

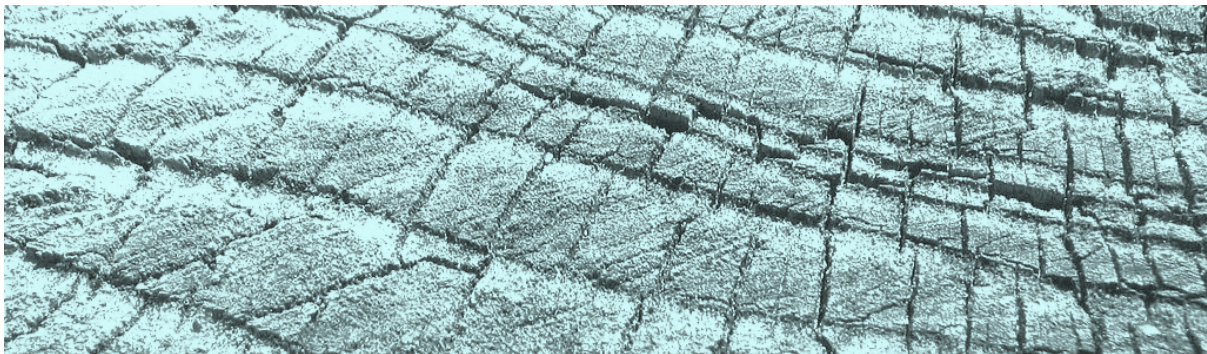
# Structural conditions for children's play in kindergarten

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*Abstract:* This article explores how the organisation of children, physical space and materials influences the structural conditions of play in kindergartens in Norway. The main purpose is to analyse relations between the organizational model of the kindergarten and these structural conditions of play. The result are based on a survey and interviews with head teachers and pedagogical leaders from 127 kindergartens. The results indicate that the kindergarten's choice of organizational model provides varying structural conditions for children's play. One can conclude that some of the variables included in the study, like access to play materials and group size, may promote the quality of children's play.

*Keywords:* play, space, materials for play, organisation

## Introduction

Traditionally, the Scandinavian kindergarten model, characterised by a comprehensive view of learning where care, play and learning are considered interlinked, has had a prominent role in Norwegian kindergartens. The role of play is of prime importance in policy documents such as *The Framework Plan for Content and Tasks for Kindergartens* (The Norwegian Ministry for Education and Research, 2011) and Parliamentary White Paper no. 24, *The Kindergarten of the Future* (The Norwegian Ministry for Education and Research, 2013). In these documents play is described as a basic tool for life and learning through which children express themselves. According to the recent revision of the purpose of kindergartens (The Norwegian Ministry for Education and Research, 2011) there should still be a broad approach to children's learning; play should have a greater role and play

should constitute the basis for learning and all-round development. As a result of these attitudes to learning in Norwegian kindergarten policy is internationally acknowledged (e.g OECD, 2006, 2013). The purpose of this paper is to investigate how the organisation of children, space and materials in kindergarten may promote or restrict children's opportunity to play, by answering the following research question: *Is there a link between the organizational model of the kindergarten and structural conditions of play?* Data used in this paper are generated in *The Behaviour Outlook Norwegian Developmental Study*<sup>1</sup> (henceforth referred to as BONDS; Ogden, Nærde, Janson, Bergerud, & Bjørknes, 2006).

### *Play*

Play is a complex phenomenon and it is difficult to find a comprehensive definition (Sutton-Smith, 1997). In this article, Lillemyr's three dimensions for describing play as a phenomenon are used: "the intrinsic value of play for children, learning through play and play as inspiration and motivation" (Foss & Lillemyr, 2013 p.135). According to Lillemyr (2013) the child can be totally engrossed by and in play. Steinsholt (1998) hints with reference to Gadamer, that a child at play is able to both forget and find him- or herself. Such a philosophical perspective indicates that children play for the sake of play. Learning also takes place when the child acquires skills and knowledge through play (Balke & Skard, 1976). Through negotiating relationships and participation in play, children make important discoveries about their own social integration and personal development (Alvestad, 2010, 2012; Ruud, 2010), as well as the child being able to establish friendships (Corsaro, 2002). Thus, play functions as inspiration and motivation for the development of affiliations and social ties, for establishing contentment and create personal opinions.

Beside the relational perspective, materials and physical environment are also important for creating a space for play and action (Nordin-Hultman, 2004; Thorbergsen, 2007, 2012b). Structural conditions for children's play in kindergarten refers to how kindergartens organise the physical environment to play in everyday life in kindergarten (e.g. physical environment as available toys, play area, size of child groups). This article builds on a socio-cultural perspective, where play and learning is understood as processes where the child in a cultural and social context creates meaning and knowledge (Lave & Wenger, 1991; Säljö, 2001) where children are viewed as competent participants. In a socio-cultural perspective, one assumes that there is a relation between the external, structural factors and the child's internal qualifications (Strandberg, 2008) and that the child's experience of the environment is an important factor contributing to learning and development.

