

# Accounting Chronological Age and Cognitive Development Age for Addressing Gaps in Cognitive Development

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**Abstract:** *Research lays foundation for Development and development further signals for a novel research and the cycle goes on. To enhance the understanding of Education, lucid scientific experimental study was conducted. The present research was conducted on 600 students from Mohali, Chandigarh and Panchkula belonging to the specific age i.e. 4 years at the start-up. Subjects were divided into two groups following a random sampling procedure. Experimental Group was labeled Group A as whereas the Control Group was termed as Group B. The data was collected as per the set methodology from both the groups which was later compared to draw meaningful inferences. The result figures throw light on the fact that the subjects hailing from the Experimental Group A having monitored access to CEREBED Foundation ameliorated in cognitive development defining advancement in their Cognitive Development Age while those off our intervention lagged behind their counterparts in terms of the Cognitive Age Development. CEREBED Foundation filled Cognitive Gaps at the crucial stage that eventually advanced the experimental group.*

**Keywords:** CEREBED Foundation, Cognitive Development, Gaps in Cognitive Development

## 1. Introduction

CEREBED Foundation is a scientific approach that builds a lifelong foundation for children. The rigorous research was carried out to ensure the capabilities of the said program. It is well known that the brain of a child keeps on framing patterns every day as per the education, experience and interactions he encounters in day to day life. As to take benefit from this inevitable phenomenon, CEREBED Foundation makes practical the formation of right patterns corroborating with the right mapping of the brain. The daily task sheets through the program assures the cognitive development at the right pace. The programme includes Cognitive Assessments, Cognitive Task Sheets, Progress Tracker every month and a tracker report after 6 months. It contains content in 2 Levels / 6 Months each. Early assessment of a child & timely action can design a stable, strong brain that can sustain for life. It is the world's first learning based solution for Brain & Cognitive Development of children 4-7 years. It develops child's Cognitive skill set at an early start leaves a permanent effect of skill sets, Builds an effective learning process for life, Measures current level of cognitive development, Identifies natural ability and learning style, Eliminates guess work in raising child, Engages the child in positive learning. Gaps in Cognitive Development are identified & measured with the help of Kids Cognitive Ability Assessment (Cognalysis). The challenge is to fill these gaps as early as possible. To fill these gaps, Cognitive Task Sheets are designed & delivered in the form of workbooks. 1-2 Task Sheets a day are attempted by the child for full one year. Monitoring of the process is done every month. CEREBED acts as an operating system builder of the brain. It's a scientifically validated solution, to enhance learning process & other brain facilities, without interfering in regular academics & consumes less than 10 minutes a day. When implemented at an early age, it can deliver unbelievable results. The ratio of "output vs input" is what we call "Brains Efficiency" Performance in education or in any task is directly

proportional to the efficiency of a brain. Efficiency of a brain is directly dependent on the Cognitive Capacity, Absorption, Learning process Speed Memory & retention process. Researches on the functioning of the mind and brain, particularly during the past decade, have greatly enhanced our understanding of learning, memory, intelligence, and emotion, all of which have fundamental implications for education. Such efforts have led to the emergence of a new multi-disciplinary field called cognitive education, though the potentials and limitation of this flourishing field have not yet been addressed clearly so that it could be introduced as a field of study. The main purpose of this study, accordingly, was to enhance the existing clarity, and understand the amplitude of cognitive education by focusing on some fundamental features of this emerging field. Cognitive education may be defined as an approach to education that is based on cognitive science studies, mind and brain researches and focused upon acquiring, developing, and applying cognitive processes to realize qualified learning. Historically, cognitive education is most pronouncedly expressed in the writings of great thinkers such as Jan Piaget, Leo Vigotsky, Jerome Bruner and the large group of their followers. However, the current approach principally lies in the intersection of mind/brain and education studies, and some institutions around the world, including in Iran, have established cognitive education departments for a better understanding of learning and teaching in order to design and develop more effective educational programs and policies. Methodologically, cognitive education is a wide field embracing a rich variety of different methodologies, from laboratory experimental methods to qualitative methods. As the field is highly interdisciplinary, research often cuts across multiple areas of study, drawing on research methods from psychology, neuroscience, linguistic, artificial intelligence, and philosophy. While cognitive education has its specific concepts, tenets, history and methodology, it is a multidisciplinary field which supported by cognitive science foundation. Although cognitive education nourished from

