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Development of skills at the preoperational stage; A comparative study on Cognitive development of Urban and rural children

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Abstract

The main aim of this study was to compare urban and rural school children on cognitive development at the preoperational stage. The main question for getting the answer was "What was the level of difference among rural and urban school children on language development, egocentrism, understanding of the environment, locus of control, and block building". Ten teachers teaching class prep to three in rural schools and ten teachers from urban schools and 25 students from each area were conveniently selected for data collection. Interviews and observations were used to collect data regarding cognitive development at the Piagetian preoperational stage. It was found that urban students were better at language development compared to rural school children. Rural school students were more egocentric compared to urban school students, rural school children were unaware of urban environments, but urban students were aware of rural and urban environments. Urban students showed more conservation compared to rural school children and urban students were more skillful in making buildings. From this study, it was concluded that children in urban schools showed better cognitive development. It was recommended that more facilities and expert teachers may be provided to students of rural areas for better cognitive development.

Keywords: *Cognition, preoperational development, language development, egocentrism, understanding environment, locus of control, block-building skills.*

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Introduction

Cognitive development has been a very important concern since the work of Piaget. Cognitive skills developed at an early age of students' shape and align their futures with their interests. Further backward progression provides an essential base for forward progression. It means that whatever children learn at their earlier stages becomes the base for their future learning.

In Pakistan, preprimary and primary level students are those who study in primary schools with the age range of 4-10 years. The government of Pakistan is trying to formulate an ECE policy and implement it in true spirit. ECE programs must be given priority for improving all the abilities of early-age children including cognitive, emotional, moral, and social development.

Early childhood education is getting recognition worldwide, including in developed and developing countries for these reasons. That all the period of early childhood is crucial because whatsoever a child learns becomes part of his/her life and determines the path for the child's future. At the early stage of the children, many agencies are involved in bringing up the children. These agencies include parents, preschool teachers, and caregivers. Several skills are also developed during this very sensitive period. There is a need to explore what skills can be developed during this period of life.

Review of Literature

Piaget was an educationist who can be called a psychologist and biologist. He observed what abilities are likely to be developed during the early childhood period. Piaget proposed the theory of development which described that every student has to pass four stages of development in life. The first stage is the sensorimotor ranging from birth to two years, the second stage ranging from two (2) to seven (7) years called the preoperational stage, the third stage is the concrete operational stage ranging from seven (7) to twelve (12) years and fourth stage formal operational stage ranging from twelve (12) years to adulthood. Children show different abilities, skills, and knowledge as a function of experiences, and rates they encounter in their stages.

The preoperational stage is crucial because parents become conscious about the learning of children and admit their children to school when they approach four years. According to Cacioppo & Freberg (2013), the preoperational stage ranges from 2-7 years. During this stage symbolic

abilities begin to develop, where children use words and images as symbols for understanding the world around them (Bjorklund & Blasi, 2012). According to Santrock (2011), children can do colors different pictures or sketches. However, they cannot think logically (Ciccarelli & White, 2012).

According to Rashid (2010), parents did not play a role in the social skill development of their children. Teachers failed to inculcate social skills among children in Pakistan directly or indirectly. Rashid also asserted that schools also could not fulfill the responsibility of developing social skills among children and the same is with the community. Suggestions by Rashid (2012) that are helpful to improve children's social skills are about integrating social skills into the curriculum. Rashid further suggested that only the development of social skills is studied in the research conducted by him, so the development of social skills may be studied among other levels of students. There is a need for parents, communities, and schools to involve and play their role in the development of social skills among children.

It is proved by Mukhtar & Naz (2021) that social skills are indicators of cognitive skills. it was also concluded by Mukhtar & Naz (2021) stated that effective social skills are essential for normal behavioral and psychological adjustment for children and lack of social skills may lead to problematic interpersonal relations with others. Parents and teachers should pay attention to teaching children good and effective social skills so that they communicate with others confidently and comfortably.

Language Development at 4-5 years

At this stage, children seek admission to schools and can respond to different situations. They can judge the value of stories and can answer questions related to these stories. Their observational power is developed, and they can observe everything with understanding. They can also interpret the observed facts. Children can talk and convey their points of view quite easily. They can say short and sometimes long sentences easily. For example, if a child is asked to narrate the whole day's experience, he/she can easily narrate it in simple words. They can narrate a long story based on their imagination. They can pronounce sounds with more accuracy. The children can tell wonderful, exciting, artistic stories.

