

Home based fundamental multiple intelligence skill based intervention for children at elementary level

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ABSTRACT

Research implies an intact innovation which in turn lays fundamental foundation for development and that becomes a viscous circle. To explore the developmental sector in education, the present research was conducted on 965 randomly selected students for a year. The age of subjects ranged from 48 to 69 months. The subjects were divided into two groups. Experimental Group was labeled Group 1 whereas the Control Group was termed as Group 2. The data were collected following the set methodology from both the groups which were later compared in terms of cognitive development so as to draw meaningful inferences. The findings deduced that subjects hailing from the Experimental Group 1 who received the intervention in form of a digital platform 'Unlock Junior' improved on cognitive development whereas those devoid of the intervention lagged behind.

Keywords: *Cognitive Development, Digital, Intervention Programme, Personalized*

The in-hand research is aimed towards analyzing the impact of home based fundamental multiple intelligence skill-based intervention for children at elementary level, specifically on cognitive, intellectual, physical, social and emotional development of children. Childhood is the stage of human span starting from birth till the start of adolescence. Childhood has been further categorized into the developmental stages of early childhood and middle childhood. Early childhood refers to the preschool stage that continues till the age of 7. The middle childhood is the school stage of life which continues till 12 years of age. The cognitive, intellectual, physical, social and emotional development of children has a significant impact on their overall development. In this context, according to Rosch (1978), Vygotsky (1978), Siegler (1976), Chomsky (1957), it is inevitably vital to understand the importance of physical and mental activities that can lead to their physical well-being and mental health. Leslie (1987), Vygotsky (1986), Werker and Tees (1984), Viennot (1979), Carey (1978) have also elaborated the importance of personalized educative

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environment that has been reflected as the major source of serenity and composure in terms of success and achievement. According to Diamond (1990), Younger (1990) and Voltera and Erting (1990), such an environment enables children to manage their schedule and also helps to boost their self-esteem, thereby improving their cognitive, intellectual, physical, social and emotional intelligence. Cognition refers to the mental activities that lead to the development of meaning. Intellectual development processes use existing knowledge and generate new knowledge. It is the ability of a human brain to understand, comprehend and respond to the situations in an effective and efficient way. Social intelligence and development refers to the process through which children learn to interact with others and maintain meaningful relations with them. Social development makes them acceptable in society and they learn to behave in socially acceptable manner. They learn to develop friendships and handle conflicts. They learn to cooperate, share and adjust as per the situations and circumstances. Emotional intelligence and development of children enables them to recognize, express, and manage their feelings. Gardner (1999) has supported and emphasized the importance of multiple intelligences among children. Dunn and Cutting (1999), Zelazo et al. (1996) and Leslie (1994) deduced the importance of understanding others, and individual differences and impact of such variations on the interactions in young children to progress their social development. Carlson and Moses (2001) emphasized the visual learning and mapping among children. Sarnecka and Gelman (2004) and Kirkham et al. (2003) constructed and evaluated to help children apply their knowledge to their behaviour. Tomasello (2006) evaluated the acquisition of linguistic constructions. Dapretto et al. (2006) emphasized the importance of emotional intelligence among children. Goswami (2010) conducted research study on the inductive and deductive reasoning among individuals. Bauer (2010) emphasized the early memory development among children. Hughes (2011) carried a research on social understanding and social lives from toddlerhood through to the transition to school. Gottfried (2013) studied and emphasized home environment and early cognitive development in a longitudinal research. Bhide et al. (2013) and Mandel et al. (1995) found the positive impacts of musical intervention on mind, brain and education. McCormick et al. (2019) studied the early life child reasoning and a nurturing household environment having persistent influences on child cognitive development. Alam et al. (2020) studied cognitive development at 5 years of age from a multi-country cohort study. Children learn to display self-control and express feelings with words. Emotional development and stability equip children with the capabilities to express their emotions in an acceptable manner. It makes them aware, confident and conscious of own emotional responses. In view of the above, it was noticed that there were mixed views regarding the impact of personalized education on cognitive, intellectual, physical, social and emotional development of children. Learning, memory, intelligence, and emotion have fundamental implications for education. Based on the above parameters, cognitive age of the respondents was deduced through an already standardized process. The study intended to enhance the existing understanding of cognitive education by focusing on the fundamental features. In addition, most of the researchers have suggested undertaking the further studies on the issue under consideration. Moreover, childhood being the foundation of lifelong personality and overall development, there was felt an immense need to conduct the study in hand in order to analyze the impact of such personalized ecosystem on cognitive, intellectual, physical, social and emotional development of children.

