

Participatory and Competitive Research to Improve Performance of Children: A Window to Excellence

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ABSTRACT

The perspective towards education has been changing, widening its scope through literacy to self-sustaining. It has become a vital necessity for parents and teachers to capacitate children for a successful and satisfactory living. They must learn compete in a healthy manner and develop problem solving skills. The parent-child bonding becomes crucial at this tender age. Involvement of both the parents can boost the pace of development among children. Words of appreciation and parental involvement their day-to-day activities can do wonders to develop students' confidence level. The study was conducted on a total sample of 600 respondents. There were 200 primary respondents whose mothers (200) and fathers (200) were also included for fetching the data. The tools used included structured interviews and questionnaires to get an insight into the desired database. The study was conducted in three phases. Data were collected from students as well as their parents. Besides, pre and post evaluation in terms of academics was also taken up. For comparative purposes, the sample was divided into experimental and control groups. It was found that the participation in competitive activities increases the child's performance, self-confidence and saves children from bad effects of excessive television and mobile phones. It keeps them active, busy and engaged in positive activities. It also strengthens the parent-child bonding and develops hidden talent among the children. The enhancement of desired behavior can be observed when the children are exposed to exciting and constructive activities.

Keywords: *Competition, Problem solving, Parent-child bonding, Confidence, Talent, Desired behavior*

Competitions have always been an integral part of students' academic and non-academic fields. It is quite important to understand the significance of the right dimensions of competition in order to retain its essence. An undesired element and even the slightest deviation may drain the worth of competition; Intellithon is a unique competition based activity platform for children. It is a form of experiential learning and leads to learning by doing. Every month, it offers activities in different categories to provide audacious learning

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experiences to children. It improves self-confidence & talent of the children and also develops skills like reading, writing, intelligence quotient, concentration, creativity, and thinking. Such constructive activities keep them away from the bad effects of excessive television and mobile games. Each child is highly creative and has excessive energy. Children need excitement and experiments but lack of such opportunities to explore talent leads to failure in developing their talent. Data is secure as the intellithon platform is using AWS ECS to manage the application. AWS provides several security capabilities and services to increase privacy and control network access. These include network firewalls built into Amazon VPC, and web application firewall capabilities in AWS WAF helps in creating private networks, and control access to instances and applications encryption in transit with TLS across all services. Connectivity options that enable private, or dedicated, connections from office or on-premises environment. The Databases is hosted on MongoDB. MongoDB Atlas encrypts data, both in-transit, and at-rest, and makes it easy to control access with role-based user management. Besides, the approval from users regarding data use was taken. Ginsberg (1994) explained that competitions can improve the quality of education imparted to students. Govindasamy (2001) has also elaborated that indulging in competitive activities encourage students to perform better and in efficient ways. Northcote and Kendle (2001) corroborated these views by suggesting the vitality of competitions among students. Hiltz and Turoff (2005) endorsed that when healthy competitions are encouraged among students, there develops a feeling of pride and achievement after appreciated participation. Karnes and Riley (2005) found that the rewards of competition have a positive impact on achievement and motivation. Studies by Riley and Karnes (2005), Artssed and Tserenjav (2006) and Fernandez et al. (2007) endorsed these findings. Regueras et al. (2008) The Bologna model suggested improving the quality of education and extent of learning by motivating the children to participate in healthy competitions. Cantador and Conde (2010) analyzed the effects of competition in education. They identified the benefits of students' willingness to compete during the learning process. Lin et al. (2010) investigated the features of competitive learning activities to motivate students and improve their academic performance. Riley (2011) conducted a competition for a symbolic value, performed in a short period of time, and characterized by all participants feeling like they have a chance to win. Results revealed that a balance between competition and cooperation was achieved, and the focus shifted onto the learning goals instead of the competition itself. Witt et al. (2011) emphasized the importance of online idea competition. The experimental results showed that the proposed approach not only significantly promoted the flow experience, learning attitudes, learning interest and technology acceptance degree of the students, but also improved their learning achievements in the web-based problem-solving activity. Cantador and Bellogín (2012) found that the competitions in education have been used effectively and that no activity was harmful to the students, independently of their position in the contest ranking. Gutiérrez (2012) suggested that competitions aided in the collaborative learning activities. Robles et al. (2012) and Schweitzer et al. (2012) found the similar results. Shah (2012) The results from this experience suggests that competition can stimulate learning by enhancing student engagement and encouraging student motivation. By harnessing the natural competitive nature of learners, student centred learning can be increased which encourages a more active learning approach. Chen and Chen (2013) found that participation in the competitions enhanced students' learning achievement as well as increased their motivation. Issa et al. (2014) found the similar results. Carpio et al. (2015) found that competitions enriched the educational experience and improved motivation among students, thereby enhancing their academic performance and personal skills as a result of learning through play and

