

A comparative study of classroom furniture in urban and rural pre-schools

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■ **ABSTRACT** : Furniture is an important component in any classroom which helps in providing a comfortable and functional classroom environment for the children. The functional classroom furniture is a result of its physical design in relationship to the physical structure and biomechanics of human body. Furniture can affect the physical development of children as well as their academic performance. Hence it is necessary that school furniture should be fit to the requirement of school children. To treat the issue of furniture design, the objective of this study was to explore the differences in facilities and furniture design of both urban and rural preschools. For the fulfillment of the objective, five urban preschools and five rural preschools were selected randomly from the selected urban and rural areas of Lucknow district of Uttar Pradesh. The evaluation of the facilities and classroom furniture design with their comfortability was made by the self-made questionnaire schedule. The results of the present study revealed that the rural preschools differed in facilities compared to urban preschools in context of their total school area, classroom area, classroom for per-children, enrolment of preschoolers, number of teachers and also profile of the furniture and their comfortability for the user.

■ **KEY WORDS** : Classroom furniture, Comfort feature, Urban and rural pre-schools

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Furniture is one of the important physical facilities provided in classrooms where the children spend most of their time working with different learning activities (Khanam, *et al.*, 2006). It is generally accepted that classroom furniture need to be designed to allow the children to move in their seats, as it is unnatural to keep still for long periods and localized muscle fatigue and pain can result from postural immobilization. It is required for a pre-school that the furniture should be manufactured to accommodate the requirement of the children, because furniture design may affect the performance of the pre-schoolers and educational qualities too.

Educational qualities are strongly influenced by areas where schools are located and the facilities that are provided to the children in their schools. Recent studies have presented a conflicting picture of rural verses urban pre-school qualities. One prominent study concludes, students in rural pre-school in comparison to urban pre-schools perform less because of affected learning environment and classroom facilities. Many

studies emphasize that the furniture in rural pre-schools is not strong and made using the low cost material without proper finishing, manufactured by the local carpenters. It is not necessary that the furniture is according to anthropometric measurements of children. In rural pre-schools it is often seen that the same size of furniture are used in several classes either in pre-classes or in secondary. In urban pre-schools, majority of pre-school furniture are made by fine wood and by experienced workers. They allocate various type of furniture for different classes. For pre-classes they use small chairs and tables with foot rest and carrying facilities of bags and bottles. On one hand urban pre-schools have sufficient space, between chair and table in the classroom to move, whereas on the other hand the clearance space in room and between table and chair are not available in majority of rural pre-schools. Classroom furniture bought from manufactures is typically not designed to accommodate the dimensions of the individual user including urban pre-schools as well; this problem is quite widespread in many of the rural pre-schools. The reason is

that such type of furniture is less costly to manufacture and easier to purchase at the lower price. The urban and rural pre-schools vary in terms of their facilities, type of education and furniture too because majority of urban pre-schools use good furniture that reduces organ crowding and strain on soft bones and muscles. It can be seen that if the seat surface is too high the underside of the thighs becomes compressed causing discomfort and restriction in blood circulation. When the seat surface is too deep, the front edge of the seat will press into the area just behind the knee cutting off circulation; the person in the seat will slide forward but will lose proper backrest and support for the lower thighs.

Thus, good type of furniture would help to reduce, eventually eliminate stress during the learning period in pre-schoolers because incorrect sitting posture put them on extreme physiological strain on muscles. So, it is the duty of the educational institutions that they should treat the selection of right kind of furniture as the social responsibility towards the student community.

■ RESEARCH METHODS

The present study aimed at studying and comparing various facilities with special emphasis towards furniture and its comfort. For conducting the present study, Lucknow district of Uttar Pradesh was selected purposively. Multistage random sampling technique was used to select the sample for the present study. The list of zones and wards were obtained from the Lucknow Municipal Corporation. Out of the existing six zones, the fifth zone was selected randomly by using random sampling technique. From the fifth zone, two wards were selected namely, Chitragnagar ward and Sarojani Nagar ward. From the selected areas, the lists of schools were obtained and from the existing number of schools. Five pre-schools each from urban and rural areas were selected randomly by using random sampling technique.

■ RESEARCH FINDINGS AND DISCUSSION

The findings obtained from the present study have been discussed under the following sub-heads:

Demographic profile of pre-schools:

The demographic profile of the pre-schools makes a conflict picture of urban and rural pre-schools in respect to their facilities and furniture availability for pre-schoolers in pre-classes. A comparative analysis of both urban and rural pre-schools is categorized into general profile of the pre-schools (Table 1) and availability of furniture (Table 2).