METHODOLOGY

The study was conducted on 965 children to find the impact of home based fundamental multiple intelligence skill based intervention for children at elementary level, specifically on

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cognitive, intellectual, physical, social and emotional development of children. Purposive sampling was followed to extract the sample of respondents. The age of subjects ranged from 48 to 69 months. The subjects were divided into two groups. Experimental Group was labeled Group 1 whereas the Control Group was termed as Group 2. The first group received intervention programme which included a well developed scientific approach that intended to build a lifelong foundation for children. The research task on the said lines was carried out to ensure the understanding of the capabilities of the brain of a child. It is well perceived that brain of children keep on framing patterns through education, experience and interactions encountered by them in day to day life. The programme included pre assessment, cognitive tasks as embedded in the platform and a post assessment based on cognitive development. It aids to measure current level of cognitive development, identifies natural ability and learning style, eliminates guess work in raising child, engages the child in positive learning, realizes gaps in cognitive development with the help of cognitive ability assessments. Male as well as female respondents were included in the study. The data was collected, organized and analyzed to draw the desired inferences to find the difference in the intellectual, physical, social and emotional intelligence of respondents in both the groups. The study signifies the role of right education at right time imparted in a right manner to amend the cognition among children.

RESULTS AND DISCUSSION

It is very important to analyse the data and find out the relevant inferences to make the research study purposeful. In concern to this, the data were collected following the set methodology from both the groups which were later compared in terms of cognitive development so as to draw meaningful inferences. The findings deduced that subjects hailing from the experimental group 1 who received the intervention in form of a digital platform 'Unlock Junior' improved on cognitive development whereas those devoid of the intervention lagged behind.

Table 1 Age of respondents during the Programme (Group 1) (N=489)

Average Age	Pre Assessment	Post Assessment
Age (in months)	51	61

Table 2 Age Range during the Programme (Group 2) (N=476)