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other cognitive sciences (such as neuroscience, psychology, philosophy of mind, linguistic, and artificial intelligence), cognitive education has some implications and applications for cognitive sciences too. It means that a full understanding of mind requires attention to all of these multiple-interrelated facets and it is certainly obvious that cognitive education has posed questions about how minds actually work. Hence, cognitive science could in principle, and in practice, improve our understandings of brain, mind, and learning, and the education profession could benefit from embracing rather than ignoring cognitive sciences. Consequently, educators should be actively contributing to the research agenda of future cognitive science research. It could be hoped that this article to be considered as a primary step in this way, since to reach an inclusive overview, firstly, it should be reviewed and deducted some important aspects in cognitive education such as its conceptual definition, historical development, research methodology and its relationship with cognitive science. The brain is the only organ that is unfinished at birth, but it continues to develop and evolve throughout life. The primary task of the brain in early childhood is the connection of brain cells. Babies are born with 100 billion nerve cells, called neurons. Every neuron has an axon, which sends information out to other neurons, and several dendrites, which receive information from other cells. As axons hook up with dendrites, trillions of connections called synapses are formed. During the first three years of life an infant's brain will forge an estimated 1,000 trillion synapses. A child's experiences forge the connections of neurons. Neurons that are used will strengthen, and those that are unused will eventually disappear. The quality of experiences and relationships in the first three years of life has a deep and lasting impact on how the brain develops. The richer the environment, the greater the number of interconnections that are made. The larger the number of interconnections, the faster and more meaningful learning will be. Interactions and relationships also shape children's brains. During the first year of life, trust develops. Trust is the foundation for all relationships. The more loving and responsive the caregiver is, the greater the foundation for later social interaction. Experiences and interactions shape children's brains and design the neural architecture that will influence how they will handle all future experiences. If an infant gets too little stimulation, affection, language, and human contact, the development of the brain that depends on those experiences will be deterred or will fail to progress.

## 2. Methodology

The in-hand study signifies the role of right education at right time imparted in a right manner to amend the cognition among children. The present research was conducted on 600 students from Mohali, Chandigarh and Panchkula belonging to the specific age i.e. 4 years at the start-up. Subjects were divided into two groups following a random sampling procedure. Experimental Group was labeled Group A as whereas the Control Group was termed as Group B. The data was collected as per the set methodology from both the groups which was later compared to draw meaningful inferences.

**Table 1: Methodology**

Cerebed Foundation		
<b>Step-1</b>	Kids Cognitive Assessment 600 students	
<b>Step-2</b>	Group A 300 Students	Group B 300 Students
<b>Step-3</b>	<b>Cerebed Foundation Tasksheets</b>	<b>No Intervention</b>
<b>Step-4</b>	Tracker Report (after 6 months)	Tracker Report (after 6 months)

## 3. Results and Discussion

**Table 2: Age Range during the Programme Group A (N=300)**

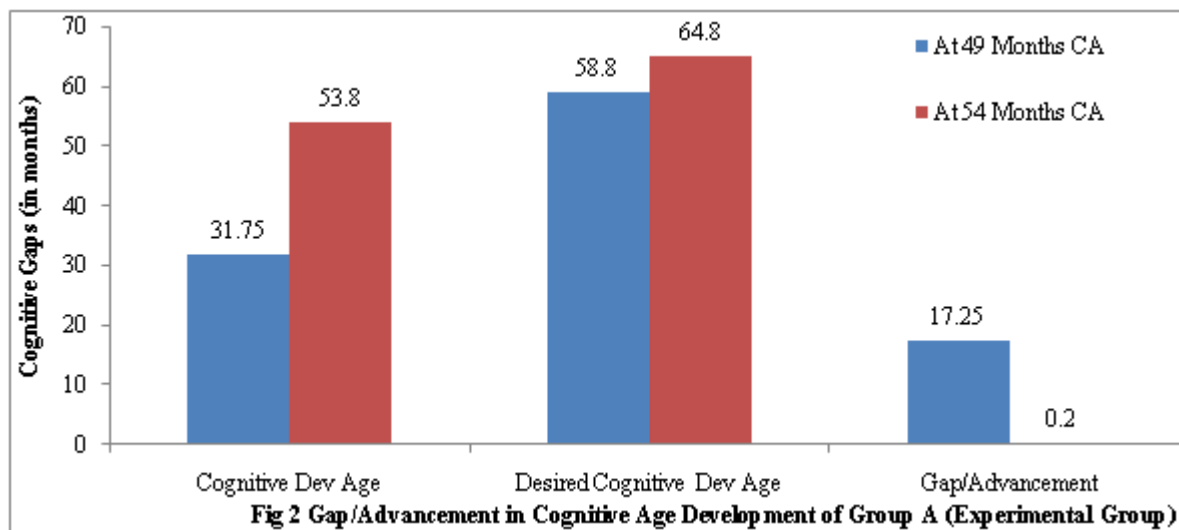
Average Age	Assessment	Tracker Stage
Age (in months)	49	54