General profile of the pre-schools:

Area of the pre-schools:

It can be noted from Table 1 that cent per cent of the urban pre-schools have an area of 1600-1900 sq ft. with 18'x

Table 1: General profile of the pre-schools

Parameter	Rural pre-school	Urban pre-school
Total school area		
1200sq.ft	2(40)	-
1200-1500sq.ft	1(20)	-
1600-1900sq.ft	2(40)	5(100)
Classroom area		4(80)
18'x16'	-	1(20)
20'x15'	2(40)	
30'x18'	3(60)	
No. of classrooms		
<2	2(40)	-
2-4	3(60)	-
4-6	-	5(100)
Nil	-	-
No of children	2(40)	-
<50-100	3(60)	-
100-150	-	4(80)
150-200	-	1(20)
200-250		
No. of teachers (per 20 children)		
1	5(100)	-
2		5(100)
Storage area		
Yes	4(80)	5(100)
No	1(20)	-

16' classroom area in 80 per cent of the pre-schools, only 40 per cent of rural pre-school have an area of 1600-1900 sq ft. with 30'x18' in 60 per cent of pre-schools.

Number of classrooms:

From Table 1 it can be seen that 40 per cent of rural pre-schools run in only a single room and 60 per cent of rural pre-schools have 2-4 rooms for the pre-classes. In urban area cent per cent of pre-school have 4 to 6 room to run the pre-classes.

Enrolment of children:

Children enrolment in 80 per cent of urban pre-schools was 50-100 and 20 per cent of pre-schools have an enrolment of 100-150 children. In rural pre-schools, enrolment of children in 40 per cent of pre-schools was 150-200 and 60 per cent of pre-schools have 200-250 children.

Availability of teacher:

It can be seen from Table 1 that in cent per cent of rural pre-schools, only a single teacher used to take pre-classes per 20 children but in cent per cent of urban pre-school, 2 teachers used to take pre-classes per 20 children.

Table 2 : Availability of furniture for preschoolers		
Parameters	Rural pre-school	Urban pre-school
Furniture (children)		
Study table / desk		
Quantity		
40-30	1(20)	2(40)
30-20	-	-
20-10	3(60)	3(60)
Nil	1(20)	-
Material used		
Plastic	-	1(20)
Wooden	4(80)	4(80)
Study chair / bench		
Quantity		
40-30	2(40)	2(40)
30-20	-	-
20-10	2(40)	3(60)
Nil	1(20)	-
Material used		
Plastic	-	1(20)
Wooden	4(80)	4(80)
Toy cabinet (availability)		
Yes	-	5(100)
No	5(100)	-
Shoe cabinet (availability)		
Yes	-	4(80)
No	5(100)	1(20)

Storage area:

It can be observed from Table 1 that cent per cent of urban pre-schools have facility of store room to store the books, register, copies, toys, games and other things which can be seen in only 80 per cent of rural pre-schools.

Availability of furniture:

The availability of furniture for children in both of the schools were also studied and compared. It can be observed from the data of Table 2 that approximately only 20 per cent of pre-schools functioning in rural areas of Lucknow district did not provide furniture for students. Equal percentage (60 %) of rural and urban pre-schools has study table in the range of 10-20. Equal percentage (80 %) of rural and urban pre-schools had wooden furniture and 20 per cent plastic furniture for the pre- classes that were used for pre-children. The present study indicated that cent per cent of urban pre-schools had toy cabinets but none of the rural pre-schools had toy cabinets for children. Majority (80 %) of urban pre-schools had shoe cabinets but none of the rural pre-schools have shoe cabinet for children.

The demographic profile of the pre-schools reveal that

rural pre-schools possess less facilities than the urban pre-schools because of the ignorance of the importance of the functional elements of the classroom facilities. The second reason may be in rural pre-schools that; rural pre-schools were focused only on the education of the children where urban pre-schools were focused on education of children with over all development. The development of a child is affected by the facilities and environment too. Thus, provision should be of prime importance of majority of facilities and classroom environment including comfortable furniture to the children. In rural pre-schools due to less teaching material and uncomfortable furniture design children face much type of physical and behavioural problems as they grown up (Dhara *et al.*, 2009).