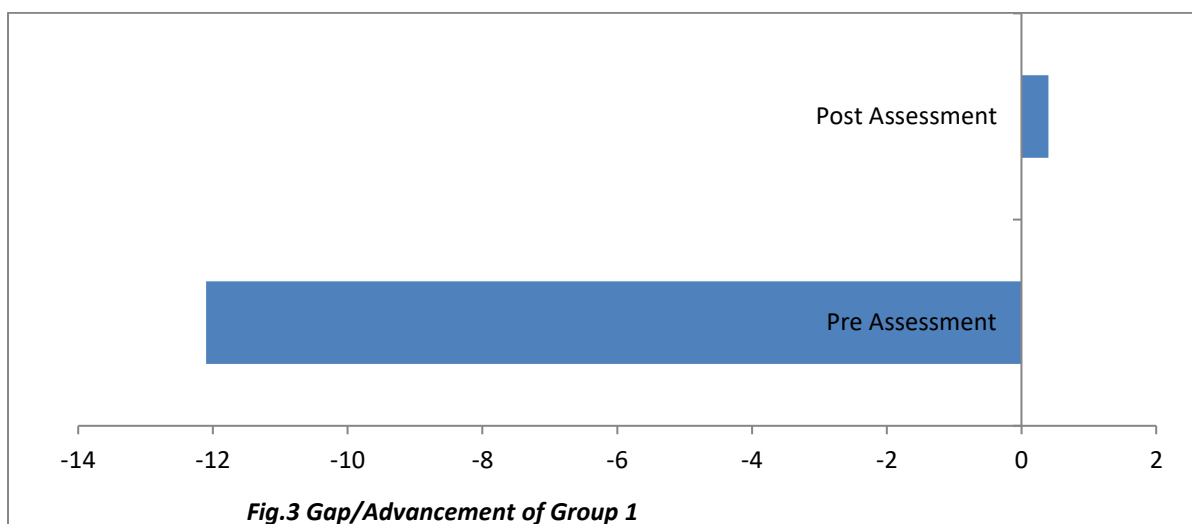
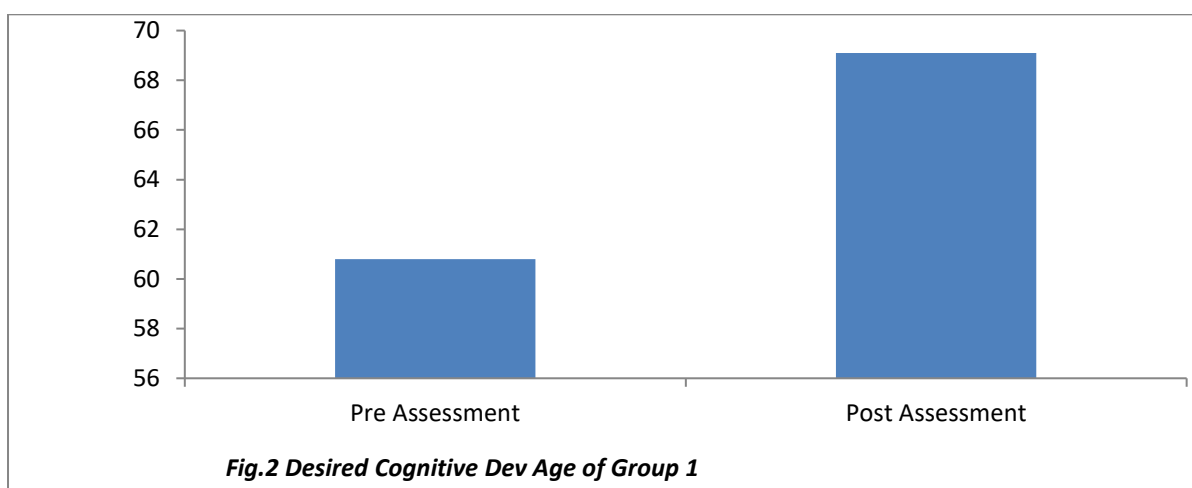
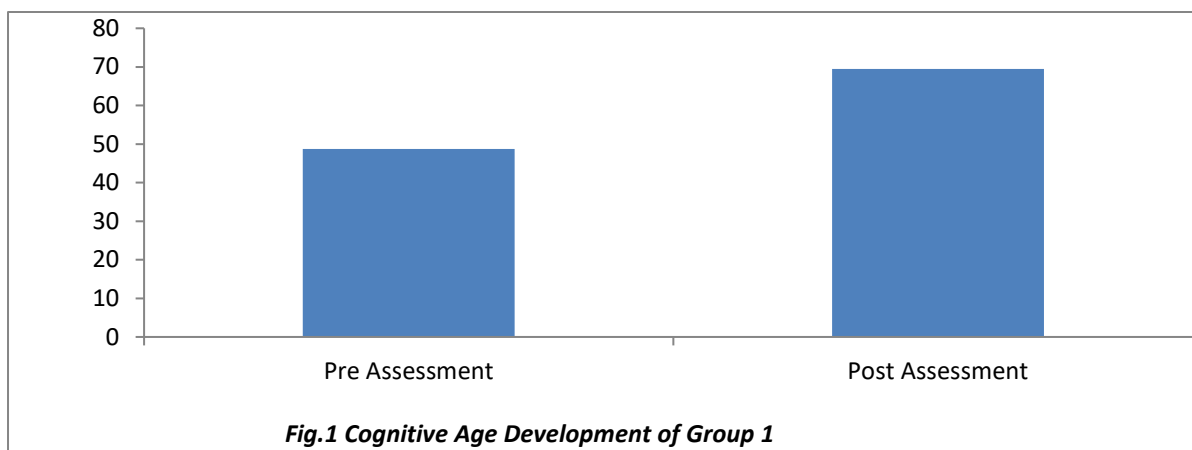
Average Age	Pre Assessment	Post Assessment
Age (in months)	51.6	61.6

As clearly seen from table 1, in case of group 1, the average age of respondents was 51 months at the time of pre assessment while the time of post assessment age of all the respondents was calculated to be 61 months. However, in case of the respondents in group 2, the average age at the time of pre assessment was found to be 50 1.6 months while at the time of post assessment this age was 61.6 months as seen in table 2.

Table 3 Gap/Advancement in Cognitive Age Development of Group 1 (Experimental Group) n=489

Chronological Age	Cognitive Dev Age	Desired Cognitive Dev Age	Gap/Advancement
Pre Assessment	48.7	60.8	-12.1
Post Assessment	69.5	69.1	0.4

