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Role of Father in the Cognitive Development of the Child: An Exploration

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Abstract

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In his own mind no child is 'without a father'. Nowadays fatherlessness is no longer regarded as an automatic disadvantage, nor is it rare. Some women choose to have children without involving the father after conception. Others find single parenthood preferable after trying to collaborate with the father or with another adult male. This study focuses on the role of father in the cognitive development of the child. Participants of the study are the school going students. Piagetian levels of Cognitive Development Questionnaire by Bakken is used to measure the level of cognitive development and the details about the relationship, involvement and proximity between the parent and child is collected through an unstructured interview with the child. Results revealed that children with highly involved fathers show a better cognitive ability than children with averagely or less involved fathers and hence fathering has a great impact on the cognitive development of the child.

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A good father is critical to the optimal development and well-being of a child. A father's role is more than that of an economic provider and includes nurturing, care giving, and emotional support in both obvious and subtle ways. Successful fatherhood correlates strongly with many attributes of children successfully growing up like healthy child development, gender identity, responsible sexuality, emotional and social commitment, financial security etc.

The role of father as protector and provider has changed over the years. Historically, fathers were viewed as chief financial provider for and protector of their children. As the traditional roles of mother and father, and likewise man and wife, have changed over the years, the distinctions have blurred, especially when it comes to who is the breadwinner.

Father Involvement

The time a father spends with his children is the major indicator of father involvement. Time spent is important for at least three reasons. First, spending time together enables a father to get to know and to be known by his child. A father can best discover his child's virtues and vices, hopes and fears, and aspirations and ideals by spending lots of time with his child. Second, a father who spends lots of time with his child tends to be better at caring. Time spent together makes a father more sensitive to his child's needs for love, attention, direction, and discipline. And third, children often do see time as an indicator of a parent's love for them.

According to the researches, father has a role in the child's physical and mental health habits, success in school, self respect and self-esteem, respect for others and for appropriate authority, constructive social and peer activities, avoidance of substance abuse, delinquency, and other forms of high-risk behaviors. An appropriate male role model is believed to help boys seeking to create and understand their place in the world, and girls formulating the terms of respectful and happy relationships with the opposite sex. Understanding the emotional and social prerequisites and the consequences of sexual activity depends on a father's involvement. Programs to reduce teen pregnancy are a significant focus of father involvement initiatives. The



invisible bonds of affection and protection are strengthened in children through the demonstration of these bonds in day-to-day father involvement. Family self sufficiency is greatly enhanced, even in poorly paid sectors of the economy, where father involvement is strong.

A father's influence as a role model for his children is affected by the amount of time they spend together. Whether they live in the same home on a full-time basis or not, fathers should make a concerted effort to model behaviors and attitudes that they want to see their children display when they grow up.

Piaget's theory of cognitive development

Piaget's theory of cognitive development is a comprehensive theory about the nature and development of human intelligence, first developed by Jean Piaget. It is primarily known as a developmental stage theory, but in fact, it deals with the nature of knowledge itself and how humans come gradually to acquire, construct, and use it. To Piaget, cognitive development was a progressive reorganization of mental processes as a result of biological maturation and environmental experience. Children construct an understanding of the world around them, and then experience discrepancies between what they already know and what they discover in their environment. Moreover, Piaget claims the idea that cognitive development is at the center of human organism and language is contingent on cognitive development.

Three Key Piagetian concepts are cognitive structure, cognitive function and cognitive content. Cognitive structure refers to the form (or shape or pattern) that cognition takes during each of Piaget's stages of mental growth. Piaget believes that one may discern abstract organizational patterns (i.e., structures) that underlie cognition and that may be said to control it. Piaget also believes each level of cognitive development is characterized by its own unique set of governing structures.

Cognitive functions are purposes and goals that express where cognitive development is going. They are the statement of direction like simple-to-complex principle. Piaget maintains that intellectual skills which characterize each stage of mental growth should be viewed as helping the organism to attain certain goals or end states that are part of organism's heredity endowment.

Cognitive contents are the specific intellectual acts that comprise intelligence at any given stage of development. Such things as a visual image, an auditory image, a mathematical concept, and an abstract symbol all are examples of cognitive contents. All the problem solving and reasoning skills like object permanence, conservation, transitivity etc are cognitive contents. Of the three concepts, structure, function, and content, cognitive contents are the only thing that can be directly measured. Both structures and functions are inferred from the measurement of content.

Infants of highly involved fathers, as measured by amount of interaction, including higher levels of play and care giving activities, are more cognitively competent at 6 months and score higher on the Bayley Scales of Infant Development (Peterson & Zill, 1986; Peterson & Anderson, 2002). By one year they continue to have higher cognitive functioning (Nugent, 1991), are better problem solvers as toddlers (Easterbrooks & Goldberg, 1990), and have higher IQ's by age three (Flouri, & Buchanan, 2000). When compared with mothers, fathers' talk with toddlers is characterized by more wh- (e.g. "what", "where" etc.) questions, which requires children to assume more communicative responsibility in the interaction. These encouraged toddlers to talk more, use more diverse vocabulary, and produce longer utterances when interacting with their fathers (Rowe, Cocker, & Pan, 2004).