### *Organisation of the Kindergarten*

Since the middle of the 2000s, the Norwegian kindergarten sector has been subject to various changes, and the organisation of kindergartens has been especially affected by the large-scale construction of new kindergartens, the high percentage of children aged under three, and changes in the understanding of children's development (The Norwegian Ministry for Education and Research, 2013; Vassenden, Thygesen, Brosvik, Alvestad, & Abrahamsen, 2011). Kindergartens formed as theme- or base organised kindergartens are part of a new organisational form, described by Wilhjelm (2013) as conceptual plans where room organisation is more fluid and rooms can be used by different groups of varying sizes. This change is largely due to the new ways of organising children, space, materials and time, and there is a variety of opinion amongst kindergartens as to how this process has been experienced. Another important reason for the development of more flexible kindergartens is the acknowledgement of children as social beings who are skilled, eager to learn and have a right to

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<sup>1</sup> The Behaviour Outlook Norwegian Developmental Study (BONDS); for further information, please refer to the project's website: [www.barnssosialeutvikling.no](http://www.barnssosialeutvikling.no)

influence their own kindergarten day. Through flexibility, children can act more independently and make their own choices about what they want to do, where they want to be and who they want to be with (Buvik et al., 2004). The article is referring to following organizational models of kindergarten that can be described as follow:

*Department organized:* Children are divided into permanent groups that have their own defined area in the building, called department. Each department usually has a wardrobe, a large play- and living room and also one or two smaller play or restrooms (ibid). Different apartment's inn one kindergarten is often sharing a large kitchen and a common room. Hence there are several rooms in kindergarten having the same function.

*Age-homogenous organized:* Children are divided into permanent groups (e.g. group with one years old child, groups with two-year old children etc.). Kindergartens where the division of child groups and the physical environment is adapted to each levels. The rooms division is otherwise similar to the departmental organized kindergartens.

*Base organized:* Children are gathered in to permanently large groups in varied sizes. Each group disposes smaller area, which is called the base. Function rooms as a wardrobe, toilet and baby changing facilities are often more common, Base organized kindergartens share several indoor spaces compared to departmental organized kindergartens. The common areas can be used by miner children's groups at the same time, or they can be "booked" by larger units.

*Non-departmental organized:* Children are not divided into permanent groups. All play and living areas are open for use of all children and to share utilization and staff has a common responsibility for the entire groups of children in the kindergarten.

In the Norwegian context only a few studies examine how various organizational forms affects the child's play and learning in kindergarten. Both the IRIS-report (Vassenden et al., 2011) and a study of quality indicators in the kindergarten by Gulbrandsen og Eliassen (2013) show a tendency to larger kindergartens, but that the majority of institutions (79%) in 2012 still define themselves as traditional departmental organized kindergartens. The reports also reveal that both group size and the base area of departments has become larger, and that kindergartens that have been established since the mid-2000s are considerably larger than day care centres built before this point of time. When it comes to younger children, recent Norwegian findings indicate that increased group size may have negative consequence on children's social competence (Zachrisson, Backer-Grøndal, Nærde, & Ogden, 2012a, 2012b).

### **Structural Conditions for Play in Kindergartens**

The physical environment of kindergartens is a considerable structural factor defining as it does the conditions for the opportunities for young children to play and act independently. Physical environment is here understood to be the building, the architectural design of the space, interiors and furnishings as well as the toys and materials in this space. An examination of the external physical play area based on the same data, has already been described in a previous article, which is why it is not considered in this context (Moser & Martinsen, 2010). Buildings and their design express ideology, financial constraints and the interests of the child and childhood.

Structural restrictions on children's play also concern how kindergarten staff allow individual children to participate in the design of space and toys, how staff allow children's play, body language and facial expressions to determine the organisation of activities, groups of children and the rhythm of

the day. Children's opportunity to participate and to create understanding through the organisation of their own play requires a spatial organisation and furnishing of the kindergarten which allows diversity of play and learning activities. According to Kirkeby, Gitz-Johansen, and Kampmann (2005), the rooms in a kindergarten are strongly coded when they limit the opportunity for children to participate beyond the planned intention of that room, whilst rooms which are vaguely coded will enable children to have greater opportunity to decide for themselves how they want to use the room (Bernstein, 1974). Furthermore, it is important that staff allow children to influence their time in kindergarten by, for example, being aware of how time can promote or hinder children's play.

### *Space for Play*

The design of the rooms of an institution, especially in institutions where each room has its own purpose will affect the availability of toys and materials. This becomes evident when new kindergartens are extended. From being traditional kindergartens with few special-interest rooms, newer kindergartens have a larger proportion of rooms with specific functions such as sensory rooms, libraries, workshops, art rooms and maths rooms (Vassenden et al., 2011). When the rooms convey clear messages as to what is going to and what should happen in them, and therefore indirectly also what should not happen there, this can be viewed in line with a pedagogical tradition which expects professional rewards and appropriate behaviour. In this way, the rooms of the kindergarten indicate a view of children and of learning. When kindergartens are built with several special-interest rooms, it can be viewed as a means of creating several strongly coded rooms (Bernstein, 1974; Gitz-Johansen, Kampmann, & Kirkeby, 2001), where the intention might be to lay the foundation for a more visible pedagogy with clear requirements and expectations of the children and the pedagogues (Seland, 2012). It may be relevant to question whether such organisation and allocation of rooms and toys increases a child's opportunities to play and make choices, or whether it leads to increased adult regulation with waiting and booking lists (Moser, 2012). This can be linked to the question of whether a kindergarten allows spontaneous play or whether adult-centred activities dominate the day. If the prevailing practice is to prepare children for the transition to school, this *may* influence the interior design and the organisation of a kindergarten's pedagogical activities, which may not necessarily facilitate the best conditions for play.