**Table 3: Age Range during the Programme Group B (N=300)**

Average Age	Assessment	Tracker Stage
Age (in months)	49	54

**Table 4: Gap/Advancement in Cognitive Age Development of Group A (Experimental Group) n=300**

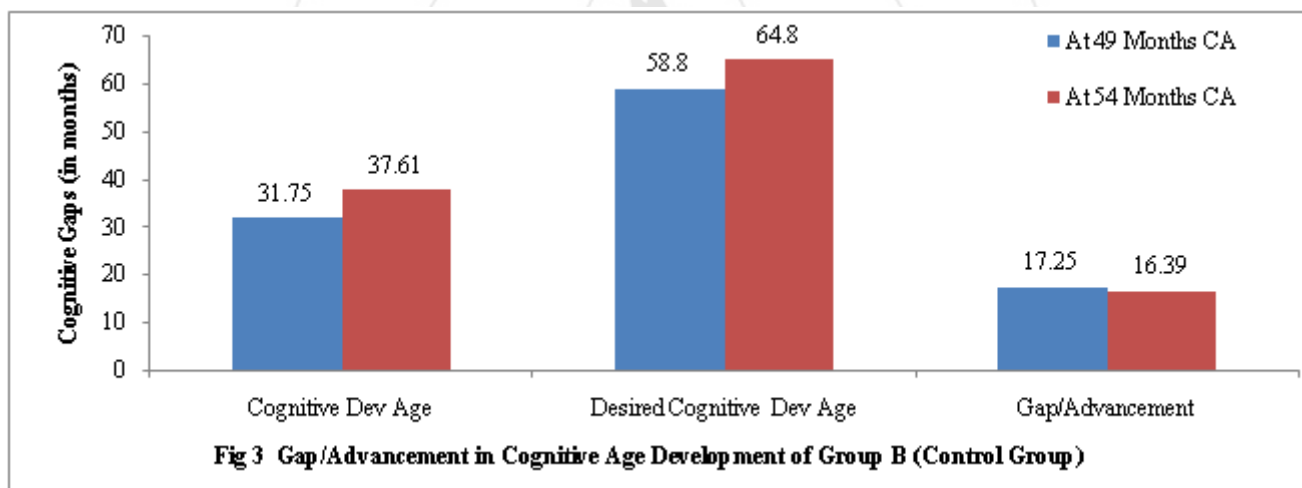
Chronological Age	Cognitive Dev Age	Desired Cognitive Dev Age	Gap/ Advancement
At 49 Months CA	31.75	58.8	17.25
At 54 Months CA	53.8	64.8	0.2



The Cognitive Development Age of Experimental Group was 31.75 as compared to 58.8 desired at 49 months of chronological age while the gap in Cognitive Development was found to be 17.25 months. In contrast, at 54 months of chronological age i.e. after 6 months of consummating CEREBED Foundation, the Cognitive Development Age of Experimental Group soared to 53.8 as to the 64.8 desired counting to a gap of merely 0.2 months.

**Table 5:** Gap/Advancement in Cognitive Age Development of Group B (Control Group)n=300

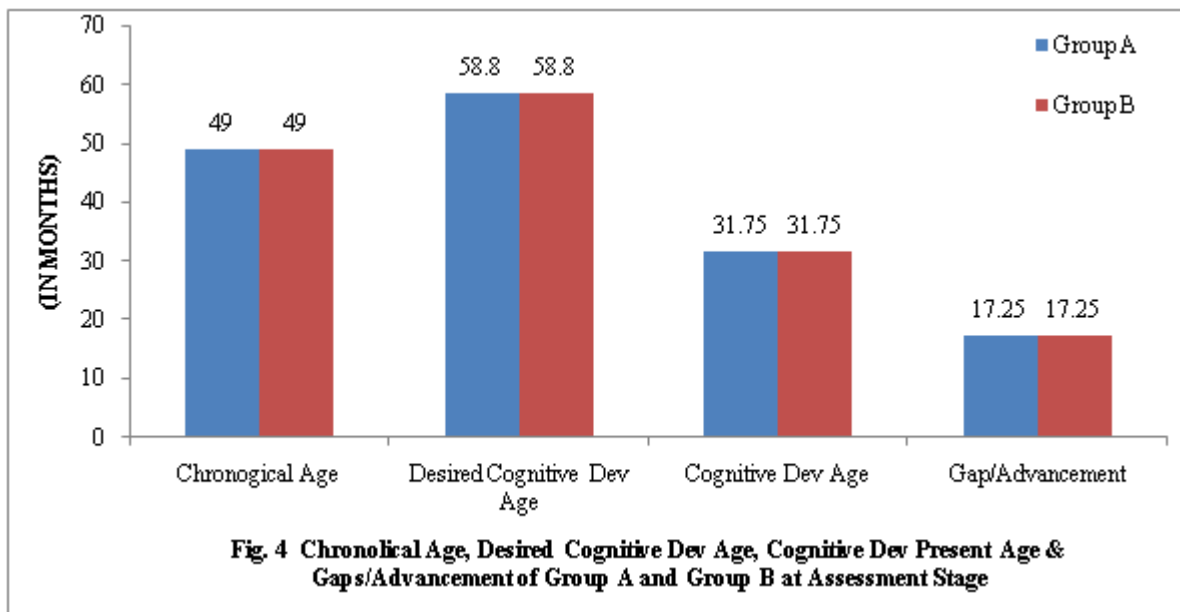
Chronological Age	Cognitive Dev Age	Desired Cognitive Dev Age	Gap/Advancement
At 49 Months CA	31.75	58.8	17.25
At 54 Months CA	37.61	64.8	16.39