Egocentrism

The second stage of cognitive development for children between the ages of 2 and 7 is known as the preoperational stage. Students in the lowest

grade in elementary school are at the preoperational stage. They go through a considerable cognitive development process that involves, among other things, logical cognition, memory, spatial reasoning, conservation, and imaginative thinking. Toddlers and youngsters up to the age of seven are capable of thinking symbolically at this developmental stage. Their language grows more sophisticated. They also grow in memory and imagination, which enables them to distinguish between the past and the future and to play pretend. Many cognitive talents in infants manifest earlier than predicted by Piaget's hypothesis, according to studies (Bauer, Larkina, & Deocampo, 2011). Babies have natural knowledge of the outside world, and they learn more quickly than Piaget anticipated (Spelke & Newport, 1998).

Centration

This is the propensity to focus on just one or a small portion of an event's or an object's dimensions. This phrase was introduced by Jean Piaget to describe children's ability to pay close attention to just one important aspect of a problem, situation, object, etc., while ignoring other, equally important aspects. The second stage of cognitive development, known as the preoperational stage, is when centration typically emerges (encompassing the kids between ages two and seven). The concept of egocentrism, which Piaget first introduced in the same theory, is where the idea of centration first appeared. The concept underlying egocentrism is that children should always remain in the spotlight. They think that everything occurs both for and in favour of them. Children are likely resistant to admit the point of view which is different from their point of view.

Conservation

According to this concept, children of the preoperational stage are not able to differentiate objects containing the same mass in different shapes. He presented a toddler with two similar glasses with the same amount of liquid in a famous experiment. The boy watched closely as he took one of these cups and poured the contents into a higher, thinner glass. Then he asked the youngster which glass—the shorter, thicker glass or the taller, thinner one—contained more liquid. Youngsters who were put through this test consistently indicated that the taller glass contained more liquid. In general, people struggled to distinguish between quantity and shape in their imaginations (Myers, 2014).

Locus of Control

Locus of control is the extent to which people believe they have power over the things that happen in their lives (Cherry, 2019). This concept is also being used in child development, although this term is concerned with Psychology. This relates to children and adults. People who assume that they can influence events acquire an internal locus of control (Cherry, 2019; Joelson,2017). Here when a child never gets appreciation for what he did, he will look inside himself and rethink to improve things. A child thinks in the same way as a teenager when he gets bad marks on a test and thinks, "I'll start studying sooner next time. He says to himself "I shall talk to my teacher about what to focus on" or "I will talk to my father to help me". Having an internal locus is linked to positive outcomes, such as higher academic achievement, high self-esteem, better physical and mental health, feeling happier and more independent, and more success at work (Cherry, 2019; Hosseini et al. 2016; Jain & Singh, 2015; Joelson, 2017; Shepherd, Owen, Fitch, & Marshall, 2006).

Felfe & Lalive (2018) studied that ECC has more ability to develop cognitive abilities of the children such as scientific thinking and verbal abilities. These cognitive abilities help further the acquisition of specific skills. Discussion and conclusion of Yasrab & Shah (2022) that children who received the ECE teaching grow in ameliorate manner. It was also concluded that most of the centers were without ECE trained teachers.

Statement of the Problem

It was observed that in Pakistan that teachers at the Montessori or play group level needed to be trained in the development of cognitive skills among children of age (4-5 years) in different areas of Islamabad Capital Territory. The study "Development of skills at the preoperational stage; A comparative study on Cognitive development of Urban and rural children" has been done to find out the level of cognitive development at the preoperational stage.

Objectives of the study

The following were the objectives of the study:

1. To find out the cognitive skills of urban students of (4-6) years of age.
2. To find out the cognitive skills of rural students of (4-6) years of age.
3. To compare the student's cognitive development of urban and rural students on language development, egocentrism,

understanding environment, Conservational and colouring, and block building.

Research Questions

1. What was the situation of cognitive development among children of (4-6) years of age in urban areas?
2. What was the situation of cognitive development among children of (4-6) years of age in rural areas?
3. What was the difference between urban and rural students on cognitive development in language development, egocentrism, understanding of the environment, locus of control, and colouring and block building?

Research Methodology

This study was descriptive in nature.

Sample and Sampling Technique

This study constitutes 20 teachers teaching in Islamabad Model Institutions and 50 children between the ages of 4-5 years. out of these 20 teachers, ten teachers were selected from urban areas, and ten teachers were selected from Urban areas. In the same way, 50 children were selected from 10 schools: 25 from rural and 25 from Urban areas.

