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"Street Smart iclass Programme-A Unique Classroom based on Cognitive Science Education Technology to target the certainty of children's present and future by reordering the cognitive abilities to the desired levels"

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ABSTRACT

Street Smart iclass programme is an innovative iclass programme. It is a multiple intelligence classroom based training program for from 7-11 years of age. It enhances the overall character and the personality of the child leading him grooming and flourishing at his own pace towards success. The in hand research study was designed to enhance the learning process, cognitive abilities & personality of the students. The study was conducted in Chandigarh, Mohali and Panchkula on 230 students between 7-11 years of age. It was witnessed that learning among children can improve drastically if they are provided required training as per their learning style. An extremely significant drift towards higher level of Cognitive Abilities was recorded after the completion of Street Smart iclass Programme

Keywords-
* Street Smart
* i class
* Character
* Personality

INTRODUCTION

Street Smart iclass programme includes Brain Yog, Cartooning and Animation, General Knowledge, Speed Math, Linguistic Activities, Manners and Etiquettes, Memory Development and Origami. Street Smart – iclass programme is a multiple intelligence classroom based training program for 7-11 years of age. This 104-hour unique programme is specifically framed for weekend sessions; 2 hours/session, stretching it for a year. It enhances the overall personality of the child ,leading him, grooming and flourishing at his own pace towards success.

Brain Yog refers to the union of the individual self with transcendental self. It helps in gentle and automatic massaging of internal organs and thus helps in enhancing functioning of digestive system, circulatory system, respiratory system, endocrine system, nervous system, and excretory system. Yog, which is a way of life, is characterized by balance, health, harmony and bliss. By practicing yog, students are supposed to reach a state of mental equanimity, where responses to favorable or unfavorable external events are well under their control, and responses are moderate in intensity. The science of yog is a powerful stream of

knowledge, which enables the practitioners to achieve radiant physical health, serene mind, continues spiritual uplift, and creates the ability for harmonious social living. ***Hastamudra Asanas and Pranayama*** improves academics performance. ***Hatha*** yog practices, like asanas i.e. postures, pranayama i.e. breathing practice intended to influence vital forces, Yog and meditation help to create positive effects. The processing of sensory information at the thalamic level stimulated by practice of pranayam and meditation. (Telles et al, 1992 Telles and Desiraju, 1993; Telles et al, 1994). Six months of yogic practices brings a feeling of well-being in body weight, increased vital capacity and acceleration in endocrinal functions, improvement in nervous response and controlling headache, insomnia and nervousness (Udupa et al, 2001). It enhances the brain's ability to change, structurally and functionally, on the basis of environmental input. For much of the last century, scientists believed that the brain essentially stopped changing after adulthood. But research by University of Wisconsin neuroscientist Richard Davidson has shown that experienced meditators exhibit high levels of gamma wave activity and display an ability to not get stuck on a particular stimulus, i.e, they're automatically able to control their thoughts and reactiveness. A 2005 study on students who meditated a mere 15 minutes a day showed that they had thicker cortical walls than non-meditators. Their brains were aging at a slower rate. Cortical thickness is also associated with decision making, attention and memory. In a 2006 study, students were asked to either sleep, meditate or watch TV. They were then tested on their alertness by being asked to hit a button every time a light flashed on a screen. Those who performed yog regularly did better than the 'nappers' and TV watchers -- by a whole 15 percent. Academic achievement is an attained ability or degree of competence in school task, usually measured by standardized tests and expressed in grades or units based on norms derived from a vide sampling of the pupil's performance. Studies reveal that even low or moderate levels of stress can interfere with task performance. Cognitive reactions of stress result in the inability to concentrate. Mental health is a state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to the community. It can also be defined as a state of emotional and psychological wellbeing in which an individual is able to use his or her cognitive and emotional capabilities, function in society, and meet the ordinary demands of everyday life. Cognitive performance refers to a person's mental process, including memory, attention, producing and understanding language, learning, problem solving, reasoning, and decision making.