The Cognitive Development Age of Control Group was 31.75 as compared to 58.8 desired at 49 months of chronological age while the gap in Cognitive Development was found to be 17.25 months. Insignificantly changed, at 54 months of chronological age i.e. after 6 months, assuring no intervention from our side, the Cognitive Development Age of Control Group minimally shifted to 37.61 as to the 64.8 desired amounting to huge a gap 16.39 months at this stage too.

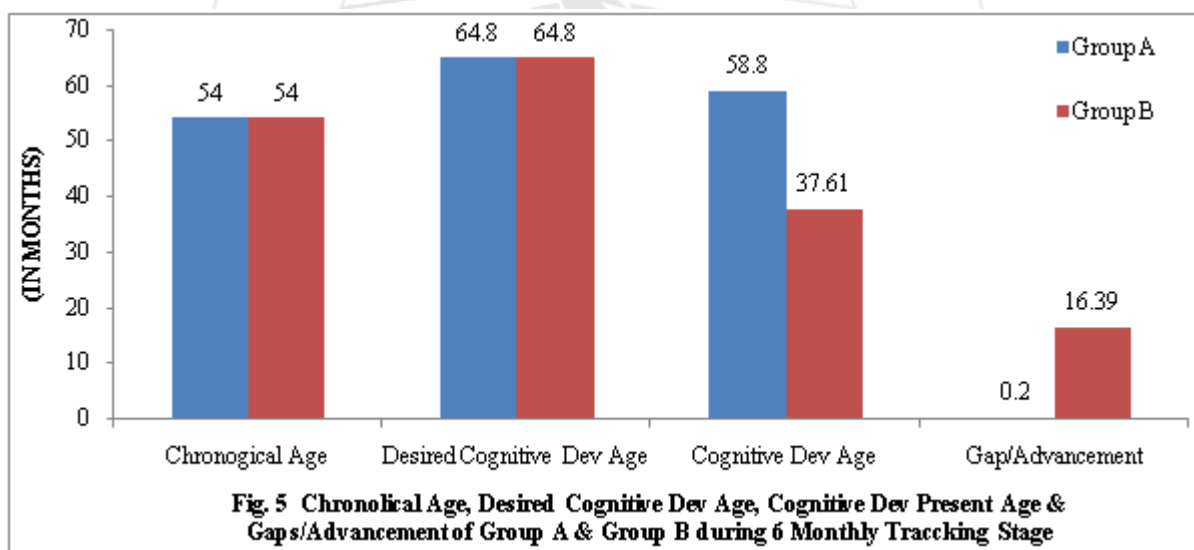
**Table 6:** Chronological Age, Desired Cognitive Dev Age, Cognitive Dev Present Age & Gaps/Advancement of Group A and Group B at Assessment Stage

Assessment	Group An=300	Group Bn=300
Chronological Age	49	49
Desired Cognitive Dev Age	58.8	58.8
Cognitive Dev Age	31.75	31.75
Gap/Advancement	17.25	17.25



**Table 7:** Chronological Age, Desired Cognitive Dev Age, Cognitive Dev Present Age & Gaps/Advancement of Group A & Group B during 6 Monthly Tracking Stage

AFTER 6 MONTHS	Group An=300	Group Bn=300
Chronological Age	54	54
Desired Cognitive Dev Age	64.8	64.8
Cognitive Dev Age	58.8	37.61
Gap/Advancement	0.2	16.39



#### 4. Conclusion

It is crystal clear that the respondents in the Experimental Group A having access to CEREBED Foundation excelled in cognitive development defining advancement in the same, whereas those lacking our intervention lagged behind their counterparts. It is wherefore ascertained that CEREBED Foundation aids specifically in filling the Cognitive Gaps at the crucial stage that further lays the strong foundation for success in educational and personal aspects of life.

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