Sampling Framework

	Rural Sector (Nilore)					**Urban Sector-II**				
Teachers	IMSB Khana	IMSG Khana	IMSG Tarlai	IMSB Jaba	IMSG Jaba	IMSB 1/8.1	IMCG 1/8.3	IMSB G.8/4	IMSG AIOU	IMSG IMCG 1/8.3
	2	2	2	2	2	2	2	2	2	2
Students (2-6 Years)	IMSb Khana	IMSG Khana	IMSG Tarlai	IMSB Jaba	IMSG Jaba	IMSB 1/8.1	IMCG 1/8.3	IMSB G.8/4	IMSG AIOU	IMSG IMCG 1/8.3
	5	5	5	5	5	5	5	5	5	5

A multistage purposive sampling technique was used to select the sample respondents. In the first stage, two sectors were randomly selected.

In the second stage, five schools were purposively selected from each sector where students of age between 4-6 years were enrolled. After seeking permission from the respective heads, five students and two teachers were selected as per the criteria.

Research Tool

The observation was used as a tool for data collection.

1. **Observation**

   A checklist for observation of different cognitive skills was used where skills through activities were observed. Constructs regarding cognitive development were selected from the literature. A list of cognitive abilities and a list of activities for measurement of cognitive skills are given in the following. Students were given these tasks/activities and then observed the development of cognitive skills.

Table 1

Tasks or Activities for measuring cognitive skills

S.N	Cognitive ability	Activities for measurement of developed abilities
1	Language Development	1. Tell names, father's name, and address. 2. Tell body parts about their functions
2	Egocentrism	First, some sweets were given to the children, and were asked to share them with others as they have also the right to eat sweets.
3	Understanding Environment	1. Charts of the rural environment, Urban Environment, and Water environment will be used.
4	Centration	2. A white cat with white paws activity.
5	Locus of Control	Locus of control is the extent to which people believe they have power over the things that happen in their lives (Cherry, 2019).

6	Conservation	In this activity, the first two disposal glasses with the same volume of water were used. Then water from one glass was poured into another glass of tall thin glass. Children were asked to tell which glass contains more water or less water.
7	Coloring	Flower was provided to children of age 4-5 years for coloring skills and quality of coloring abilities.
8	Making Buildings with the Help of Blocks.	Plastic Blocks were used to find the ability to build with the help of blocks.

For example, correct words spoken by the students in unit time were calculated and for the understanding of the environment, students were shown different environments (Water environment, rural Environment, Urban environment, etc.). In the same way, a cat for centration or locus of control was used. A picture of a flower with a pedicel was given to the students for measuring their colouring skills.

Further interviews were conducted with the teachers to collect data of students regarding their cognitive development.

Data Analysis

Data was analyzed in both qualitative and quantitative formats. In Qualitative format, data got through observation and interviews were analyzed. Data was analyzed on three levels high (ǎ) medium (β) low (γ).

Table 1

Comparison of urban-II and Rural Children on language development

S.N	Total Urban-II	Responses	%age	Total Rural	Responses	%age
1		ǎ = 20	80%		5	20%
2	25	β = 5	20%	25	15	60%
3		γ = Nil	00%		5	20%

Table.1 shows that overall children of Urban-II schools have well-developed language skills as compared to the children of rural areas. It was observed that 80% of children performed the language tasks at a high level whereas only 20% children of in rural areas performed at a high level.

Table 2

Comparison of Urban-II and Rural Children on Egocentrism

S.N	Total	Responses	%age	Total	Responses	%age
	Urban-II			Rural (Nilore Sector)		
1		ǎ = 7	28%		4	16%
2	25	β = 12	48%	25	10	40%
3		γ = 6	24%		11	44%

Table .2 shows that only 28% of children showed a high level of egocentrism in the area of Urban schools whereas only 16% of children were egocentric in the rural area.

Table 3

Comparison of Urban-II and Rural Children on Understanding Environment

S.N	Total	Responses	%age	Total	Responses	%age
	Urban-II			Rural		
1		ǎ = 17	68%		10	40%
2	25	β = 5	20%	25	8	32%
3		γ = 3	12%		7	28%

Table.3 depicts that 68% of children in Urban-II areas showed high-level cognitive development toward the understanding of the environment as compared to only 40% high-level development about the understanding of the environment.

