are based on multilingual children's interests, the written reflections show that the preschool teachers have developed awareness and knowledge about meaningful learning environments such as play activities that promote children's exploration and meaning making. The preschool teacher's written reflection relates to the didactic question of *why* meaningful learning environments are important for multilingual children and are described in terms of "*concrete experiences*". The children are offered opportunities through concrete situations; they explore abstract concepts in a context with artefacts, such as books and props that are related to their experiences. The written reflections are in line with previous research that claims that meaningful play activities promote multilingual children's ability to use their languages in parallel processes as well as to process linguistic concepts (Grøver Aukrust, 2008; Norling & Lillvist, 2016). However, play activities can be performed both as an adult-initiated or a child-initiated play. Research shows that multilingual children give response and challenge one another in child-initiated play activities such as linguistic concepts, book reading and writing (Björk-Willén & Comdal, 2009; Norling, 2015b). The results in this study

show that the preschool teachers promote children's own initiatives to play, in which they organized the play environment with artefacts to support a positive climate and multilingual children's engagement.

The preschool teachers' approach seems to emphasize a child's perspective that is related to preschool teachers' strategies that support multilingual children's empowerment. Research shows that multilingual children can initiate and maintain play activities by using physical resources such as gestures and imitating one another as well as preschool teachers being able to support multilingual children's cultural and language development (Ledin & Samuelssons, 2016). Furthermore, the preschool teachers' written reflections indicate that they create conditions for children to feel that they are confident, independent and constructors of their own learning processes as well as the fact that all languages are seen as a resource for emergent literacy development. With reference to the preschool teacher who wrote: "*children are given power in their own learning processes*", the reflection indicates that the preschool teacher has knowledge about children's agency and motivation in their learning process. This is in line with research (Kress, 2009) that states that children can be constructors of their own learning process if they have access to various artefacts such as digital tools. Moreover, the preschool teachers' reflections indicate the importance of the teachers' use of gestures and eye contact to facilitate interaction and dialogue with the children as well as using multilingual teachers as resources to promote children to develop both Swedish and their own languages in parallel processes.

Multilingual children's empowerment is closely associated with democracy, and Hermansson and Lindhé (2019) argue that digital reading can encourage children into democratic cooperation. However, strategies that challenge multilingual children's reading and writing processes in this study seem to be challenging strategies. However, the preschool teachers' reflections show that they have developed knowledge about multilingual children's emergent literacy development since they suggest various strategies to promote biliteracy such as offering children different texts and symbols both in paper print and on tablets that are more accessible in the preschool environment. The preschool teachers' suggestions relate to Cummins et al. (2005) who highlight the importance of multilingual children's identity and opportunity to use their languages in parallel processes to transfer concepts as well as text from one language to another. However, it can be difficult for the preschool teachers who do not share the same language as the children. Nevertheless, parents of multilingual children can be a linguistic resource to both their children and the preschool teachers. This is in line with the bioecological theory that suggests participation and collaboration with parents in children's development and the transition between languages (Bronfenbrenner, 2005).

4.3 The Exchange of Beliefs and Knowledge

The data collection in this paper is derived from the third of four submissions. The reason for the strategy was that the preschool teachers may have developed some knowledge about supporting strategies to multilingual children during the first two submissions, with the aim of making the reflections more detailed as well as developing a critical approach to their actions. The written reflections that are analyzed in this study indicate that the preschool teachers developed knowledge

about multilingualism as well as children's processes of emergent literacy skills. These rich written reflections would not have been possible unless the preschool teachers, in combination with video analysis, gained knowledge about research in the area and participated in collegial discussions. The video recording as a method seems to be in line with the stimulated recall method (Schepens et al., 2007), although in this study it was the preschool teachers who analyzed their own teaching activity. The various methods created conditions for the preschool teachers to develop both their professional language as well as multilingual didactic strategies. This will lead to *questions about plural ways of knowing*, various forms of knowing and the relationship between different ways of knowing (Reason & Bradbury, 2006; Gaventa & Cornwall, 2008).

