



Gendered Environment Factors Influencing Children's Perception of Gender in Kindergarten

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Abstract. Basing its discussion upon the social construction theory, this paper aims to give a review of the studies done regarding the factors that influence children's perceptions of gender in kindergarten environment, both physical and human-related. As studies have shown, the physical organization of kindergarten spaces, children's toys and play practices, together with the gender awareness of kindergarten teachers can all have an influence on children's identification of their own gender and their incorporation of conventional gender role models. This paper also gives some recommendations based on the influencing factors identified in the review.

Keywords: Gender Stereotypes · Kindergarten Children · Kindergarten Environment · Teacher Awareness

1 Introduction

Gender is among one of the most important social categories that children recognize very early on, and studies have shown that they sometimes rely more heavily upon the category of gender over other social categories when understanding and interacting with the world [1–3]. According to the studies of gender developmental scientists, children reaching age 3 or 4, can start to develop stereotypical associations for both sexes, first with adult possessions, and then with more abstract traits, for example, girls are related with softness and boys with roughness [1, 4–6]. And as children progress in to their preschool or kindergarten years (year 3–7, terms differ according to different countries) is an important formative period of time in a person's life [7, 8], and has great influence on the child's future. Various studies have shown that children as young as 6 have knowledge of the status difference between man and woman (for example males are more likely to hold higher-status jobs) [4]; and a study by Bigler et al. showed that 87% children between 5 and 10 years old that there have not been a woman president in the history of America. Also, as several studies have shown, children's understanding of gender shaped in their pre-puberty years is an important factor contributing to their expressions of gender in adolescence [7, 9]. Hence, these perceptions of gender clouded by stereotypes can have shaping influences over the life and career outlooks of children. [10]. Gonzalez et al. have done a good review on this topic [8].

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This review paper intends to examine, through a review of literature, the way in which the kindergarten environment, whether it is the physical environmental setting, children's play dynamics, or their teachers' gender awareness, contribute to children's understandings of gender.

1.1 Definition of Kindergarten Children

This paper chooses kindergarten or preschool children as the target group of interest. And the definition of kindergarten children needs some clarification, since preschool education is structured differently in different countries. According to Riggall and Sharp, preschool education denotes the time period covering their infancy and their first contact with formal schooling, that is, entry into care institutions [11]. However, as the objective of this paper is concerned with teaching methods, the main target group of this review paper is children that have come into some form of formal schooling, and in this paper, they are categorized as kindergarten children. Their age may vary from 1 year old to 5 or 6 years of age. In Norway, since 2009, all children over 1 year of age can have the formal right to have kindergarten education [12]. However, in countries such as the United States, the UK, and some other European countries, the official entrance age is 5 or 6 [13, 14].

However, a certain number of children in these countries choose to attend private or public preschools prior to their kindergarten studies. And in East-Asian countries such as Japan and China, children typically attend kindergarten at the age of 3 [15, 16]. Studies have shown that children's sense of "self" and understanding of the concept of "gender" emerge as early as 18 months of age [3]. As for the concept of gender stereotype, children can have an emerging idea of gender stereotype by 2 years old [17]. This can develop into a basic, clearer sense of stereotypes as they get to 3 years of age [18]. Hence, considering the cognitive development, kindergarten children in this review paper denotes those children who are 3–5 years of age.

2 Environmental Settings

As children go from their parents' care into formal schooling, they also go from a more familiar, private environment to play and study in a more public and socially diverse environment, that is, the kindergarten. And studies have suggested that just around age 3–6, the age at which many children are sent into kindergarten, children enter a crucial stage where they acquire gender stereotypes and gender-related associations [7]. Also, as pointed out by Martin and Ruble in their comprehensive review regarding gender development, children's perceptions of gender develop from associating sex differences with concrete objects (e.g., dress for female and tie for male) to toys and play activities (e.g., barbie for girls and cars for boys) and finally arriving at more abstract understandings of gender, such as man is seen as harsh and woman is considered soft [3]. Thus, as children's gender perceptions start with physical objects, this review first looks at how the indoor physical environments of kindergartens affect and even exert a shaping power on children's understandings of gender.