Table 4

Comparison of Urban-II and Rural Children on Centration

S.N	Total	Responses	%age	Total	Responses	%age
	Urban-II			Rural		
1		ǎ = 2	64%		12	48%
2	25	β = 7	28%	25	6	24%
3		γ = 16	04%		7	28%

Table. 4 shows that 64% of children from Urban-II children demonstrated decentration whereas only 48% of children from rural areas showed centration.

Table 5

Comparison of Urban-II and Rural Children on Locus of Control

S.N	Total	Responses	%age	Total	Responses	%age
	Urban-II			Rural		
1		ă = 12	48%		10	40%
2	25	β = 8	32%	25	7	28%
3		γ = 5	20%		8	32%

Table.5 shows that 48% of children demonstrated locus of control from the urban population whereas only 40% of children from rural areas demonstrated a high-level locus of control.

Table 6

Comparison of Urban-II and Rural Children on Conservation

S.N	Total	Responses	%age	Total	Responses	%age
	Urban-II			Rural		
1		ă = 13	52%		11	44%
2	25	β = 9	36%	25	4	16%
3		γ = 3	12%		9	36%

Table.6 demonstrated that 52% of children from Urban area has conservation skills of a high level, whereas only 44 % of children from rural area have developed conservation skills at a high level.

Table 7

Comparison of Urban-II and Rural Children on Colouring

S.N	Total	Responses	%age	Total	Responses	%age
	Urban-II			Rural		
1		ă = 16	64%		10	40%
2	25	β = 5	20%	25	6	24%
3		γ = 4	16%		9	36%

Table.7 demonstrates that 64% of children have high-level coloring skills whereas only 40% of children from rural areas have developed colouring skills at a high level.

Table 8

Comparison of Urban-II and Rural Children on Making Building with Blocks

S.N	Total Urban-II	Responses	%age	Total Rural	Responses	%age
1		ă = 15	60%		8	32%
2	25	β = 5	20%	25	7	28%
3		γ = 5	20%		10	40%

Table .8 demonstrates that 60% of children from urban II showed high-level skills of building-making with the help of blocks whereas only 32% of children from rural areas showed high-level skill development.

Findings and Discussions

It was found from the data of children that more children from urban-II areas have high levels of development of cognitive skills as compared to rural children. There was no child with low-level development of language from urban-II areas whereas from rural areas there were some children who developed lower-level language skills (Table.1)

It was found from table.2 that more children showed egocentrism from urban-II areas whereas fewer children showed egocentrism from rural areas. It was found that understanding of the environment was developed among children of urban-II areas to a larger extent as compared to the understanding of the environment among children from rural areas (table.3). It was found from the data of table.4 that skill of de-centration was developed among the children of Urban-II whereas children of rural area demonstrated centration skills. Children from the Urban-II area demonstrated centration at a high level compared to the centration skill of children in rural areas Table.4. It was found that the locus of control of both groups of children was less than fifty percent. which showed complexity in the Locus of control among children. (Table.5). It was found that children of the urban-II area showed a little bit higher level of conservation skills. According to Piaget conservation skills may be developed among students in the last years of the pre-operational stage or early years of the operational stage of children(table.6). Children of urban areas showed much better skills in colouring the pictures provided to them, but children of the rural area showed fewer skills in colouring. (It was also found that children of the rural area showed much interest in colouring and demanded that they may be provided with resources (table.7). It was found through making buildings with blocks that children of the urban-II area have too much better skills compared to the children of rural area. But the

children showed much interest in making buildings with the help of blocks. This showed that there was a lack of resources for the development of certain required skills among the children of rural children.

Different factors affecting cognitive development were found in home factors and the environment. Teachers said that parents do not care for the cognitive development of children between 4-6 years. For example, some children demanded to have blocks to play with and said that they have no toys in their home as parents cannot provide them. Another factor was time which parents were not able to give to their children. Most often parents do not motivate their children toward cognitive development. They do not provide the sources and time to their children for activities that enhance cognitive skills. Also, the variant environment is responsible for varied cognitive development among children. Depravation of a good environment and activities were seen among the children of rural areas. According to Talat, Abro, & Jamali (2013) during this stage children of the years 2-7 go through cognitive development. During this stage processes such as egocentrism, imaginative thinking, logical thought, conservation, locus of control, and special reasoning develop. In the same way, development is related to the environment and the special abilities of the children.

Conclusions

It was found and concluded that overall children showed more cognitive development studying in Urban-II areas as compared to rural areas. Language development among children in urban areas was up to the mark whereas language development of rural children was less developed. It is concluded that children of urban showed less egocentrism whereas the children of rural areas demonstrated more egocentrism. Children of urban-II areas showed more conservation skills compared to rural children. Children from rural areas were less skilled in making buildings with blocks compared to urban children.