The exchange of beliefs and knowledge as well as the collegial learning process between the researcher and preschool teachers have contributed to a broader perspective on multilingualism in preschool. The collegial discussions have highlighted the preschool teachers' beliefs, and by sharing their beliefs and reformulating them into knowledge that has been tested (the action) in practice, the knowledge has been anchored to best practice on a disciplinary foundation. This process relates to Alexander and Dochy's (1995) concepts of *knowledge* and *beliefs*, in which knowledge is perceived as facts and concepts gathered from theory or empirical understanding, and beliefs that imply a part of some knowledge in daily experiences. The collegial discussions relate to *questions of relational practice*, and where the relationship dimension draws attention to the quality of interaction that has been developed in the inquiry and how the values on democracy have been actualized in practice (Reason and Bradbury, 2006). The learning and the process of developed knowledge (see Figure 1) have been implemented both individually and collegially. Each participant, as well as the researcher, had power over their own process, planning and formulating aims for teaching activities, video recording the teaching activities (action), analyzing didactic strategies, making written reflections and formulating priority areas that the preschool teacher decided had to be developed. Based on the individual process, the questions and priority areas were formulated based on the preschool teacher's own decisions. Furthermore, in the collegial discussions, each preschool teacher shared their priority areas, aiming at obtaining collegial feedback.

The *questions about significance* are about whether the participatory project has processed the issues that have been of importance in relation to the participants' profession, beliefs and knowledge. According to this project the research question, formulated by the participants, was: *what knowledge and didactic strategies are needed to be developed in order to support multilingual children's emergent literacy development?* The question was formulated based on the participants' perceptions of their lack of knowledge in the area. The absence of multilingual strategies in preschool is also confirmed by the Swedish Schools Inspectorate (2017) which specifically points out the lack of didactic strategies to support multilingualism, using play activities as a resource for multilingual children's language learning as well as collaborating with multilingual parents. The findings of the preschool teachers' written reflections indicate that multilingual strategies have been processed in a process of their beliefs

and knowledge related to both theory and research. However, this study is based on fifteen preschool teachers' written reflections where video recording has been a tool for analyzing and developing didactic strategies to support multilingual children's emergent literacy development. The process is based on the aim of action research, which means that the development process is based on the participants' formulated research questions within an organization, in this case preschool. Therefore, the results cannot be generalized; however, the results can contribute to highlighting didactic strategies that support multilingual children.

4.4 Conclusion

According to Gaventa and Cornwall (2008) there are three dimensions which are characteristic of participatory research: first, *knowledge*, which refers to a resource which affects decisions, and second, *action*, which looks at who is involved in the production of such knowledge, and third, *consciousness*, which relates to how the production of knowledge changes the awareness or worldview of those involved. With reference to this study, the preschool teachers developed their professional language based on research and theories related to multilingualism and emergent literacy skills. This relates to the intentions of action research, in which the preschool teachers formulate their written reflections to support multilingual children's emergent literacy development into the preschool environment and the expressions of the profession (Reason & Bradbury, 2006). The action learning process has generated knowledge among both the preschool teachers and the researcher. It seems that the preschool teachers have improved their knowledge and furthermore developed an intercultural approach, where all languages, multilingual preschool teachers and multilingual parents are viewed as assets for emergent literacy development.

The action process, supported by the video recording and the analysis instrument SLE-D (Norling, 2015a), has created conditions to analyze multilingual strategies as well as preschool teachers' critical approach and knowledge to support multilingual children's literacy and illiteracy development. This study has contributed to a better understanding of how preschool teachers learn about, analyze and develop didactic and constructive strategies with regard to multilingual children's conditions for literacy development in Swedish preschools. Although this study refers to a qualitative method, it is important to point out that the mixed method design has been necessary in this project, since each method makes a partial contribution to an overall understanding of multilingual children's conditions for emergent literacy development.

However, the report from the Swedish Schools Inspectorate (2017) and voices from research express that multilingual strategies in preschool are needed as well as involving parents in order to facilitate multilingual children's emergent literacy development (Norling & Sandberg, 2018; Wedin et al., 2019). The Government offices of Sweden decided in June 2019 to offer grants to promote better conditions for children as well as multilingual children's language development in preschool (Ministry of Education and Research, 2019). This indicates that multilingual efforts are needed; however, it is important that the efforts are utilized and applied according to best practice on a disciplinary foundation,

over time. Therefore further action research, in which video recording is used as a tool for critical analysis on multilingualism in preschool, may have a considerable role in future research.

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