Manners and Etiquettes

Manners are universal. Teaching our children good manners at an early age may solve many problems down the road. Manners, proper etiquette some would say, may be one of the top lessons a child needs to learn. Every society throughout the world has a code of conduct by which standards are set for what is considered to be acceptable behavior. Research has shown children are most receptive to learning manners when taught at a young age. They are more apt. to have better reading skills and overall academic success as a result. Furthermore, it is believed possessing good manners will help teens make better choices when they are faced with negative peer pressure. Additionally, when children and teens understand and implement acceptable behavior, it helps to control the incidences of bullying. The lessons children learn early will stay with them and become life skills just like reading, writing and arithmetic. Manners are empowering and are an integral part of success. Having good manners helps an individual build confidence, increase self esteem, and improve communication skills. Etiquette and good manners help people make friends more easily and create positive impressions on others. We only have one chance to make a first impression! Manners provide an extra edge that will make the difference between you and the other person. Additionally, etiquette and protocol provide the guidelines for individuals to manage social and business environments effectively. Equally important, manners create civility which helps people resolve conflict and confrontation without aggression. Practicing good manners earns respect as well as demonstrates self respect.

Linguistic Activities

Language development is an integral part of the personality. It is not just a skill that can be taught; it is based on life experiences. One cannot talk about what one has never experienced. Small children want to touch, smell, taste and see. They use their senses to obtain many impressions. The adults automatically match a

young child's activities with the appropriate words. A child who has little to touch and who has little contact, usually also has a small vocabulary. Built upon the experiences, the child forms an image of the object in his mind. The word is then attached to the image. And so language development moves from concrete experiences to abstract thought. The mind absorbs the words without conscious learning. Such sensitivity is unique and slowly diminishes. However, then the reasoning mind takes over, the child has gained life experiences. He can start to think more abstractly, develop abstract skills such as reading and abstract thinking in the form of imagination. Therefore also imagination is related to early experiences. Children need to spend time with adults and older children so that they absorb and learn to converse, to ask and to listen. This dance of language develops through practice and stimulation. Individualized education allows teachers to sit and listen to the child. They make eye contact and respond after a question has been made. They encourage uninterrupted speech and to not repeat their message unnecessarily. This contact stimulates language acquisition and also helps the child to tune into language. They know that when something is being said it is important, so it becomes necessary to listen.

Cartooning and Animation

The world is experiencing communication revolution and communication explosion. One's ability to influence others is closely linked with his ability to communicate his ideas. Cartooning and Animation influences functioning in varied ways. Learning and education, leisure and entertainment, household routines, work from home, personal development, extended family communication, e-commerce and civic involvement are possible affected domains. Cartooning and Animation has shaped culture and social system. Major changes in children's communicative development occur in at least three domains: the linguistic, the social, and cognitive. Cartooning and Animation is the art of creating moving images via the use of computers. It is a subfield of computer graphics and Cartooning and Animation. The child's orientation during childhood will determine his behavior pattern as an adult and will, therefore, shape the character of the future society. It is indicated that viewing meaningful and purposive Cartooning and Animation program is linked to better academic performance. Childhood as a stage in the human life cycle encompasses a period of phenomenal biological, physiological, psychological, and social growth. Between infancy and the beginning of adolescence, about age twelve, the human acquires major life skills – the ability to walk, talk, read, care for oneself, and come to know the world around him or her. During this time, the child first encounters the major agents of socialization: the family, peers, schools, and media. Today, visual media which has the power to reach such a vast number of people at one time can help tremendously in fostering the development of desirable values and habits in our country's children. Cartooning and Animation enhances cognitive, social and health related development.