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participation. Hwang and Chang (2016) also suggested that the competition-based approach significantly improved the students' learning interest, and learning attitudes. Zelin (2016) conducted a study and indicated that competitive active learning is beneficial, leading to active student participation and improved motivation.

METHODOLOGY

The in-hand study was a longitudinal study comprising of an enriched database where a combination of primary and secondary data was used to get the augmented and authentic outcomes in terms of qualitative as well as quantitative data. It has become inevitably desirable to analyze the primary data and cumulate it through the secondary data to get a wider insight into the realistic review. With the mentioned approach, a platform named 'Intellithon' was created which is a unique competition and activity platform for children. Children can participate and compete in thirty different activities every month, from the comfort of their homes. They can access the progress with every activity on their personal dashboard. Children stay active, engaged and motivated. Moreover, the child stays away from the bad effects of excessive television and mobile games. It helps in developing talent and self-confidence. It also improves skills like reading, writing, vocabulary, verbal, intelligence, focus, creativity and thinking. Participants have to submit their entries based on topics in the desired format.

Sampling

The sample was selected purposefully to ensure the desired availability and the extent of responses. The sample included 200 students, 200 mothers, and 200 fathers. Primary subjects were the students of nursery to 5th grade.

The study was conducted in three phases:

Phase-1:

Pre-Evaluation: All the students (n=200) i.e. the primary subjects were given academic tests of English, Math, GK, and EVS/Science. These tests were termed as School Test-1. Mothers (n=200) were interviewed through a questionnaire to get an insight into their observation, estimation, and perception regarding the child. The questionnaire was designed to get the maximum possible information about the attitude, behavior and personality traits of their child. The information regarding the problems and issues faced by them was also considered. Likewise, fathers (n=200) were interviewed through a similar questionnaire. Students were also interviewed through a questionnaire to seek relevant information.

Phase-2:

Categorization of subjects into experimental and control groups: The primary subjects and their parents were categorized randomly into experimental and control groups. The primary respondents in the experimental group were given access to participate in the competitions by explaining the entire process of registration and participation. However, no such access or information was passed onto their control counterparts for whom the entire study had been no different from a survey.

Phase-3:

Participation in (Experimental Group): The competition platform gave the children an opportunity to participate and compete in thirty different activities every month from the comfort of their home. The categories were quite comprehensive and the topics were customized according to the grade of students. They had to make and create the activities as

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on paper or as desired and later parents had to upload the activity in the required format through the platform or the application.