### *Materials for Play*

In this article, all objects significant for a child's play are described as toys or materials for play. The play material available in a kindergarten will be highly significant for a child's play and should therefore be selected consciously. What children see when they enter a kindergarten room, what play material is available, where it is placed and how it is organised will be factors which hinder or promote the conditions of play (Thorbergsen, 2012b). In the survey, the traditional concept of 'toys' has been expanded to include art materials. Objects which may not necessarily have been introduced as toys may be included by children in their activities and thus become a relevant object of play. It is how a child uses an object which will determine whether it can function as a toy, and access to open material (such as art materials) will introduce a more creative dimension to play (Trageton, 2009). Lenz Taguchi claims that children develop in line with what is available in their surroundings and that learning arises between people and materials when people create their own environments and materials, and when materials and environments create people (Lenz Taguchi, 2010). When play arises where a child's internal and external environment meet (Hangaard Rasmussen, 2002; Lenz Taguchi, 2010), and in the meeting between the material surroundings, the available play material may also be significant in the generation of ideas and the putting of these ideas into practice (Thorbergsen, 2012b). The presentation of accessible play material in the space available in a kindergarten enables the child

to experience a variety of input from the sequence of play arising in a kindergarten, and the materials' role in play allows the materials to play their role in a child's learning processes.

## **Design and method**

The empirical basis of the article is based on analyses of the data generated in the BONDS-project which is examining the development of social competence and behavioural problems in 1159 children from infancy to the age of seven (Ogden et al., 2006). Data from the initial assessments (2009) is included in this survey, which is therefore a cross-sectional study of selected data of the longitudinal project.

### *Participants*

The survey covers five Norwegian municipalities, which due to their geography and demography can be considered a representative selection (one city, two medium towns and two smaller districts). These five municipalities have a total of 127 kindergartens that take part in the survey, and it was sent out a questionnaire to the head teachers and the pedagogical leaders in the participating projects. In 116 of the 127 kindergartens, the head teacher and at least one of the pedagogical leaders responded to their questionnaire. This means that 91% of head teachers answered. We have calculated that approximately 71% of pedagogical leaders' working in the selected kindergartens has answered the questionnaire. In addition, interviews with 109 head teachers of the 127 participating kindergartens have been conducted.

### *Methods for Generating Data*

The questionnaires and interview guides were developed on the basis of a review of theoretical and empirical research literature, our own experiences and those of other kindergarten teachers of pedagogical practices and experiences in a pilot study (Martinsen, 2008; Martinsen, Moser, Janson, & Nærde, 2009).

*Questionnaire Completion* - In 2009, questionnaires were sent to all the head teachers and pedagogical leaders at the 127 institutions. The head teachers submitted electronic questionnaires (Questback), but they could also submit a hard copy. The pedagogical leaders were only able to complete a hard copy of the questionnaire, as computers were not available for an Internet-based survey of this group. The head teacher's questionnaire contained a total of 115 questions where 104 involved ticking boxes, six were open questions and five questions gave the opportunity for more extensive comments. The questions on the form were divided into six areas: structural characteristics of the kindergarten, characteristics of the staff, the outdoor area, pedagogical content and working methods, parental interaction, self-evaluation of institutional qualities and management. The questionnaire for the pedagogical leaders consisted of 104 questions, where 97 involved ticking boxes, four were open questions and three gave the opportunity for more extensive comments. The questions on the form cover seven dimensions: structural characteristics of the department/group, characteristics and organisation of the physical environment, organisation of the child's normal day, organisation of meals, interaction and relationships, collective skills, practices to support behaviour.

The head teacher of each kindergarten collected the questionnaires in a sealed envelope from each pedagogical leader in their institution. These were then sent to the Norwegian Centre for Child Behavioral Development in Oslo where the answers were registered in an SPSS computer file by a research assistant. The responses from the electronic questionnaire were transferred directly to an SPSS file.

*Interview Completion* - In addition to the questionnaires, interviews with the head teacher were carried out when visiting each kindergarten in 2009. The purpose of the interview was to give the head teachers the opportunity to expand on issues raised in the questionnaire as well as to gather information about the work of the kindergarten with regard to social skills and child participation. The interview guide consisted of twenty open questions containing seven dimensions; organisation of children's groups, daily rhythm, kindergarten's space, play, activities and events, social skills and child participation. The answers were written by hand during the interview and transcribed immediately after the interview. The content of the answers of seven questions was categorised analytically for further statistical analysis in SPSS 19. In this contribution, the presentation of the data will be mainly limited to the questionnaires and only to answers from the interviews will be occasionally used to gain a deeper understanding of the quantitative data.

#### *Data Analysis*

After controlling the data matrix for failures, the data was analysed using SPSS 19 (Norusis, 2012). Two files were created, one for the head teachers and one for the pedagogical leaders. The answers on seven questions from the interviews with the head teachers were, as mentioned before, quantified and included in the head teachers' SPSS file. The distribution of the data was checked. If normal distribution was not achieved, or if the data was at an ordinal level, non-parametric statistical analysis was used, otherwise parametric analysis was applied. To answer the research questions mainly descriptive and correlative procedures were required.