Memory Development

Memory is a wonderful trait of human beings. Scientists are unlocking the secrets to enhancing memory. Memory is extremely important to educators, not only for them personally as they age and worry about failing memory, but, most important, for the role that memory plays in the teaching/learning process. Memory, as a concept, often is relegated to a minimal role. As noted by Caine and Caine (1997), "Many of us associate the word memory with the recall of specific dates or facts or lists of information and sets of instructions, requiring memorization and effort". Memory, however, goes beyond this one-dimensional aspect of learning and, rather, focuses on attending, learning, linking, remembering, and using the thousand pieces of knowledge and skills we encounter constantly. For educators, memory is the only evidence that something or anything has been learned. Contrary to popular belief, people retain a large portion of what they learn in school (Ormrod, 1998). Long-term retention of information learned in school varies a great deal according to the type of information, however. Concepts usually are retained much longer than names (Conway, Cohen, & Stanhope, 1991). Retention drops rapidly in the first few weeks after instruction and then levels off (Bahrick & Hall, 1991). Whatever the students have retained about 12 to 24 weeks after instruction, they may retain forever (Slavin, 1997). Several factors contribute to long-term retention. A major factor is the extent to which students learned the material in the first place (Bahrick & Hall, 1991). The effects of ability on retention are unclear (Semb & Ellis, 1994). Higher-ability students score better at the end of a course but often lose the same percentage of what they had learned as low-ability students do.

Instructional strategies that involve students actively in lessons contribute to their long-term retention (MacKenzie & White, 1982). Levels-of-processing theories hold that the more you attend to the details of a stimulus, the more mental processing you must do with a stimulus and the more likely you are to remember it (Bower & Karlin, 1974).

General knowledge

General knowledge is something that really helps us to grow both on personal as well as academic level. It narrows our sense of perceiving the world, understands, and analyzes the situations better as one would without proper knowledge. It is common sense to have a good grip over general knowledge and current affairs. Students in school and college are in many ways, expected to know what is making the world go around. A high level of general knowledge will passively yet directly affect the grades in school. General knowledge helps to take better decisions in life. The importance of general knowledge and current affair spans beyond being able to shoot off answers or start conversations. General knowledge makes the child street smart and helps him to take well informed decisions.

Speed Math

It is a system of mental calculation and is known to be one of the fastest methods of mental calculation. The system consists of a number of easily memorized patterns that allow one to perform arithmetic computations without the help of pen and paper. Primarily the system focuses on multiplication but with further practice and study child can learn division, addition, subtraction and square root. Speed has a compound effect on learning math. Math is a cumulative subject where new skills and concepts are built on top of old skills and concepts. A student who is not able complete basic operations quickly will struggle when they encounter new and more advanced skills and concepts-fractions, algebra, geometry, etc. Every student has his or her own level of natural math ability and aptitude. Some students have a lower natural math ability than others. Mastering the basics though can give these students speed and confidence that can compensate for their lower natural math ability. Students who have a low natural math ability can excel in elementary and high school mathematics with enough practice. Instead of always being a step behind, they can always be a step ahead. Speed matters in schools. Tests and exams have time limits in high school. A student who works too slowly may not have time to complete tests and exams in university. Working slowly on a test or exam may cause a student to become stressed and panicked that they will not complete the test or exam in time. Not completing a test or exam could dramatically impact a student's marks. Speed gained from practice and mastery can compensate for low natural math ability. A student who is able to complete basic operations quickly and effortlessly will have the foundation necessary to also complete new and unfamiliar problems quickly.