2.1 Indoor Physical Environment

In recent years, more and more researchers have focused their studies on the physical environment of educational institutions, and the basis of their discussion being a cultural-social construction perspective. Just as the famous Foucauldian concept of the panoptic society, where individuals are disciplined and eventually self-regulated through the effect of a panoptic building, the physical environment can significantly shape the creation and distribution of knowledge. Social norms and stereotypes can be integrated into the structure and design of physical spaces. According to the social construction theory brought forth by Berger and Luckman in 1966 [19]. The areas of social institutions often have designated purposes, and thus can motivate people inside to regulate their actions accordingly. Furthermore, these specified areas can often consolidate associations between certain characteristics and certain groups of people. And individuals, through interacting and moving in the bounds of these spaces, in turn incorporate the accepted social patterns and common ideologies [20]. In terms of gender stereotypes, it is also observed that gender expectations can be reinforced through the construction of physical environment. In light of this theory framework, it is important to examine how children in kindergarten are also under the influence of the structural layout and the codes embedded in the designs of these indoor spaces.

First thing to consider is the division of spaces in kindergarten. According to the study of Martinsen regarding the spatial structures of Norwegian kindergartens [21]. The organization of kindergarten spaces can be divided into four models: (1) departmentalized organization, which means that children are always divided into groups which occupies independent spaces with full functionality. These departments often share the common room and also the kitchen. (2) Age-homogeneous organization, in which children are divided according to their age groups, and the room division is otherwise similar to departmentalized organization. (3) base organization, in which different groups of children occupies their own "bases," whereas they share various function rooms, such as the toilets, library, and other play facilities. (4) non-departmental organization, in which children from all age groups share the whole facility, and all functional areas are for the use of all children. These four different ways of organizing a kindergarten space have very different effects on how children interact with each other, and thus affect their ways of understanding the meaning of gender both regarding themselves and others. According to the IRIS-report, in 2012, 79% of the kindergartens in Norway were still traditional departmentally organized kindergarten [22]. Børve and Børve point out in their 2017 study that these kindergartens tend to put their children into small groups, and even the common room is divided by partition walls into small spaces devoted to different purposes [12]. In their interview, kindergarten employees have named these spaces the doll center, the paint center, and the car center etc. These areas are "strongly coded," and they carry very strong messages of the expected behaviors and the intended purpose of the areas [12].

These features of the traditional departmentalized indoor spaces have significant influences on children's understanding of gender, as they are both actively making gendered associations and unintentionally incorporating gender norms and stereotypes through playing and interacting with each other or with their teachers. These coded areas would carry different identity cues that validate certain gender expressions while

excluding others. For example, the “doll corner” often has warm color such as pink as their theme color, and it would be decorated with flowers or dolls that accentuate the femininity of the space. And based on teachers’ testimony, the “car zone” in the kindergarten tend to be taking up more space, and less orderly, since boys are thought to be more active in their play practice, thus taking up more space. Also, these areas for car toys or Lego building usually are allowed for the children to use their voice, according to the assumption that boys tend to run around and shout when they are excited.

This would create a sense of “ambient belonging” for the girls, that is, made femininity an innate self-identified characteristic for them. The study done by Cheryan et al. on the design of university virtual classrooms found that the willingness to enroll in the computer science course would decrease if in the virtual classroom is decorated with stereotypically computer science related objects such as Star Trek posters; whereas their level of interest rise to the level of men’s when the virtual classroom was re-rendered with objects that are not so closely associated with computer science such as vase or water bottles [23]. If we look at the strongly coded kindergarten spaces in light of this study, we can see that it is highly likely that children could develop a sense of “ambient belonging” with the gender identity and the activity that is deemed appropriate for them. This identification will in turn encourage them to choose the stereotypically “appropriate” environment; and this choice, under some circumstances such as which course to enroll, or which sport to participate, can have bearings on the gender disparity or even inequality in not only education but other fields in social life.

2.2 Color-Coding

As an important socio-cultural factor, color can have impact on the perception of gender which causes the gender stereotyping. However, kindergarten teachers often show a tendency to clearly divide boys and girls when making classroom arrangements, having different requirements for them, interact with them according to their gender and have gender-based assumptions about their characteristics [24]. Consequently, boys and girls make are not free and personalized as the individual or society would like to think [24]. Remarkably, a notably example of gender-related cue is color.

There is a myriad of studies to mention color is the one of most important factors to influence children’s perception of gender [25]. Color is the strongest element in our education settings to promote the developing of children [26]. Especially in kindergarten. According to Karniol, color can have a crucial impact on children’s perception of gender [27]. Some children from a young age can make associations between clothing color and gender characteristics, even before they understand the biological basis behind gender differentiation. As children are highly dependent upon their family and education settings, young children’s lives are closely intertwined with traditional gender-color associations. This leads to colors carrying social cues about gender, such as pink signifying girls and blue as a symbol for boys.