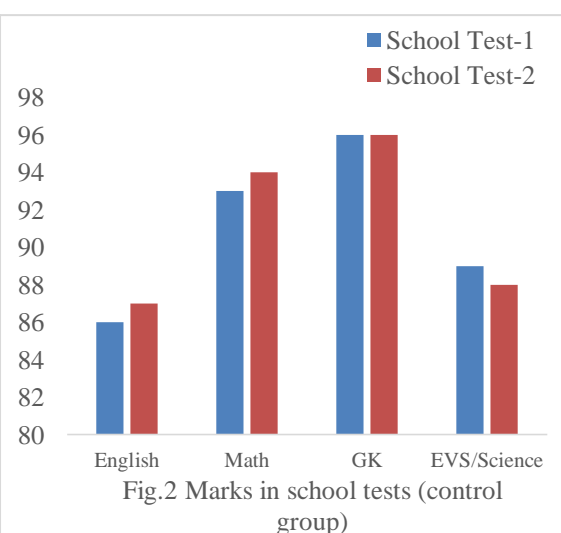
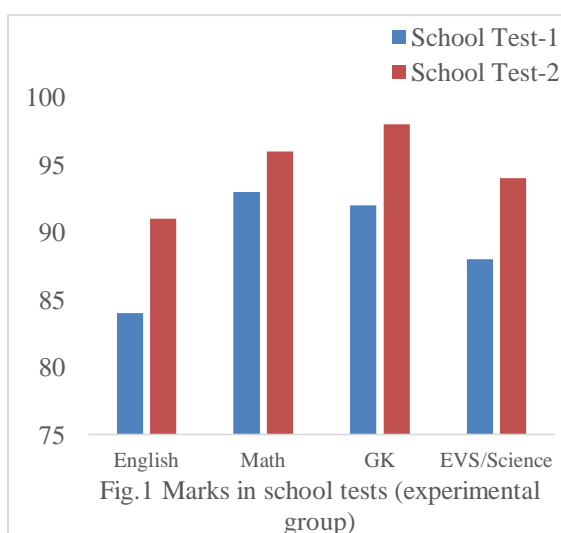
Phase-4:

Post-Evaluation: All the primary subjects were again given academic tests of English, Math, GK, and EVS/Science. These tests were termed as School Test-2. Students, mothers, and fathers were interviewed through a similar questionnaire to get an insight into their observation, estimation and perception regarding the child at this stage.

RESULTS

Table 1: Children performance before and after participation (n=200)

Subject	Experimental Group (n=100)		Control Group (n=100)	
	School Test-1	School Test-2	School Test-1	School Test-2
English	84	91	86	87
Math	93	96	93	94
GK	92	98	96	96
EVS/Science	88	94	89	88



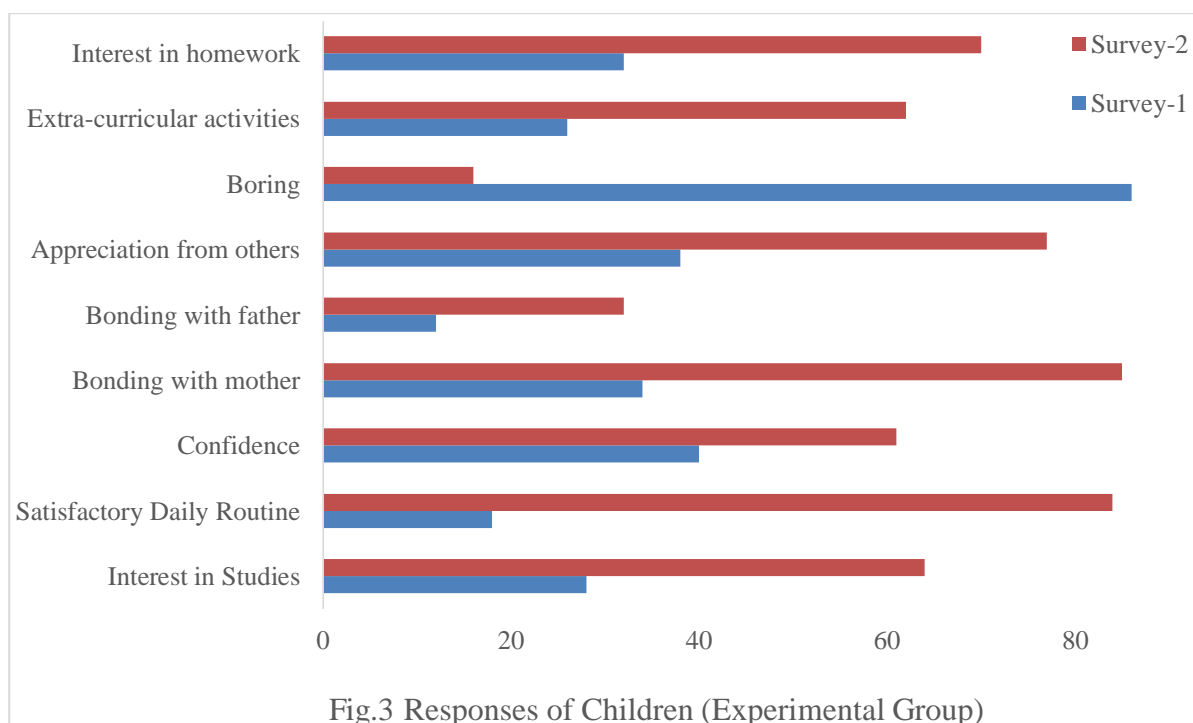
In the case of the experimental group, the grades of the students increased by 7% in English, 3% in Math, 6% in GK and EVS/Science. In contrast, insignificant changes were witnessed in the control group.