School aged children of involved fathers have better quantitative and verbal skills (Bing, 1963; Goldstein, 1982; Radin, 1982), Children of involved fathers are also more likely to live in cognitively stimulating homes (William, 1997), are more likely to demonstrate more cognitive competence on standardized intellectual assessments (Lamb, 1987; Radin, 1994) and have higher IQ's (Gottfried et al., 1988; Honzik, 1967; Radin 1982; Shinn, 1978).



Objectives

1. To explore whether the children has crossed pre-operational stage and has started acquiring tasks of concrete operational stage early.
2. To examine, the impact of father involvement, on the cognitive development of the child.
3. To compare, the cognitive development of children live with their father and those living away from their father.

Hypotheses

1. Some children cross the pre-operational stage and acquire the tasks of concrete operational stage earlier than their age mates.
2. Father involvement have significant impact on the cognitive development of the child
3. Children living with their father have better cognitive abilities than the children living away from their father.

Method

Participants

Participants of this study consist of 20 students of 1st Std. of a private school at Malappuram, Kerala. Purposive Sampling technique was used, in which the children were selected from a single school, studying in the same class so as to control the age, learning experiences and the class room climate that these children have.

Instruments

1. **The Seven Piagetian Conservation Tasks:** This instrument was developed by Bakken (1995) based on Piagetian cognitive development. The instrument used in the study to understand the cognitive development of the child is Piagetian-based cognitive development task. Piagetian level of Cognitive Development Questionnaire is a 12-item, multiple choice test of Piaget tasks designed to determine a child's level of cognitive development. The test identifies the concrete operations stage with sub stages of conservation of number, conservation of continuous quantity, conservation of length, conservation of area, conservation of mass, and conservation of weight, conservation of volume, right-left relationship, classification and perspective taking. The seven tasks are not acquired at once. Instead, they are acquired in the order listed here, with conservation of number typically mastered by 5 or 6, but conservation of volume often not mastered until 9 or 10. This was something of an embarrassment for Piaget, who invoked the notion of *decalage* ('uncoupling') in an attempt to explain why such structurally similar concepts should be acquired at such diverse ages. Reliability for the concrete operations stage is $r=.70$, ($p<.01$) and reliability for formal operations is $r=.52$ ($p<.05$). Two criterion related validity studies showed statistically significant correlations between the Piagetian tasks using a clinical interview technique and the multiple-choice Piaget test (Bakken, 1995).
2. **Indicator of father involvement:** To assess the father involvement a father involvement indicator was prepared by the researcher, after content analyzing the review of literature. Unstructured interview technique was used to study the father involvement and some questions were asked to children to measure father involvement. There were ten questions. For example, 1. Does your father reward you when you do things that your father likes? 2. Do you and your father eat together often? 3. Do you and your father play together often? Etc. All the questions are to be answered yes/no. For 'yes' score 1 point and for 'no' scores a zero point. Maximum score is 10.



Procedure

Data was collected from 20 students, from 1st Std. of a private school at Malappuram, Kerala. Researcher met the authority, got the permission for data collection and interviewed each student separately to know about their relationship with their father. Piagetian-based cognitive development task developed by Bakken (1995) was administered to each participant and the results were recorded. Semi structured interview was conducted to study the relationship between the child and his/her father. Using the father involvement indicator, questions were asked to the children and for each positive response one point was given.

Results and Discussion

Development of cognition was beautifully theorized by Piaget and in his theory. According to the theory, various tasks are to be accomplished at each stages of development. The four stages are: the sensory-motor stage (from birth to about age 2), the pre-operational stage (roughly age 2 to 7), the concrete operational stage (around age 7 to 11) and the formal operation stage (begins around age 11 and continues through the remainder of mature life). Present sample of study sample constitutes children of age 6 and is meant to be in the pre-operational stage. In this study Piagetian-based cognitive development task developed by Bakken (1995) is used to see whether these children have crossed pre-operational stage and reached or started attaining the tasks of concrete-operational stage. So the puzzles used here are based on the conservation tasks for concrete-operational stage.

Table 1

Piagetian-based cognitive development task and number of the participants answered correctly

Task	No: of participants Answered Correctly
Conservation of number	1
Conservation of volume	0
Conservation of continuous quality	1
Conservation of area	0
Classification	0
Conservation of weight	0
Left-right relationship	12
Perspective taking	7

Conservation of number and continuous quality

One of the child was able answer this puzzle and the same child scored full points on father involvement.

Left-right relationship

Twelve out of 20 children were able to complete this puzzle correctly. These 12 children constitutes all the 7 children with highly involved fathers, and 5 out of 8 children with averagely involved fathers and none of the children were with a less involved father.

Perspective taking

In the question on perspective taking, although 7 of the participants made a correct response, the result is questionable. When the participants were asked the same question for the second time by the researcher, they were confused. This result might have occurred since there were only two choices and the children were making a guess work. Hence this result is not being discussed.