Origami

Origami is the Japanese art of paper folding. Research has shown that paper-folding, particularly in the elementary school years, is a unique and valuable addition to the curriculum. Origami is not only fun, but also an innovative method for developing vital skills. Origami empowers children with choice. Children choose what to make, what kind of paper to use and what color to make it. Once the origami is complete a child has control over it and can choose what to do with it. It is reported that paper-folding is contagious and that a sizable number of students can't sit near paper without folding. Children can create anything through origami – from useful wallets and protection amulets, to cool bugs and cute animals, to toys like shuriken, swords, and tops. One boy even made a Nintendo 3ds which could play any game imaginable (or should it be – only games imaginable?). With so many options available, children can choose something that they want to create. This makes origami more motivating than other by-the-book school activities. Origami builds self-confidence. Mistakes are forgivable as paper can be unfolded and refolded. Completing a project creates a sense of accomplishment and satisfaction. Furthermore, with the finished product at hand, there's a sense of instant gratification. There's no wait for glue, paint or clay to dry. A child can instantly enjoy the fruits of her labors. Perhaps Hagit Shalev of Teragami put it best, "To the unsuspecting child, the transformation of the flat sheet of paper into a three dimensional form, using only two hands, seems almost magical." Origami is an example of "schematic learning through repeatable actions". To be successful, the student must watch

closely and listen carefully to specific instructions and then carry them out with neatness and accuracy. Here is a case where a student's success is imposed by the activity rather than the teacher. Like group singing, hand games, and dancing, the pleasure comes in recreating the result and sharing it with others. For many students, it engenders a patience that leads to pride in one's work, the ability to focus energy, and increased self-esteem. Origami is well-suited to working with a classroom of 30 or more students. In a multi-age setting, paper-folding tends to eliminate the status associated with age differences; younger children are often in a position to teach the older ones, and it provides an activity that works well when teaming different grade levels. Many teachers report that children, who do not "star" in other places, are often quick to learn origami and help their classmates master the steps. Through the actual folding, children use their hands to follow a specific set of steps in sequence, producing a visible result that is at once clever and pleasing. The steps must be performed in a prescribed order to yield a successful outcome - an important lesson not only in math, but in life. Origami can be used for skill development by educators, teachers, Psychologists, Physicians, Parents for educational, developmental and therapeutic aspects. It also aids in fine motor development. Piaget, the renowned child development psychologist, held that "motor activity in the form of skilled movements is vital to the development of intuitive thought and the mental representation of space."

METHOD

The sample was randomly selected from Chandigarh, Mohali and Panchkula. Cognalysis (tool) was used for Testing Cognitive abilities. Cognalysis was administered as per the standard criteria. Test-1 results were analyzed. Following this, subjects were flourished with the Street Smart I class programme. The programme includes Brain Yog, Cartooning and Animation, General Knowledge, Speed Math, Linguistic Activities, Manners and Etiquettes, Memory Development and Origami. It is a training program for 7-11 years of age. The classes were imparted for 104 hours at weekend sessions; 2 hours/session, stretching it for a year.

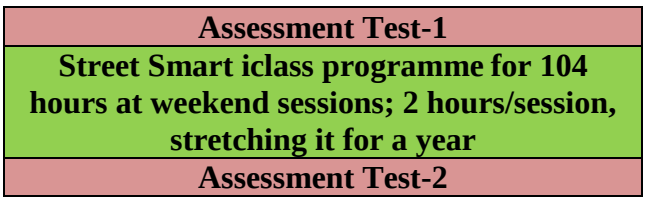

Fig. 1 Methodology

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STATISTICAL ANALYSIS

Once the data was obtained, it was coded, tabulated and analyzed, keeping in mind the objectives of the study. Appropriate statistical tools were used to draw meaningful inferences. The statistical tools used in the present study are given in the table below;

Table 1 Statistical tools used for analysis of data

S.No.	Statistical tools	Formula	Purpose
1.	Mean (x)	$X = \Sigma X/N$ where, X = Variable N = No. of sample	To find out the average scores of variable used in the study.
2	Standard Deviation (S.D.)	$0 = \sqrt{\Sigma} x / N$ Where X = Deviation from actual mean X = mean. X = variable. N = number of samples.	To find out deviation from the mean scores of the variables.
3.	Standard error of mean (S.E)	S.E = 0/n Where 0 = S.D. n= number of observations	To find out the degree to which the mean is affected by the error of measurement and sampling.
4.	't' test	$t = (x1-x2) / S \sqrt{n1n2/n1 + n2}$ where x1 = mean of 1st sample x2 = mean of second sample S = combine S.D. n1 = number of observations in 1st sample. n2 = number of observations in 2nd sample	To compare the average score of any two groups or to find out whether the mean of the two samples vary significantly from each other.