Table 2: Children survey before and after participation (n=200)

Responses of Children		Experimental Group (n=100)		Control Group (n=100)	
		Survey-1	Survey-2	Survey-1	Survey-2
Interest in Studies	Yes	28	64	29	29
	No	72	36	71	71
Daily Routine	Satisfied	18	84	17	18
	Dissatisfied	82	16	83	82
Confidence	Confident	40	61	41	40

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Responses of Children		Experimental Group (n=100)		Control Group (n=100)	
		Survey-1	Survey-2	Survey-1	Survey-2
Bonding with mother	Not Confident	60	39	59	60
	Strong	34	85	35	35
	Poor	66	15	65	65
Bonding with father	Strong	12	32	12	12
	Poor	88	68	88	88
Appreciation from others	Yes	38	77	38	36
	No	62	23	62	64
Boring	Yes	86	16	88	88
	No	14	84	12	12
Participation in extra-curricular activities	Yes	26	62	26	26
	No	74	38	74	74
Interest in homework	Yes	32	70	33	34
	No	68	30	67	66



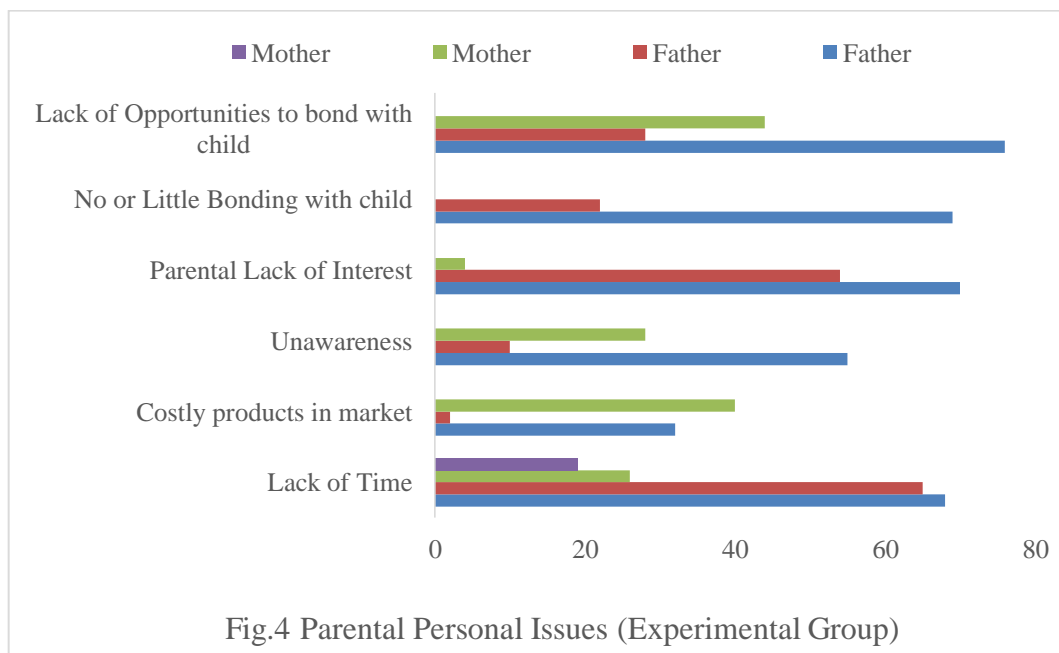
When the children were interviewed at the initial stage, in the experimental group, merely 24% of them reported having an interest in studies. However, this figure rose to 64% after the participation in competitions. Fairly 18% of student respondents confirmed that they were satisfied with their daily routine in survey 1 but later through survey 2, it was reported that as high as 85% of respondents were satisfied. In terms of confidence level, 40% primary respondents reported that they were self-confident but after the active participation, 61% were confident about themselves. 34% of students shared a strong bonding with mothers which later rose to 85%, in case of bonding with fathers, the figure was surprisingly as low as