Recommendations

Parents may be motivated to provide good learning environments to their children of age between 4-6 years. Organizations may play their role to provide opportunities to children and parents from rural areas regarding Language development. Keeping in view the skills development among rural children, it is recommended that resources may be provided to the children of rural children and their parents may be guided.

References

Babakr, Z., Mohamedamin, P., & Kakamad, K. (2019). Piaget's cognitive developmental theory: Critical review. *Education Quarterly Reviews, 2*(3).

Babakr, Zana and Mohamedamin, Pakstan and Kakamad, Karwan, Piaget's Cognitive Developmental Theory: Critical Review (August 15, 2019). Education Quarterly Reviews, Vol.2 No.3 (2019), Available at SSRN: https://ssrn.com/abstract=3437574

Babakr, Zana and Mohamedamin, Pakstan and Kakamad, Karwan, Piaget's Cognitive Developmental Theory: Critical Review (August 15, 2019). Education Quarterly Reviews, Vol.2 No.3 (2019), Available at SSRN: https://ssrn.com/abstract=3437574

Bashrin, S. D. (2015). *Piaget's pre-operational stage in children: a comparative study* (Doctoral dissertation, BRAC University).

Bashrin, S. D. (2015). *Piaget's pre-operational stage in children: a comparative study* (Doctoral dissertation, BRAC University).

Bauer, P. J., Larkina, M., Deocampo, J., & Goswami, U. (2011). The Wiley-Blackwell Handbook of childhood cognitive development.

Benassi, V. A., Sweeney, P. D., & Dufour, C. L. (1988). Is there a relation between locus of control orientation and depression? Journal of Abnormal Psychology, 97(3), 357-367.

Cacioppo, J. T., & Freberg, L. A. (2013). Discovering Psychology, The Science of Mind. USA: Wadsworth.

Cherry, K. (2019). Locus of control and your life: Are you in control of your destiny? Retrieved from https://www.verywellmind.com/what-is-locus-of-control-2795434

Children's Resources International. (2008). ECE policy review: Policies, profile, and programs of early childhood education (ECE) in Pakistan.

Ciccarelli, S. K., & Whith, J. N. (2012). Psychology. United States of Pearson Education.

Felfe, C., & Lalive, R. (2018). Does early childcare affect children's development? *Journal of Public Economics, 159*, 33-53.

Hosseini, S. N., Alavijeh, M. M., Matin, B. K., Hamzeh, B., Ashtarian, H. & Jalilian, F. (2016). Locus of control or self-esteem; Which one is the best predictor of academic achievement in Iranian college students? Iranian Journal of Psychiatry and Behavioral Sciences, 10(1).

Jain, M. & Singh, S. (2015). Locus of control and its relationship with mental health and adjustment among adolescent females. Journal of Mental Health and Human Behaviour, 20(1), 16-21.

Joelson, R. B. (2017). Locus of control: How do we determine our successes and failures? Retrieved from https://www.psychologytoday.com/us/blog/moments-matter/201708/locus-control

Miller, M. (2012). *The logic of language development in early childhood* (Vol. 3). Springer Science & Business Media.

Mukhtar, M., & Naz, F. (2021). Social skills as predictors of cognitive failure, attention deficits and psychological maladjustment in school children. *FWU Journal of Social Sciences*, *15*(3), 140-151.

Oktaviana, A., & Srianggita, I. (2021). Cognitive Development of Children Aged 4-7 Years During The Covid-19 Pandemic. *JOYCE: Journal of Early Childhood Education*, *1*(2), 127-138.

Rashid, T. (2010). Development of social skills among children at the elementary level. *Bulletin of education and Research*, *32*(1).

Shepherd, S., Owen, D., Fitch, T.J., & Marshall, J. L. (2006). Locus of control and academic achievement in high school students. Psychological Reports, 98(2), 318-22.

Spelke, E. S., & Newport, E. L. (1998). Nativism, empiricism, and the development of knowledge.

Talat, E., Abro, A., & Jamali, M. (2013). Analysis of cognitive development of learners at the concrete operational stage in Pakistan. *Interdisciplinary Journal of Contemporary Research Business*, *5*(3), 35-52.

Yasrab, G., & Shah, S. S. A. (2022). Impact of Early Childhood Education Project on Students' Cognitive Development at School in the Punjab, Pakistan. *Pakistan Languages and Humanities Review*, *6*(2), 318-327.

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