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RESULTS AND DISCUSSION

Table 2: No of Subjects as per IQ Range in Test-1 and Test-2

IQ	Below 60	60-70	70-89	90-111	111-120	120-150	150-180	180+
Test 1	50	44	69	59	4	4	0	0
Test 2	0	18	39	94	25	34	18	2

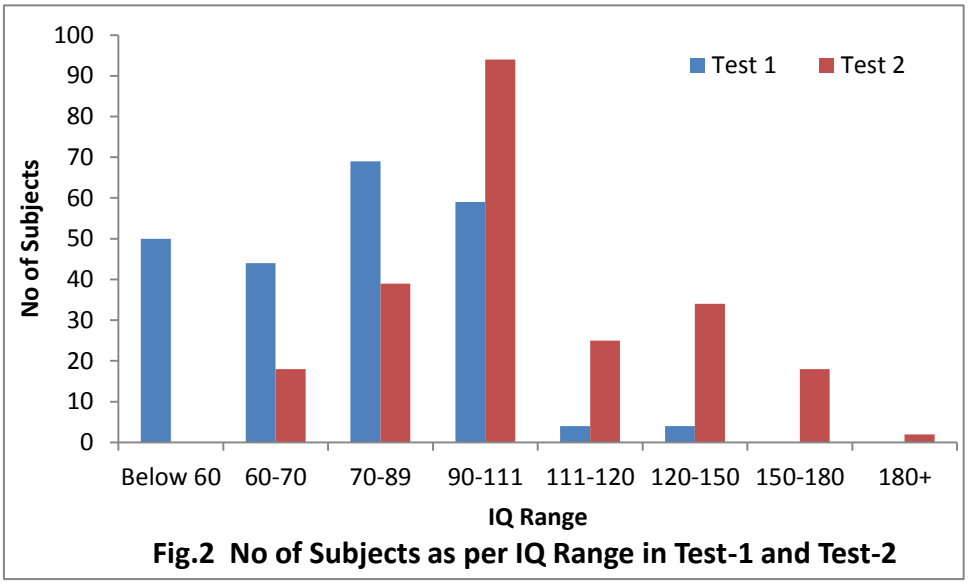

Fig.2 No of Subjects as per IQ Range in Test-1 and Test-2

Table 3: No of Subjects as per Focus Factor Range in Test-1 and Test-2

Focus Factor	Below 30	31-50	51-75	76-90	91-120	121-150	150+
Test 1	23	88	99	19	1	0	0
Test 2	5	2	134	70	14	3	2