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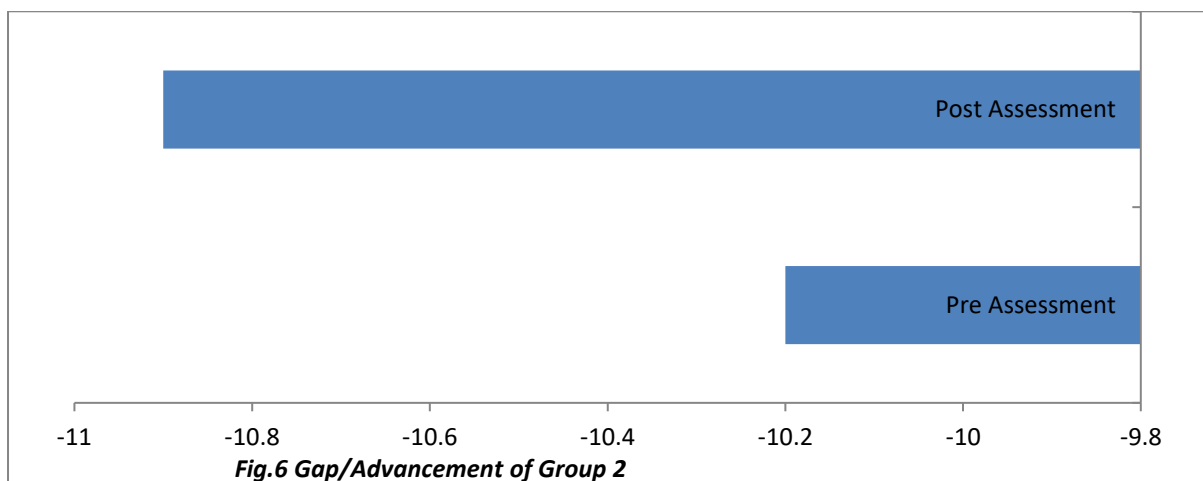
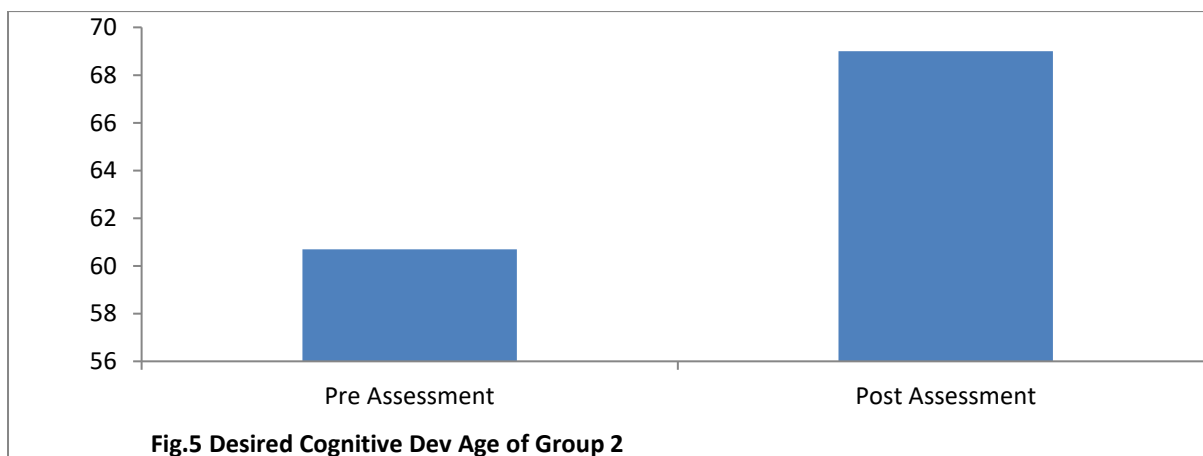
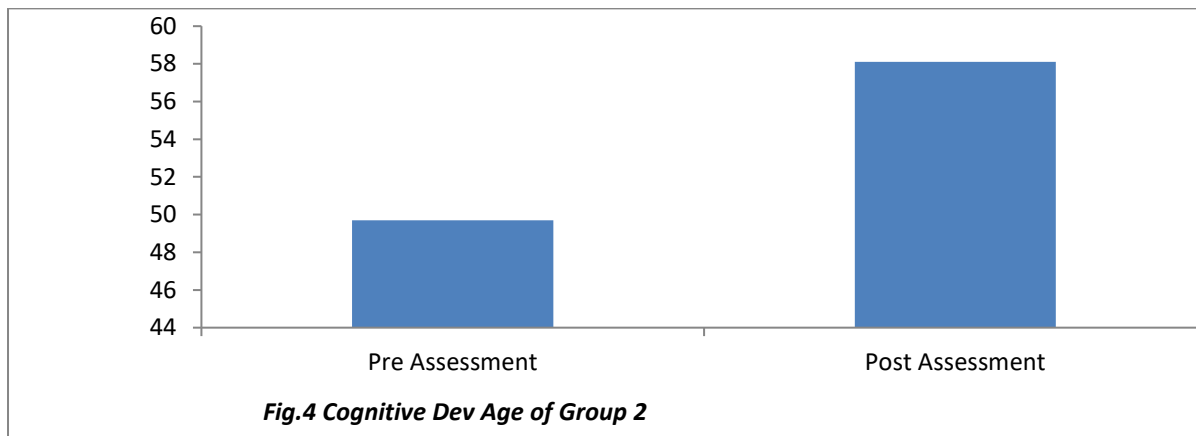
There were 489 respondents in the experimental group. From table 3 it can be clearly observed that the average cognitive development age of respondents in group 1, which was the experimental group, was 48.7 months at the time of pre assessment. In terms of the desired cognitive development age, this group was traced at 60.8 months at the time of pre assessment, while at the time of post assessment, the desired cognitive development age was