#### *Limitations*

Regarding the study's external validity some limitations have to be taken into consideration. Respondents were recruited from five different municipalities located in the eastern part of Norway. Relatively large geographical differences in population density and the degree of urbanization between different regions in Norway represent a weakness regarding generalization of the findings to the entire population. However, the selection of the five municipalities was conducted in a way that the basic demographic variations are represented in the sample. Moreover, the sample is characterized through an unequal distribution of various types of kindergarten. Base organized, age-homogeneous and non-department organized are in a clear minority compared to department organized kindergarten (see table 1). This has implications in terms of validity where it is questionable whether the three first mentioned types of kindergartens are representative in terms of population. The data nevertheless provides an insight into how a small selection of these kindergartens structures the conditions of play. The survey has high validity in regarding to the response rate; 91% of head teacher's and 71% of the pedagogical leaders have responded to the questionnaire. The high response rate may indicate that be extensive questionnaire with many questions as well as the theme and the design of the questions were relevant for both response groups. Validity can also be seen in the context of the selections of method; therefor to further enhance the validity of the survey interviews were conducted with head teachers. Furthermore both the questionnaire and the interview guide were designed based on experience from a pilot study in a limited number kindergarten.

#### *Ethical considerations*

The study is conducted in accordance with national accepted values and research ethical regulations. The project is approved by the Regional Committee for Medical Research Ethics, Southern Norway, and the Ombudsman for Research (Norwegian Social Science Data Services). This data used are storage in a way that no individual or institutional sources are identifiable. This paper does not include assessments or other collections of data concerning children. The participants, head teachers and

pedagogical leaders, are explicitly informed that the information collected will be used for this purpose, and not for other purposes.

## Results and Discussion

The results from the questionnaire and the interviews will be presented in three sections. Firstly, a descriptive overview of the organisation of the kindergartens is provided. Then the structural conditions for play are illustrated through a presentation of the available space and along with a descriptive presentation of which materials and toys are available in the kindergartens. Finally, the relations between the conditions of play and the organisation of kindergartens will be analysed and discussed.

### *Organisation of the Kindergartens*

The kindergartens included in the study were organised as follow (table 1):

**Table 1:** Overview of type of organisation, number of organisational units and number of children in the units in the kindergartens (N=117 head teachers)

Type of Organisation	Kindergartens with this organisation	Number of units*	Minimum number of children per unit	Maximum number of children per unit	Number of children (average)
Department	81 (69.2 %)	220 (81.4 %)	6	29	16.9
Age-homogenous	6 (5.1 %)	13 (4.8 %)	5	21	16.9
Non-departmental	18 (15.4 %)	18 (6.6 %)	13	83	23.4
Base organised	12 (10.3 %)	19 (7.0 %)	9	44	21.0

\*number of units with this type of organization in the data material

Nearly 70% of institutions have a traditional departmental organisation, whereas only 10% indicate that they are base-organised kindergartens. This suggests that alternative forms of organisation in newly-established kindergartens are possibly not as frequent as often assumed. The table shows that kindergartens which are described as non-departmental have most children per unit (23.4), whilst base-organised kindergartens have an average of 21 children per base. Fewest children are found in the departmental and age-homogenous kindergartens with an average of 16.85 children per unit. The difference between the number of children per unit in the various forms of organisation is statistically significant (Oneway Anova,  $df=3$ ;  $F= 9.796$ ;  $p<0.001$ ). A post hoc analysis using Scheffé's multiple comparison t-test indicated that the non-departmental kindergartens differ from the age-homogenous ones ( $p<0.01$ ) and that the departmental kindergartens differ from both the base organised kindergartens ( $p<0.05$ ) and the non-departmental kindergartens ( $p<0.001$ ). Beyond this, the number of children in the units did not differ statistically significantly between the different organisations. Base organised and non-departmental kindergartens together comprise approximately a quarter of all kindergartens. When considering this, it should be remembered that non-departmental kindergartens often are smaller institutions that is kindergartens with fewer children in the entire institution, which can lead to a reduced need for division into groups.

Furthermore, the existing material reveals no link between the organisational form and the year the kindergarten was established. Several of the newer kindergartens included in the selection, have chosen a traditional departmental form of organisation, and the tendency towards a growing percentage of base organised kindergartens is not apparent in the data collected. The same tendencies were revealed by Gulbrandsen & Eliassen (Gulbrandsen & Eliassen, 2013) in a report about *Quality in Kindergartens* where the percentage of departmental kindergartens in 2008 was a stable 80% independent of when the kindergarten was established, but in the same survey from 2012, the percentage of newer departmental kindergartens had fallen to 67%. The decreasing share of departmental kindergartens is even more dramatic in Vassenden et al. (2011) which indicates that the percentage of departmental kindergartens is only 36% for businesses constructed after 2005.

*Space to Play*

The size of the play and recreational area per child in kindergartens is considered to be a measure of structural quality (The Norwegian Ministry for Education and Research, 2013), and it therefore seems relevant to investigate the area available for play. Table 2 indicates that each department has an average of 79 m<sup>2</sup> (s=29.5) available area for play, and the average per child in this selection is 4.8 m<sup>2</sup> (s=2.1). This is somewhat more than what is advised by the Norwegian Ministry of Education and Research as the normal area (2006) of 4 m<sup>2</sup> for children over three years old, but significantly lower than what is advised as the norm of 5.3 m<sup>2</sup> for children aged under three. The relatively high deviation from the standard indicates that there is a great number of kindergartens which lie significantly above and below the advised norm. This result is negatively significant with regard to Vassenden’s (2011) survey which indicates 5.7 m<sup>2</sup> per child. A large amount of children in each unit in relation to the available area may give rise to a variety of challenges, and the amount of children per square metre may be a factor restricting a child’s play. In the present study variations in size between kindergartens with different organisation were revealed (Martinsen & Moser, 2011).