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12% which later inclined to 32%. Only 38% of children reported being appreciated by the elders and this figure double folded after the survey. 86% of students informed regarding their boring routine in the first survey, but later only 16% of them reported the same. 26% of students reported that they actively participated in the extra-curricular activities in school while this figure rose to 62% in the second survey. 32% of students replied that they liked doing their home-work in the initial survey as compared to the second survey where this figure surged to 70% of students who liked doing their home-work and assignments. No such differences were observed in case of the control group.

Table 3: Parental survey before and after participation- Parental Issues (n=400)

Parental Personal Issues	Experimental Group (n=200)				Control Group (n=200)			
	Father (n=100)		Mother (n=100)		Father (n=100)		Mother (n=100)	
Lack of Time	68	65	26	19	67	67	26	19
Costly products in market	32	2	40	0	31	31	43	44
Unawareness	55	10	28	0	57	57	29	29
Parental Lack of Interest	70	54	4	0	71	71	6	6
No or Little Bonding with child	69	22	0	0	68	69	0	0
Lack of Opportunities to bond with child	76	28	44	0	76	78	45	46



Parents were also interviewed to get their respective evaluation for the primary respondents i.e. students. In the experimental group, in the first survey, 68% of fathers replied that they do not get enough time, the figure dipped by 3% in the successive survey. In this regard, 26% of mothers lacked time due to their schedule while this figure dipped to 19% in the second survey. 32% fathers and 40% of mothers believed that the educational products available in the market were costly but during the second survey, this misconception was

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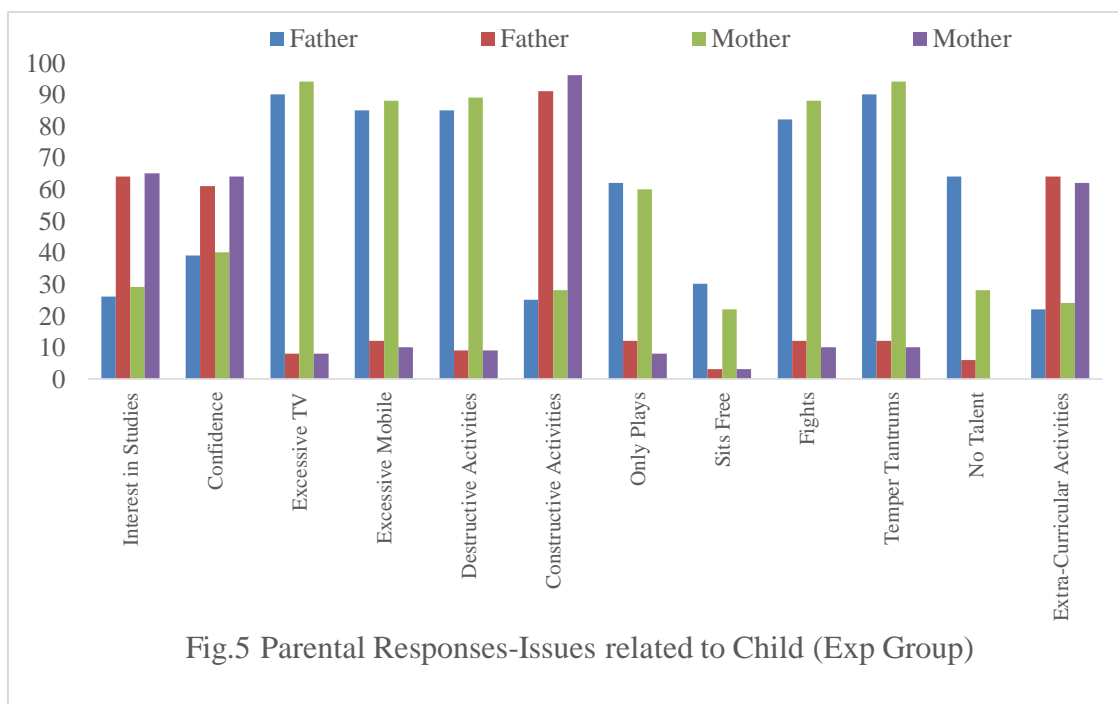
dropped. 55% fathers and 28% of mothers reported their unawareness regarding the child's educational and developmental concerns but later only 28% of fathers reported such unawareness. This unawareness still existed as mothers were actively involved with children in the participation process in these cases. 70 of fathers lacked interest in such activities with children as compared to only 4% of mothers. But 16% more fathers developed interest after participating together with their children. 69% of fathers confirmed that due to their busy schedule, they fail to bond with their kids, later this figure dipped to 22%. 76% fathers and 44 of mothers reported that they do not get opportunities in their timeline to bond with their kids. Eventually, in the second survey, this figure dipped to 28% in the case of fathers and in the case of mothers, in an astonishing way, none of the mothers find missing of such opportunities. No such differences were observed in case of the control group.