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calculated to be 69.1 months. Hence it was clear that at the time of pre assessment there was a gap of 12.1 while at the time of post assessment there was an advancement of 0.4 months

Table 4 Gap/Advancement in Cognitive Age Development of Group 2 (Control Group) n=476

Chronological Age	Cognitive Dev Age	Desired Cognitive Dev Age	Gap/Advancement
Pre Assessment	49.7	60.7	-10.2
Post Assessment	58.1	69	-10.9

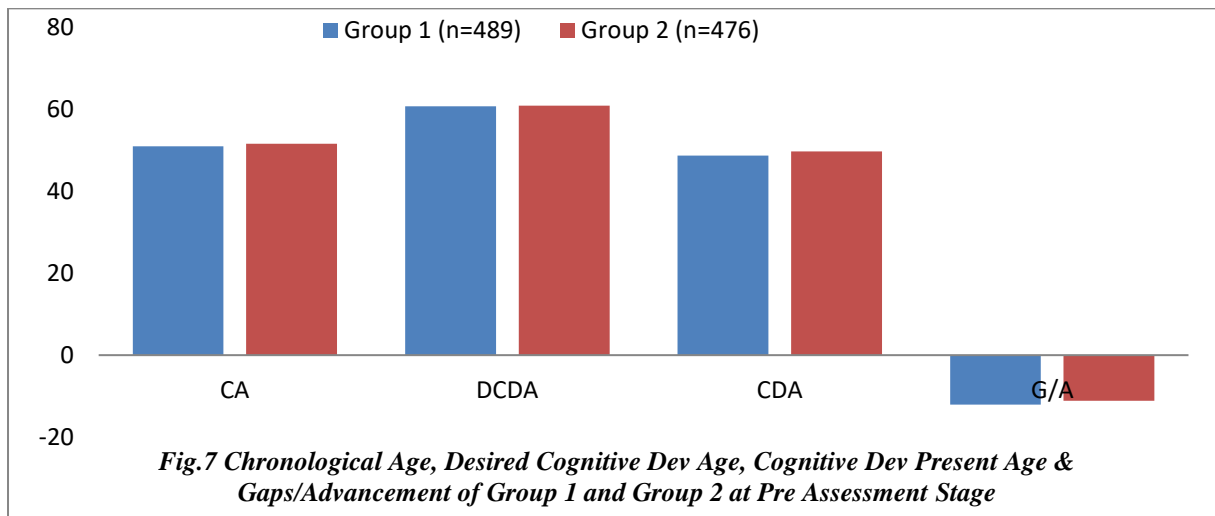


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There were 476 respondents in the control group, which was termed as group 2. The cognitive development age of respondents in this group, at an average was found to be 49.7 months at the time of pre assessment which became 58.1 months at the time of post assessment. The desired cognitive development age was 60.7 months initially which increased to 69 months at the time of post assessment. So it was witnessed that the respondents in this group lagged behind the desired cognitive development age by 10.2 months the time of pre assessment and at the time of post assessment, this gap further increased by 0.7 months, calculating it to be a total gap of 10.9 months.