**Table 2:** Overview of the size of the units in the various kindergartens according to the organisational form and the square metres calculated per child in these units (N= 160 pedagogical leaders)

Type of Organisation	Size of the unit (m <sup>2</sup> ), min-max	Area per child (m <sup>2</sup> )
Departmental	72.3 (30-140)	4.6
Age-homogenous	55.2 (18-85)	3.5
Non-departmental	129.6 (75-187)	6.9
Base organised	116.8 (20-121)	5.3

The differences between the various organisational forms are statistically significant (Oneway Anova, df=3; F= 6.91 p<0.001). A post hoc analysis using Scheffé’s multiple comparison t-test indicated that the non-departmental kindergartens differ from the age-homogenous kindergartens (p<0.05) and the departmental kindergartens (p<0.01) whilst base organised kindergartens do not differ statistically significantly from any other forms of organisation.

With regard to physical area per unit, the results indicate that the non-departmental and the base organised kindergartens have most square metres per child. In the non-departmental kindergartens, the children have nearly twice as large an area available compared to children in kindergartens with an age-homogenous structure. Greve (2009) claims that young children need sufficient physical space to be able to develop their friendship relationships using their physical behaviour when playing, and it may give cause for concern if particularly the age-homogenous kindergartens do not have sufficient space at their disposal for the youngest children when the area per child is below the recommended norm in several kindergartens. According to Løkken (1996) the



spatial conditions are significant for physical communication between the youngest kindergarten children.

When play is understood to be a relational project, it may well be an advantage if the kindergarten can enable play to occur in smaller groups. The results here indicate a substantial proportion (33%) of departments where appropriate conditions for play in smaller groups do not exist. When the differences between the opportunity to play in small groups and the organisation of the kindergarten are investigated, it is in the age-homogenous and the departmental kindergartens that conditions seem to be optimal for undisturbed play in small groups. In these kindergartens, half of the pedagogical leaders say that the rooms are arranged such that plays in small groups rarely disturbed by other children. In the base-organised and non-departmental kindergartens children have less opportunity for uninterrupted play, respectively, 33% and 35%. Traditionally, children in Norwegian kindergartens have been organized into smaller children's groups, and with a lot of time allocated to the game. Questions can be raised about this difference in the ability of continuous play and generally weak priority of space for play, as may be an expression of a shift towards a greater prioritization of specific academic subjects and less focus on the conditions of play.

When the teaching discourse and the new attitude of children as competent and thirsty for knowledge becomes the dominant discourse in kindergarten, this might be expressed through the preparation of special-interest rooms at the expense of space to play. Kindergartens which physically enable smaller groups to play in a concentrated fashion allowed children to become completely engrossed in their play (Steinsholt, 1998), can be described as active protectors of play (Melaas, 2013). For play to endure and develop further, space for undisturbed play is one of the factors which can promote the conditions of play in kindergartens. In non-departmental and base organised kindergartens, this opportunity is reduced as the results indicate that children in these kindergartens have fewer opportunities to play in small groups undisturbed.

Further investigations included what type of special-interest room was available in those institutions indicating that they had rooms for specific functions. In addition to the base organised kindergartens, 21% of the departmental kindergartens indicated that they had rooms specifically for special activities or play. In the interviews, the head teachers were asked to indicate what type of rooms were available in the kindergarten, and as indicated in table 3, *communal* rooms are found in over half of the kindergartens. The term *communal* room indicates an understanding that the room is at the disposal of all the children, often including functions such as a communal kitchen or dining area for the whole kindergarten. Rooms for physical play, often described as rooms for movement or gym halls, have been established in nearly 50% of the institutions and several clearly defined rooms such as rooms for construction games, rooms for language stimulation, art rooms, role-play rooms and computer rooms are found in over 20% of the kindergartens in the selected kindergartens.

**Table 3:** Overview of the special-interest rooms in the kindergartens (N=128 head teachers/ from the interviews)

Special-interest rooms in less than 10% of kindergartens	Special-interest rooms in 11% to 30% of kindergartens	Special-interest rooms in 31% to 50% of kindergartens	Special-interest rooms in more than 51% of kindergartens
Sensory rooms	7 %	Construction play	30%
Access to special-rooms in schools	6 %	Language room/library	27 %
Maths room	4 %	Art room	26 %
Nature playroom	4 %	Role play room	25 %
Imagination room	3 %	Computer room	20 %
Carpentry room	3 %	Music/drama	19 %
Room for playing with cars	2 %	Special-pedagogy room	16 %
Clay workshop	2 %		
Research room	1 %		
Pool	1 %		
		Physical play	46 %
		Communal room	53 %