Table 4: Parental survey before and after participation- Issues related to Children (n=400)

Issues related to Child	Experimental Group (n=200)				Control Group (n=200)			
	Father (n=100)		Mother (n=100)		Father (n=100)		Mother (n=100)	
	S-1	S-2	S-1	S-2	S-1	S-2	S-1	S-2
Interest in Studies	26	64	29	65	28	28	29	29
Self Confidence	39	61	40	64	40	39	40	41
Excessive Television Viewing	90	8	94	8	90	90	94	95
Excessive Mobile Phone Use	85	12	88	10	85	86	87	89
Destructive Activities	85	9	89	9	85	84	89	90
Constructive Activities	25	91	28	96	15	16	11	10
Only Plays	62	12	60	8	62	63	60	58
Sits Free	30	3	22	3	30	32	22	23
Fights	82	12	88	10	84	84	89	91
Temper Tantrums	90	12	94	10	90	89	94	95
No Talent	64	6	28	0	65	65	29	30
Participation In Extra-Curricular Activities	22	64	24	62	21	21	23	24

In the experimental group, during the first survey, 26% fathers and 29% mothers replied that their children were actively interested in studies while after participation nearly 65% of parents replied that their wards were interested in studies. According to 40% of parents, their children were confident, but later after the second survey; nearly 63% of them responded that their children were confident.

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Most of the parents reported that the children watched excessive television, used mobile phones and were involved in more destructive activities, but later less than 12% of them reported such issues. Nearly 25% of them reported that their children were involved in constructed activities but during the second survey, the figures crossed over 90%. During the first survey, the majority of parents were annoyed as according to them, their children lacked talent and displayed irritating behaviour like sitting idle or only playing, fighting, throwing temper tantrums. In contrast, the results revealed that such behavioural issues had mitigated. 22% of fathers and 24% of mothers responded that their children participated in extra-curricular activities at school while these figures rose by 40% during the second survey. No such differences were observed in case of the control group.

CONCLUSION

To summarize, this paradigm of real-life experience, not otherwise provided by traditional practical lessons ascertained that the process is more important than the outcome, which could be adapted to different teaching scenarios within an institution. Participation in such competitive activities can boost the child's performance, self-confidence and saves children from bad effects of excessive television and mobile phones. It keeps them active, busy and engaged in positive activities. More interestingly, it leads to strengthening parent-child bonding and develops hidden talent among the students.

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Conflict of Interest

The authors carefully declare this paper to bear not a conflict of interests

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