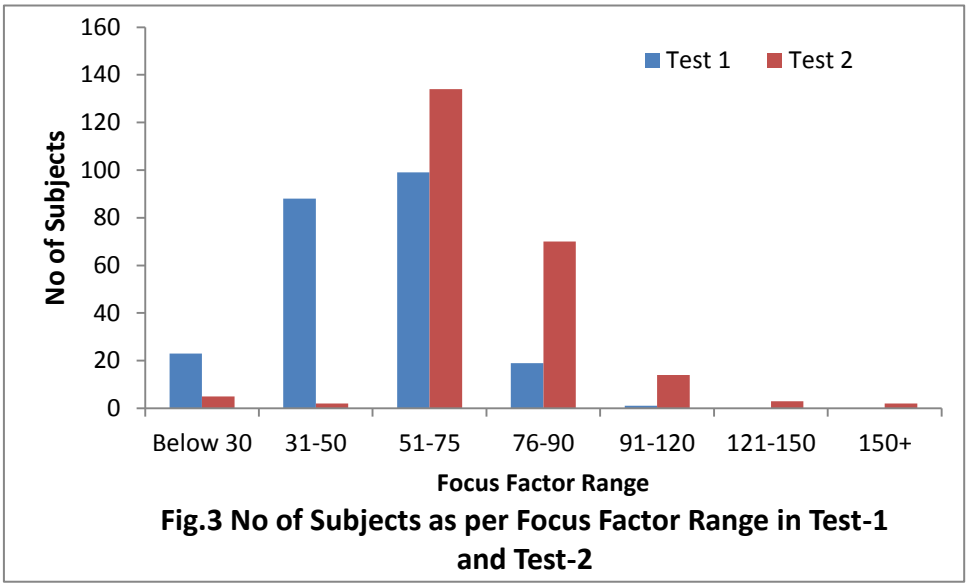

Fig.3 No of Subjects as per Focus Factor Range in Test-1 and Test-2

Table 4: No of Subjects as per DMA Range in Test-1 and Test-2

DMA	Below 0.35	0.36-0.5	0.51-0.65	0.66-0.80	0.81-1.0	1.1-1.4	1.5-1.7	1.7 +

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Test 1	133	74	12	8	3	0	0	0
Test 2	16	94	96	4	8	7	5	0

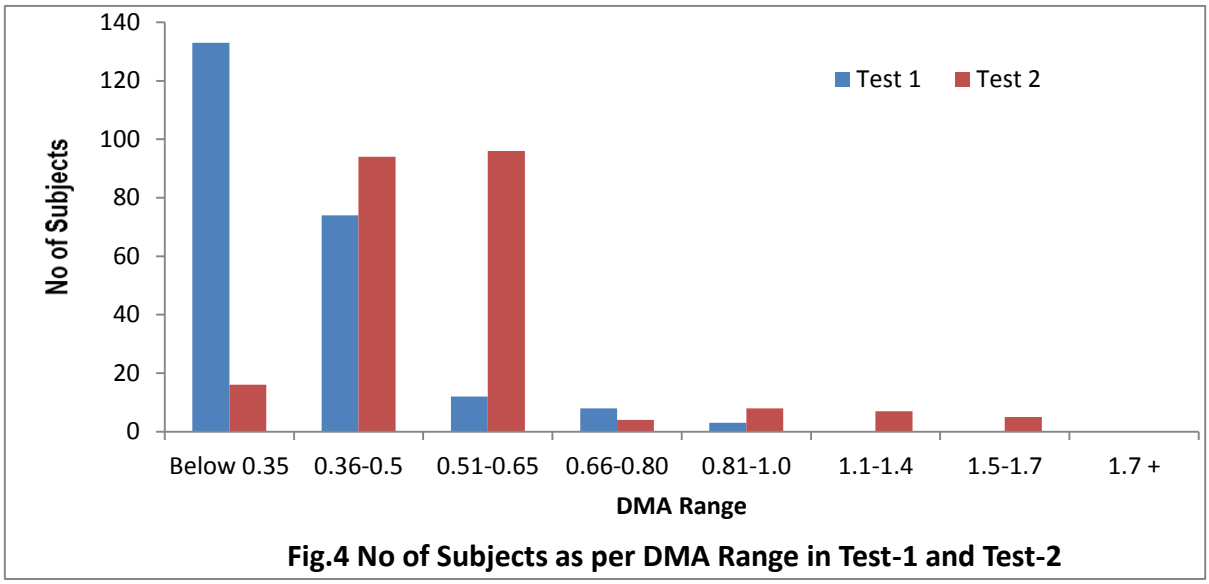

Fig.4 No of Subjects as per DMA Range in Test-1 and Test-2

Table 5: No of Subjects as per CQ Range in Test-1 and Test-2

CQ	Below0.2	0.2-0.3	0.31-0.4	0.41-0.6	0.61-0.7	0.71-0.8	0.81-0.9	Above 0.9
Test 1	49	119	24	18	14	6	0	0
Test 2		16	91	38	41	26	14	4