As indicated in table 3, special-interest or strongly coded rooms are not particularly widespread in the selected kindergartens. Based on the great changes within the kindergarten sector during the last decade, such as the view of children as competent, willing to learn and with a right to influence their own kindergarten day, as well as the expansion of preferably more flexible kindergartens, it is therefore somewhat surprising that the selected kindergartens have few special-interest rooms. Current attitudes towards children may result in a re-prioritisation of rooms where creating a special-interest room for learning may be at the expense of space to play. Seland's survey (2009) indicates that kindergarten children more frequently prefer to play in rooms that are vaguely coded, as such rooms invite more creative and independent play and activities. In vaguely coded rooms, children have greater opportunity to organise themselves and the playful whole, and Seland discovered a higher level of social activities and more imaginative play and role-play in this type of room (2009). In the selected kindergartens, on this basis, it might seem that there are widespread vaguely coded rooms, where there are good opportunities for children's self-initiated activities and play. At the same time, we see that specific rooms with clear indications as to the various subjects are not so prevalent in kindergartens, and in this way there may be a trend against establishing special-interest rooms in a limited selection of the institutions.

The head teachers were asked in their interviews whether the children had free access to all rooms in the kindergarten, and in over half (53%) of the selected kindergartens, the children had to ask staff if they wanted to access rooms beyond their own department. In a smaller proportion of kindergartens (39%), children were allowed access to all rooms in the kindergarten as long as the room was free or if a member of staff was available to accompany them. In the remaining kindergartens (8%), children were only allowed access to the rooms at certain times, or staff distributed children in the various rooms according to their age and their allocated group. The following two quotations from head teacher's interview may well illustrate how this regulation of rooms can reduce a child's opportunity to use toys and materials beyond the gadgets found in a particular room:

*“All rooms are only used during the period when all the adults are present. In the morning, there are fewer rooms or activities available, but this increases gradually. Children have to choose a room and remain there.”*

*“Yes, they are free to go where they want in the base stations, but they must have an adult with them in order to use the special-interest rooms. If a door is shut, they have to use other rooms. They have to write their name on a list for the most popular rooms.”*

One of the basic ideas behind the design and organisation of base organised kindergartens is to enable flexibility, where children have a greater range of activities available through better use of rooms (Buvik, Brandslet, & Bendiksen, 2005 p. 4). The evaluation of the implementation of the framework plan (Østrem et al., 2009), indicates that kindergarten staff would like to give children choices in relation to where they want to play. The survey shows that children’s opportunity to choose which room they want to use for play themselves, independent of staff and time, varies according to the organisational model of the kindergarten.

**Table 4:** Adult regulation of access to rooms for kindergartens with different organisation of the children’s groups (N=279 pedagogical leaders)

Are there rooms in the kindergarten that the children can only use if an adult is available to accompany them?	No	Yes	Total
Departmental	33.9 %	66.1 %	100 %
Age-homogenous	41.2 %	58.8 %	100 %
Non-departmental	57.9 %	42.1 %	100 %
Base organised	24.0 %	76.0 %	100 %

The overview in table 4 indicates that in 76% of base organised units, children are dependent on adults in order to use all the rooms in a kindergarten, whereas this is only the case in 42% of the non-departmental institutions. Children in non-departmental kindergartens apparently have greater liberty to use the rooms when they wish to access them. The size and furnishing of special-interest rooms may be a contributory factor to greater adult regulation of children’s access to rooms in base organised kindergartens. The greater the degree of special functions, the greater the possible necessity of having a member of staff present to ensure that the room is used correctly and safely. In this way, it may be ascertained that a child’s access to rooms is dependent on resources (enough staff present) and the pedagogue’s power to decide who is allowed to play where. As a result of their position in the kindergarten, pedagogues have significant and necessary information which affects a child’s opportunity to move around the kindergarten. The pedagogues have the power to distribute resources across the kindergarten, and to decide which children are allowed to play in which rooms (Palludan, 2005).

#### *Materials for Play*

Pedagogical leaders in 127 kindergartens were asked which toys and materials were permanently available for children in their own department without them having to ask staff for assistance. There were 27 alternatives, as well as an open answer where elements not covered by the 27 closed alternatives could be written. As table 5 indicates, over 75% of the departments had play materials such as small cars, books, toy animals, dolls with dolls’ clothes and a kitchen corner, available for the children without the children having to ask the staff for permission. A smaller number (>25 %) of the departments gave children access to play materials such as musical instruments, clay, sensory

installations, easels, computers and painting equipment. In addition to the alternatives given, several respondents named other elements which could be constantly accessed such as train sets (12 people), recycled material for use in play (9 people) and installations such as climbing walls (6 people), balls (7 people) slides (6 people) which encourage physical play and activities.