Comfortability of furniture in pre-schools:

Pre-school age is a period when children learn to persist in a sitting posture for a long time, while performing various activities like reading, writing, drawing etc. Hence, it is necessary that the furniture should fit and be comfortable to the requirement of the children. The comfort of any furniture may be influenced by the task or activity that the user is engaged in at that time. In other words comfort will depend upon the interaction of seat characteristics (furniture dimensions, furniture angle, furniture profile, and upholstery), user’s characteristics (body dimensions, body aches and pain, circulation, state of mind) and task characteristics (duration, visual demands, mental demands and physical demands). In the present study, comfortability of furniture analyses in both urban and rural pre-schools based on the observation, the comfort features of the furniture used by the pre-schoolers were analyzed in terms of percentages (Fig. 1).

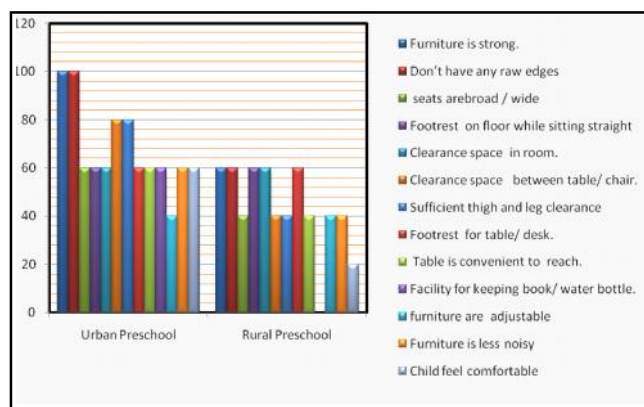


Fig. 1 : Comfortability of classroom furniture in urban and rural pre-schools

The present study (Fig. 1) reveals that cent per cent of the furniture existing in urban pre-schools were strong do not have any raw edges with broad and wide seats (60%) for complete body support and to facilitate the foot to rest on the floor while sitting straight. Among rural pre-schools 60 per



Fig. 2 : Children sitting in uncomfortable posture due to ill design furniture

cent of schools had furniture which is strong without any raw edges. Only 40 per cent of the rural schools furniture had wide and broad seats. Seats facilitate the footrest while sitting straight in 60 per cent of rural pre-schools. Equal percentage (60%) of urban and rural pre-schools has sufficient clearance space in the rooms. Majority (80%) of urban pre-schools had clearance space between table and chair and thigh and leg clearance. Only 40 per cent of the rural pre-schools furniture's were provided with sufficient thigh and leg clearance and equal percentage (60%) of the rural and urban pre-schools facilitated footrest in table/ desk. In urban pre-schools (60 %) and in rural pre-schools (40 %), tables were convenient to reach. Facility to keep books and water bottles was provided in 60 per cent of urban pre-schools, where as none of the rural pre-schools furniture had other facilities. The distance of chair and table was adjustable to user's need in 40 per cent of rural and urban pre-schools. It can also be noted that 60 per cent of the furniture existing in urban pre-schools were found to be less noisy in comparison to the rural pre-schools. The children comfortability in using furniture was more in urban pre-schools (60%) compared to the rural pre-schools (20%).

The comfort features of the furniture in rural and urban pre-school showed that in cent per cent of urban pre-school, furnitures were strong and don't have any raw edges because the furniture were made by the experienced carpenter. In rural pre-school, the furnitures were designed by local carpenters without due consideration of body dimensions and requirements of the school children, which may be due to their ignorance and lack of awareness, regarding adverse

effects due to of bad effect of ill designed furniture on children's behaviour, and health.

From the observations made on comfortability of classroom furniture in pre-schools, the guidelines to improve the comfort feature of furniture were evolved: furniture should be strong and durable, seat should be broad and wide for complete body support, seat should facilitate the foot to rest on the floor while sitting straight, lower back pain support should be provided to prevent back ache, thighs and legs should have free moving space, footrest should be provided for table and desk, table should be at convenient to reach and wide, provision for keeping books and water bottles, provision for rubber casing/ bush to prevent noise. Pre-school age is a tender age and the deformities which occur during this age will have long term effects. The comfort and safety of the children should be of prime importance while designing or purchasing furniture (Adewole *et al.*, 2010).

Conclusion:

This study was able to establish a picture of rural v/s urban pre-school. The study reveals the differences existing among rural pre-schools and urban pre-schools because of ignorance of classroom facilities. The information emerged out of the study revealed that the type of furniture provided in pre-schools were not comfortable to users need in many of pre-schools. It is essential to make classroom furniture user friendly, designing each component of furniture to take the body dimensions of user carefully. Government has to interfere and make strict policies regarding the type of furniture to be used in pre-school. The differences in urban and rural pre-schools also have to be minimized as a child, anywhere is a child- a tender bundle of softness in need of protection.

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