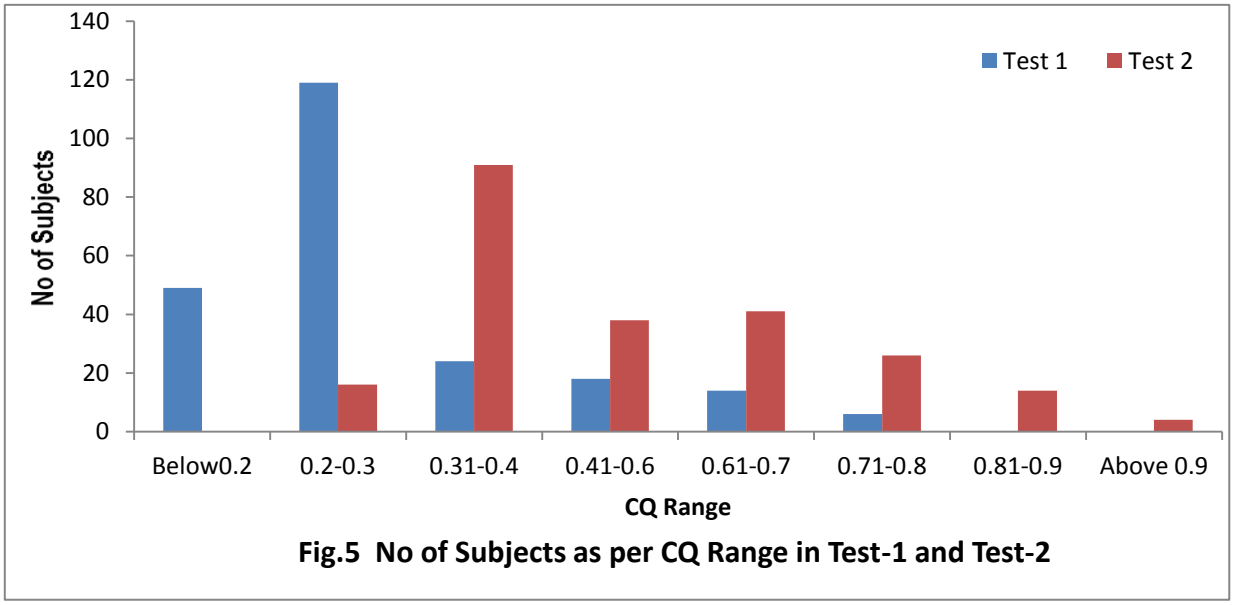

Fig.5 No of Subjects as per CQ Range in Test-1 and Test-2

Table 6: No of Subjects with IQ, FF, DMA & CQ >Desired Level in Test-1 & Test-2

Desired Level	Test 1	Test 2
IQ	4	54
Focus Factor	1	19
DMA	3	20
CQ	20	85

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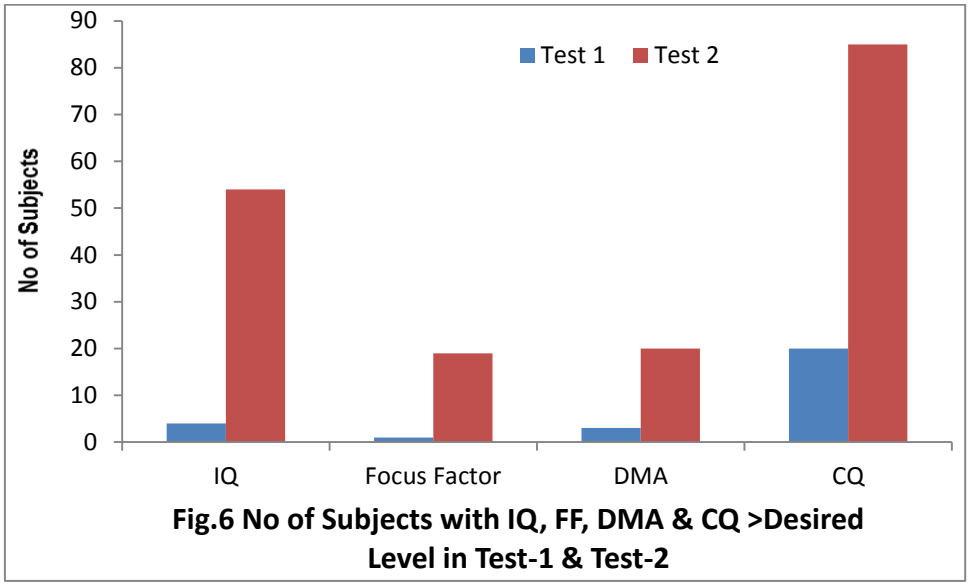