Teachers also have distinct color associations for male and female children, and children are exposed to gender-specific colors from birth in many countries. For example, in Canada and the United States, girls’ clothing, toys, and rooms are predominantly pink, while boys’ clothing, toys, and rooms are predominantly blue [25, 26]. At the same time, teachers differentiated between boys’ and girls’ lockers by placing figures

of flower, which is associated with femininity, on girls' lockers and figures of bug, which symbolizes a stereotypically male interest in natural sciences, on boys' lockers. Additionally, they used a colored ticket to manage children's 'free choice time' system, with pink tickets for girls and blue tickets for boys. There are restrictions to decide which color is suitable for boys and which one is appropriate for girls during the teaching practices.

In conclusion, color is one of the most important factors to influence the gender perception of children. There is less attention from teachers to recognize the importance of gender stereotypes. Teachers usually assign stereotypical color schemes for boys and girls in the process of children's learning. Consequently, color would affect children's incorporation gender stereotype and if we want a world with fewer stereotypes in general, we should stop imposing colors on children. If teachers wanted to disrupt traditional gender stereotypes, it is necessary to provide children with a range of alternatives which they can demonstrate through their own practices and behaviors as well as through the resources and learning experiences they provide.

3 Children's Play Practices

3.1 *Children's Play Choices*

Children's use of the physical space is as important as the design of the room, and play is arguably the most important way of using the place by children. Play activity in kindergarten is significant in that it involves the most frequent and complex interpersonal communications. In light of the discussion above regarding the physical arrangements in kindergarten, we can see that in many traditionally departmental organized kindergartens, children are playing and interacting with each other in a relatively limited space. And since the spaces are coded and defined by its purpose, children's play practices in it are often homogeneous and display similar behavioral preferences. In the interviews conducted by Børve and Børve, boys and girls in kindergarten showed obvious gender-related divisions in their play choices [12]. For example, boys are more likely to play in "car corners" and "Lego centers," where they engage in "more vociferous, more physical" activities, while girls are said to be "little princesses," sitting in "small corners" and "play[ing] gently." And as these stereotype-conforming behaviors are being confirmed by teachers and positively singled out as patterns suitable for gender expressions, children are more likely to regulate their play practices accordingly and choose ones that are more "appropriate" to their own gender identities. In such cases, the availability of spaces and chances to play does not necessarily entail the equal opportunity of play. To switch to a play zone that is distinctly coded for the opposite gender and try to adopt a play practice that would be considered outside your own gender norm require quite an amount of courage and the sense of misplacement and unbelonging may discourage children from choosing the play activities that they are genuinely curious about or enjoy.

Indeed, play choices that cross the gender lines do appear among children in kindergartens. Several field studies on children's play practices in kindergarten mentioned behaviors that are non-conforming to the received gender conventions [8, 12]. However, although many kindergarten teachers view this phenomenon positively and do not discourage this kind of behavior in any way, when they are describing such behaviors,

they still tend to employ the dichotomized “masculine”/ “feminine” category. For example, when there are predominantly boys in the spaces, and the girls who are in this area also have their activities defined as “masculine,” and portrayed as participating in stereotypically “boy’s practice” [12]. This is nonetheless a way of instilling conventional gender norms in children through their play practices, as children are bound to notice the attitudes and discourse used by teachers when referring to their play behavior.

3.2 Children’s Toy Choices

Children’s choice of toys is another important factor that can influence children’s development of gender identities. Gender specific preferences in toy choices have been observed quite early in a child’s development—children who get to 18 months of age can have the tendency of choosing the toys traditionally deemed appropriate to their gender. This is often interpreted as the evidence for natural biological differences between genders. But that may not be the case. This phenomenon could be caused by our own biases regarding the toys babies choose. They could be simply trying to choose the toys that elicit approval from their parents. According to studies, the most significant gender differences in toy choices happen manifest in kindergarten children who have underwent a process of social interaction and gender identification.

Studies have shown that kindergarten children would not prefer a toy if they believe that it is labeled as appropriate for the opposite gender, and they will even police over other children’s choices, as they expect the children in the same gender group to have similar preferences. This is clearly an indication that their choices are based on a gender specific reasoning. It is point out in the review done by Galambos et al. that children’s rigidity in their understanding of gender reach the highest point when they are 3–5 years old. And it is this rigid understanding of gender identity that let the children become very strict when it comes to policing others into obeying the same gender norms as they deem fit—they would think that only the children who like similar toys as them belong to the same gender group as theirs. It is clear that gender labels of toys could exert great influence upon children and may discourage them from trying out new, gender neutral or non-gender conforming toys that they may otherwise choose. This gender-based thinking pattern of children, reinforced by the failure of kindergarten teachers to intervene when the aforementioned peer-policing behavior happens, may significantly limit the possibility of children to try out new toys and their self-explorations.