None of the children were able to answer this puzzle on Conservation of area, volume, weight and Classification

Table 1 shows that, some of the tasks of conservation like, conservation of number, conservation of continuous quality, left-right relationship and perspective taking were figured



out by some of the children. One each was able to respond correctly to conservation of number and continuous quality. Twelve out of 20 participants made the response for left-right relationship right and 7 gave correct response to perspective taking.

According to Bakken (1995), in the concrete-operational stage, in the sub stage one, the child will be able capable of answering task on conservation of number, conservation of continuous quality and left-right relationship. So, the above result indicates that the children who were able to complete the tasks required for sub stage one of concrete-operation has entered that stage, those who made correct response for some of the tasks for sub stage one are on the pathway from preoperational to concrete-operational stage. And those who were not able to complete any task are still in the preoperational stage.

Table 2

Father Involvement score and no: of correct responses by each participant.

case	Father Involvement Score	No: of Correct responses
1	10	7
2	6	4
3	5	0
4	9	5
5	5	4
6	8	5
7	2	0
8	3	2
9	3	3
10	9	4
11	4	4
12	9	4
13	4	4
14	9	4
15	3	1
16	4	4
17	3	0
18	3	3
19	9	4
20	7	4

Children who are not able to complete any of the puzzle means that they are still in the pre-operational stage (left-right relationship have 4 sub questions. So the score below 4 does not indicate a completed task). Around half of the children are still working in the pre-operational mode while the other half are just stepping in to the concrete operational stage. They are capable of understanding the left-right relationship. In the cases that have attained this ability, it is noticeable that they had either high or averagely involved fathers. And one child was able to complete the puzzles of conservation of number, continuous quality and left-right relationship. It implies that, this child has entered the sub stage one of concrete-operational stage. The father of the same child scored the maximum on involvement. The maximum score attained on father involvement is 10, which itself is the maximum score for the semi structured interview schedule. The minimum score attained on father involvement in the present subjects is 2.



Table 3

Father Involvement score and number of participants with correct response on left-right relationship.

No	Father involvement scores	No of participants	No: of participants correct on left-right relationship
1	Low father involvement(1-3)	5	0
2	Average father involvement(4-7)	8	6
3	High father involvement(8-10)	7	7

Out of the 20 children, on the score of father involvement, 5 of them comes in 1-3 score (with less involved fathers), 8 of them in 4-7 score (fathers with average involvement) and 7 of them in 8-10 category (fathers with high involvement).

Left-right relationship is the puzzle that was correctly answered by a majority. It consisted of 4 sub questions. Twelve out of 20 made the puzzle correct. On comparison of father involvement and the ability to understand left-right relationship, table shows that, out of the 7 cases with highly involved fathers were all capable of solving the puzzle and 6 out of 8 with averagely involved fathers responded correctly. But, none of the participants with a less involved father were able to solve the puzzle.

As the review suggests, when compared to mothers, fathers' talk with toddlers is characterized by more wh- (e.g. "what", "where" etc.) questions, which requires children to assume more communicative responsibility in the interaction. These encouraged toddlers to talk more, use more diverse vocabulary, and produce longer utterances when interacting with their fathers (Rowe, Cocker, & Pan, 2004). This makes the child's environment more stimulating and it attributes to the growth and development of cognitive abilities as well as the overall development of the child.

In the present sample, all the cases with low father involvement had their father living and working abroad. There the child doesn't come in direct contact with his or her father daily. The only communication these children receive is a short phone call and they have a short and surface communication for around 5-10 minutes, once or twice in a week. The frequency and duration may vary. There the communication is not in depth or open. There are no non-verbal cues available on expressions or emotions. There are many such barriers between the father and the child.

In the present data, one single child scored the maximum score on father involvement (10) and himself scored maximum on the Piagetian-based cognitive development task(7). He was the only participant who has reached the sub stage one of concrete operation stage. Childs father is a daily wage laborer, who comes home daily early in the evening and has time to spend with his family. He rewards and punish when required, express love often (holds, hugs, kisses etc), help with daily activities(brushing, bathing etc) eat together often, assist in studies, go for family visits or tours often, play together often and communicate daily. There were children of working class fathers, but they missed some or many of the fathering roles acted by this daily wage laborer.

The result states that, there is a clear proof influence of father involvement on the cognitive development of the child. A child living in a highly involved father is assumed to be living in a safe and stimulating environment. When the father is a highly involved father and he is a very supportive partner to the child's mother, it directly as well as indirectly adds to the positive and growing environment to the child.



Conclusion

Children with highly involved fathers show a better cognitive ability than children with averagely or less involved fathers. Hence fathers do have a significant role in the cognitive development of the child. Some of the children of age 6 has crossed pre-operational stage and has started acquiring tasks of concrete operational stage early. Father as well as fathering has a great impact on the cognitive development of the child. Involvement of father is an indicator of cognitive stimulation at home. The cognitive development of children living with their father and those living away from their father differs in the manner how the father is involved. Neither the educational background nor the economic status but the mind to be there for the child in all ways and being there makes the difference.

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