Fig.6 No of Subjects with IQ, FF, DMA & CQ >Desired Level in Test-1 & Test-2

Table 7: Mean, Standard deviation, standard error, t-values and level of Significance of IQ of subjects between Test 1 and Test 2

Test	Mean	SD	SEM	t- value	p-value	Level of Significance
Test-1	74	15.65	1.03	21.1614	<0.0001	Extremely Statistically Significant
Test-2	102	12.56	0.8282			

Table 8: Mean, Standard deviation, standard error, t-values and level of Significance of FF of subjects between Test 1 and Test 2

Test	Mean	SD	SEM	t- value	p-value	Level of Significance
Test-1	49	9.8	0.64	27.6293	<0.0001	Extremely Statistically Significant
Test-2	70.5	6.5	0.42			

Table 9: Mean, Standard deviation, standard error, t-values and level of Significance of DMA of subjects between Test 1 and Test 2

Test	Mean	SD	SEM	t- value	p-value	Level of Significance
Test-1	0.3	0.05	0.0033	42.8952	<0.0001	Extremely Statistically Significant
Test-2	0.5	0.05	0.0033			

Table 10: Mean, Standard deviation, standard error, t-values and level of Significance of CQ of subjects between Test 1 and Test 2

Test	Mean	SD	SEM	t- value	p-value	Level of Significance

Test-1	0.32	0.091	0.006	3.9627	<0.0001	Extremely Statistically Significant
Test-2	0.52	0.76	0.05011			

DISCUSSION

It is evidently clear that Street Smart i-Class is a unique and scientific process to keep a child 'Stay Smart Forever'. An extremely significant drift towards higher level of Cognitive Abilities was recorded after the completion of the said programme. A highly significant swing was noticed in IQ, FF, DMA & CQ of subjects after completion of the said programme. It can further be noticed that no reverse trend erupted. It can thus be concluded that, after the successful completion of i class programme, it was notified that the Cognitive abilities increased significantly, subsequently their IQ, FF, DMA & CQ inclined as well.

CONCLUSION

Learning process, cognitive abilities & personality of the students can improve drastically if they are provided required training as per their learning style. An extremely significant drift towards higher level of Cognitive Abilities was recorded after the completion of Street Smart iclass Programme-A Unique Classroom based on Cognitive Science Education Technology. Learning process of students depend on their cognitive abilities. We can measure the cognitive abilities of students with the help of cognitive ability tests. The current level of development can be measured & reordered to achieve desired levels. To do this, we need to assess their individual learning style & gifted ability so that we can design a task based time bound customized training solution for them. There are 2 types of factors that can help design success and enhance the learning process in students. These factors are further categorized as artificial factors & natural factors. By artificial factors we mean those core cognitive ability factors which can be reordered when identified at an early stage. Natural factors are those factors that have a strong influence in this process like gifted ability, learning style and the scale of multiple intelligences. When education is delivered keeping in mind the learning style of a student and the curriculum is customized around the gifted ability, it is possible to reorder the core cognitive ability factors.

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