Table 5 Chronological Age, Desired Cognitive Dev Age, Cognitive Dev Present Age & Gaps/Advancement of Group 1 and Group 2 at Pre Assessment Stage

Pre Assessment	Group 1 (n=489)	Group 2 (n=476)
Chronological Age	51	51.6
Desired Cognitive Dev Age	60.8	60.9
Cognitive Dev Age	48.7	49.76
Gap/Advancement	-12.1	-11.14

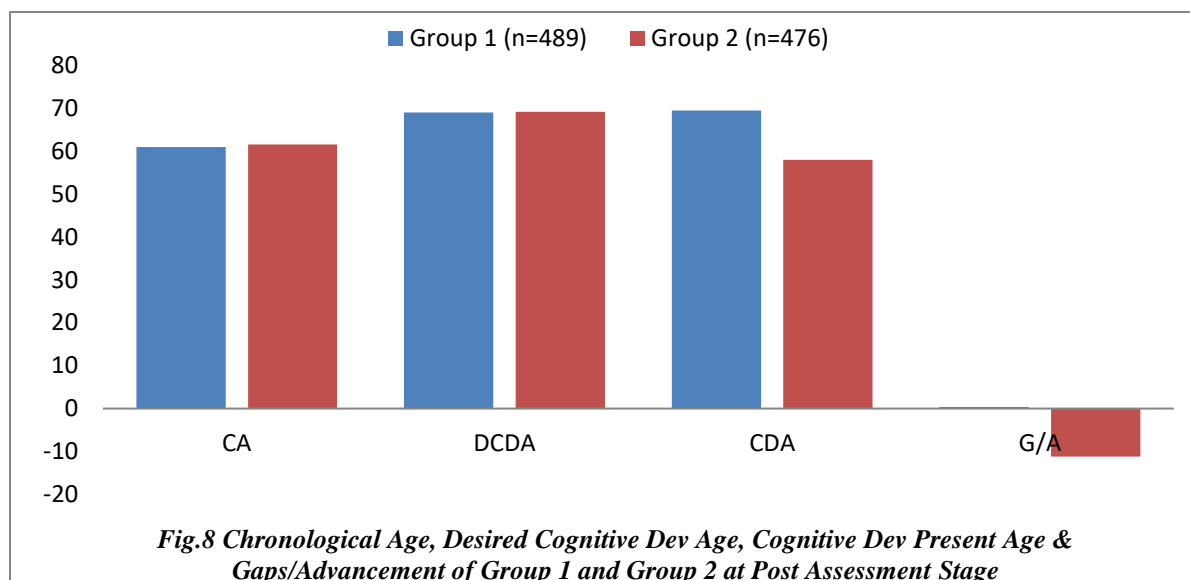


It can be clearly deduced from table 5 that at the time of pre assessment there was a difference of 0.6 months in the chronological age between respondents of group 1 and group 2, the respondents of group 2 having a higher one. Consequently, the respondents in group 2 had the desired cognitive development age higher by 0.1 month. Moreover, the cognitive development age was also higher by 1.06 months in case of group 2. Besides the gap was 12.1 months in the cognitive development age of respondents in group 1 where as in case of respondents of group 2 this gap was 11.14 months.

Table 6 Chronological Age, Desired Cognitive Dev Age, Cognitive Dev Present Age & Gaps/Advancement of Group 1 and Group 2 at Post Assessment Stage

Post Assessment	Group 1 (n=489)	Group 2 (n=476)
Chronological Age	61	61.6
Desired Cognitive Dev Age	69.1	69.2
Cognitive Dev Age	69.5	58
Gap/Advancement	0.4	-11.2

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Further, it can be observed evidently from table 6 that at the time of Post assessment there was 0.6 months' difference in the chronological age between respondents of group 1 and group 2, the respondents of group 2 having a higher one. Consequently, the respondents in group 2 had the desired cognitive development age higher by 0.1 month. Unlike the pre assessment, the cognitive development age became higher in case of group 1 at this stage. The cognitive development age of respondents in group 2 remained 58 months whereas among their counterparts the public and development age soared significantly to 69.5 months. In the same lines, the gap was found to be 11.2 months in case of group 2 whereas in case of group 1 there was a significant change. There was an advancement of 0.4 months in the cognitive development age among the respondents of group 1.

CONCLUSION

It is clear that the respondents in the experimental group 1 having access to 'Unlock Junior' platform excelled in cognitive development defining advancement in the same, whereas their counterparts lagged behind. It is therefore witnessed that 'Unlock Junior' aids in filling the cognitive gaps at the crucial stage that further lays the strong foundation for success in educational development, intellectual development, physical intelligence, social intelligence and emotional intelligence, which eventually enhances cognitive development age of the users.

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Conflict of Interest

Authors declare non conflict of interest in terms of the present research study carried to ascertain a home based fundamental multiple intelligence skill based intervention for children at elementary level.

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