When children play with these gender-coded toys, they are in fact being encouraged to develop different habits, understandings and preferences. These patterns formed in their youth could shape their future choices of careers, interests, and gender expressions. For example, certain princess dolls may lead girls to attach more importance on appearances, accessories and outfits. And this is how Disney princess toys can have the power to shape young girl’s understandings of their femininity.

4 Influences of Kindergarten Teachers

4.1 Teacher’s Gender Awareness and Implicit Gender Stereotypes

Teachers and their interactions with children are also a key element in constituting the gendered environment that children are immersed in. Studies abound in determining the

role kindergarten teacher plays in the maintaining of traditional gender stereotypes [9, 24]. And the majority of the studies found that teachers lack awareness of their own implicit stereotypical views of gender. Even in Norwegian kindergartens, where there the government has already issued policies promoting gender equality in kindergartens since 1978, there are studies that pointed out the roles teachers play in upholding traditional gender role models. As according to the social construction theory, teachers can pass on gender stereotypes through the language they use when conversing with children. Through their speeches, they impart their own attitudes and implicitly held gender stereotypes to their students. Discourse analysis of different kindergarten employees show that girls are often complimented for their outfit, appearances and hairstyles; and they are always encouraged to be in the position of a caretaker, and praised for their ability of empathy. At the same time, boys are applauded for their physical strength, and they generally get more attention from the teachers as they are considered more active and thus get more spaces to express themselves. Also, in a study conducted in a Norwegian kindergarten, it is observed that as a group of boys and one girl is engaged in boisterous plays and a female teacher only told the girl off and only the girl was removed from the game [24]. This incident is a very clear illustration of how a teacher who upholds traditional gender stereotypes can significantly influence and even alter a child's understanding of gender identities and conventions.

Also, as teachers are the main designer and organizers the kindergarten environment, they may either intentionally or unintentionally slip some gender-specific cues into their decorations of the physical spaces in kindergartens. In the study of Børve and Børve, several male teachers mentioned their concerns over their lack of participation in the decision process of arranging and decorating the spaces, and they are afraid that "too much femininity" could have taken hold of the kindergarten. They told the interviewer that there are too many "doll corners," and they wouldn't mind seeing more gyms and open places for more intense physical activities in the kindergarten [12]. From this interview, we can see that if teachers of a single gender are taking charge of the renovations, there could be a possibility of imbalance between playing spaces of different gender characteristics. And this can in turn result in the lack of playing spaces for children with certain inclinations.

5 Conclusion

In light of the review of studies made above, we have seen the influence of various factors on kindergarten children's perception of gender. First and foremost is the physical environment of kindergartens, including its spatial organization and color codes, for it serve as a space that disciplines and regulates. By identifying with the purpose-specific departmentalized spaces and gender cues embedded in the decorations and color codes, children internalize the traditional gender norms. Then we considered children's play practices, including their choices of play activities, and the influence of the toys they play. Through various studies, it has been made clear that children's play choices are closely linked with their identification with appropriate gender groups. And the toys, through its design, can serve to consolidate certain gender stereotypes such as girls need to be beautiful and caring as the dolls or boys need to be strong as the action figures. Another

factor that has significant influence upon children's perception of gender is kindergarten teachers. As adults already well adjusted to the demands of contemporary society, these teachers are not free of gender stereotypes. They can impart their understandings of gender conventions to the children through their appraisal of certain characteristics and their disapproval of other behaviors that defy gender norms.

Considering these contributing factors and the nature of their impact on children's perceptions of gender, this paper proposes to offer some recommendations regarding how to create an environment safe from gender stereotypes where children can freely develop their potentials to the fullest. First, it will be beneficial for future kindergartens to adopt the non-departmental design, where children can easily find their own place to play without having to overcome the burden of being the odd one out in an otherwise gender-homogeneous group. Secondly, it is important that kindergartens start to create less clearly coded environments. The governments of several Northern European countries, such as Norway and Sweden, have already issued policies adopting this measure. This can prevent the children from adopting unnecessary implications of gender norms from the color codes. Last but not least, the teachers in kindergarten need to be more aware of their positions of authority, and reflect upon their intuitive appraisals and disapprovals of children, especially when it involves characteristics traditionally intertwined with gender stereotypes. And they should be more flexible as to when to let children have their autonomy and not to interrupt their play even if it is atypical of gender norm. However, they should also be more attentive and recognize the need for them to intervene, when kindergarten children, with their rigid understandings of gender differences, display policing behavior over other children. Hopefully these measures could help reinvent the environment of kindergartens, and increase the chance for every child to enjoy equal opportunities and resources to grow into their unique selves.

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