**Table 5:** Overview of choice of toys and materials constantly accessible for children in the departments (N= 286 pedagogical leaders)

Play material available > 25 % of departments		Play material in 51 % to 75 % of departments	
Musical Instruments	9 %	Large Cars	55 %
Clay	9 %	Dressing Up Clothes	58 %
Sensory Room	10 %	Big Mattresses/Floor Cushions	59 %
Easels	10 %	Jigsaw Puzzles	63 %
Computers	17 %	Duplo	72 %
Painting Equipment	18 %		

Play material in 26 % to 50 % of departments		Play material available < 76 % of departments	
Kapla Blocks	33 %	Kitchen Corner	75 %
CD-player	35 %	Dolls with Clothes	78 %
Toy Farm	38 %	Toy Animals	79 %
Cutting (scissors/paper)	39 %	Books	86 %
Plasticine	42 %	Small Cars	87 %
Toy beads	45 %		
Lego	48 %		
Games	49 %		

None of the 27 suggested play alternatives were available in every institution, and it is somewhat surprising that play material that especially encourages relational play (dolls, kitchen corner, toy animals, Lego, dressing up clothes, toy cars etc.) were only found in 50-75% of the departments. According to Hultman (2011), environments with little homogeneous material will appear less attractive for children’s play, and the somewhat limited choice of play material in the survey may be a factor which in some kindergartens restricts a child’s opportunity to play and express themselves. Regarding the importance of environments with abundant access to play materials, Kragelund and Otto (2005) emphasises that the material invites action and has an effect on us, and institutions with an ample selection of play materials will be able to give children several meeting points where the material will feed their idea generation as well as inspiring play and creating meaning where the child meets the cultural context (Nordin-Hultman, 2004; Nordtømme, 2012).

Pedagogical leaders were asked about whether a range of art materials was freely available for a significant part of the day, and to what extent the art materials were varied. As table 6 indicates, a relatively wide range of responses is revealed both in access to art materials in general and in the child’s opportunity to use varied art material.

**Table 6:** Access and Variety of Art Materials (N= 280/281 pedagogical leaders)

	Completely Agree	Agree Slightly	Neither/ Nor	Disagree Slightly	Completely Disagree
Art materials are freely available for a significant part of the day (N=280) *	27 %	31 %	11 %	17 %	14 %
Range of art materials is varied (N=281) *	33 %	34 %	14 %	16 %	3 %

\* The analyses showed no significant difference between the various organisational forms and variety in the range of art materials

The answers indicate that prioritisation varies in the range and accessibility of open materials in the 280/281 departments. If a child is to have the opportunity to combine and utilise different types of material as objects of play, according to Hangaard Rasmussen (2002), these should be materials for drawing, construction and building or materials for plastic and technical construction which is diverse and constantly available to the children. In this selection, it is especially the accessibility of the materials that seems to be relatively limited in 31% of departments. A child’s opportunity to utilise varied materials and to be able to use toys and materials across rooms and groupings will be significant in the establishment of play. Lenz Taguchi (2010) and Hultman (2011) assign an agentship to the material objects as actively participatory, and understanding this, the children develop intra-actively in dialogue with the surroundings of the kindergarten. It is how the child utilises various objects which determine whether they can function as toys, and access to open materials (such as art materials) will be able to add a more creative dimension to play (Trageton, 2009). Abundant access to open materials is established in just over half the departments, and when nearly 70% or the pedagogical leaders express that they have a varied selection of art materials it will be possible, as Trageton (2009) states, to understand these to be kindergartens with ample opportunities for relational play.

The analyses showed no significant difference between the various organisational forms and variety in the range of art materials, but the access to art materials varies slightly in relation to the organisation of the kindergarten. The base organised kindergartens stand out somewhat negatively as 38% of the pedagogical leaders expressed that they slightly or completely disagreed that art materials were freely accessible for a significant proportion of the day. The base organised kindergartens are followed by the departmental kindergartens at 31%, the non-departmental kindergartens at 25% and the age-homogenous kindergartens with 24% of pedagogical leaders expressing that they slightly or completely disagreed with the statement that art materials were accessible for a significant part of the day.

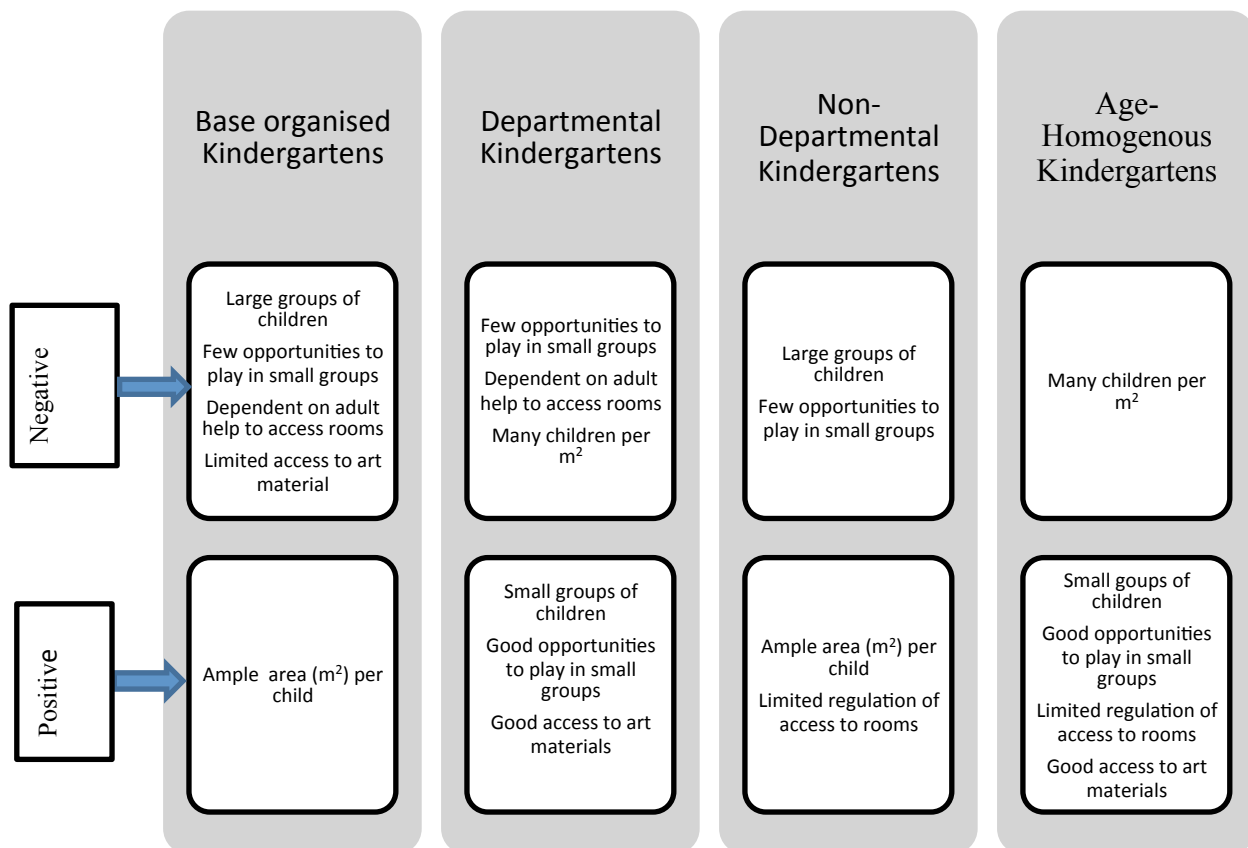
*Organizational model and children's opportunities for play*

The survey indicates that the kindergarten’s choice of organisational model gives varying conditions for a child’s play. The results demonstrate how play is given a variety of conditions in the selected kindergartens as a result of staff prioritisation and the organisational model of the kindergarten. The available area per child is significantly greater in the non-departmental and base-stations kindergartens, whilst as the IRIS- and NOVA- reports (Gulbrandsen & Eliassen, 2013; Vassenden et al., 2011) indicate, the number of children per unit is significantly greater in the base organised kindergartens. It may also seem that in both the base organised and the departmental kindergartens, as well as in the non-departmental kindergartens, children are dependent on staff to gain access to several of the rooms in the kindergarten. Locked and closed off rooms enable children to have fewer opportunities to choose materials for play and activities, and children may end up having to compete

with each other for the available opportunities (Becher & Evenstad, 2012). Hultman (2011) claims that some children will lose this battle for the most attractive toys, places and corners in the kindergarten and the children are positioned as less independent.

The results indicate no clear patterns in the relationship between the kindergarten's organisational form and the conditions of play. There are conditions that restrict and those that promote children's play, but none of the organisational models stand out in a particularly positive or negative light. The base organised kindergartens nevertheless seem to have the greatest challenges in this survey, particularly in relation to the child's opportunity to have undisturbed play in smaller groups, the child's access to art materials and the number of children per unit, as well as the child's access to rooms without adult help. Figure 1 provides an overview of the various conditions that can restrict or promote a child's play linked to the various organisational models.

**Fig. 1:** Overview of conditions that can restrict and promote play in kindergartens with various organisational forms.



Investigating (analysing) conditions where kindergartens stand out positively from the others, those with age-homogenous groupings and those with departments have fewer children per institution, have good opportunities for play in small groups as well as good access to art materials. Ample access to varied art materials provides good conditions for play by stimulating more creative activity and play (Trageton, 1995). The base organised kindergartens and the non-departmental kindergartens stand out in that they have ample physical space per child despite catering for large groups of children. Thus, conditions for play can be assumed to be good as a consequence of sufficient physical space which is necessary to construct arenas for play and to establish zones for limited play (Thorbergsen, 2012a).

## Summary and conclusion

Kindergarten is a significant arena for children's play where staff has great opportunities to initiate, protect and develop play (Melaas, 2013) through how staff organise and structure the groups of children, play materials and space create conditions for children's play.

The survey indicates that the kindergarten choice of organizational model offers different opportunities for play. It be pointed out some central elements such as the facilitation of play in small groups, children's access to material and to the various rooms that may be appropriate to reflect on when the kindergarten will facilitate for play are emphasis which should be relevant for reflection when kindergartens are preparing play. What children can watch in the rooms is of importance for the development of play and children's play needs time and space (Nordin-Hultman, 2004). For the field of practice this means that the kindergarten classification into groups, access to play materials and children's access to various rooms will be factors that should be included as pedagogical tools in the effort to facilitate great play environments.

The study points to the necessity for kindergarten teachers have knowledge about the connection between kindergarten physical environment, and education. Kindergarten teachers must be able to know how different types of organizations and space can provide optimal conditions for the play. The room structures and the kindergarten design affects social relationships (de Jong, 2010), and this study shows how the various structures and types of organizations can promote or inhibit children's play facilities in the kindergarten. This study has only considered some of the structural elements of the respondents and further studies will be necessary to gain better insight into the links between the structural conditions of play and the organisational form of kindergartens.

Kindergartens newly created position as an arena for learning where children are positioned as social actors, competent, learning and the right to participation (Seland, 2012) has provided the kindergarten content greater attention. It would be appropriate to further research that investigates how the structural conditions of plays are given priority when learning discourse is prominent.

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