
Innovation Hub and SMART Incubation Centre - A Success Story

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ABSTRACT: - With make in India drive and dedicated promotional projects to develop innovation ecosystem, every school and college are encouraging the lateral thinking skills of students. The constructivism is considered as foundation of learning and most of the learning right from first standard is project based. The sudden inrush and commitment to project has resulted in ready-made projects for sales and in Pune there are 18 project shops, keep aside the projects sold by seniors and, done by the parents. Which shows the simple assignment of projects does not assure the innovation and effective learning. Is there a way for developing innovation and creativity? - is a topic of research. We in SMART incubation did an experiment to develop 8 unique projects and award-winning posters and developed delighted teams to address social problem and find solution by innovative creative grooming. This case study reviews our journey of innovation and narrates the awards we bagged in last three years to mark the success story of transformation of incubation to innovation hub of new ideas. We, a committed institute, wish to transform the society. We conducted a survey to identify the needs, gap in learning, innovation and initiate the improvisation and incubation. The scope was restricted to Dandekar Bridge vasahat, Janata Vasahat and Panmala, when we started later Deccan, University, Katraj, Ambegao, Nahre, Gujarwadi, Shindewadi also got represented. The demographic analysis shows innovation is irrespective of age, education and gender, and creativity. Innovation grooming is feasible even with any background. The conclusion is a dedicated team, if mentored carefully can result in change agents, a multiplier of this concept. The dedicated team can generate an avalanche effect and would transform the society, in future. Although this is a pilot and methodology is based on lean technique & 6 sigma method of problem solving, other aspects like attitude and originality are addressed in detail, through their creative expressions of photography and poster competitions. All of them have met and exceeded the target to show our efforts were in right direction. The effort to make India proud, such initiatives are very important, and wish to present as case study for peer review, through this paper.

Key Words: SMART incubation, Innovation hub, creative thinking, creativity, networking

Introduction: -

The researchers are associated with Ramkrishana Math Swami Vivekananda Balak Seva Sangh, where in mostly students from nearby slum are mentored. An initiative started by Swami Aryanand Maharaj, mentored till 2016 by Swami Rameshvaranand Maharaj and now headed by Swami Ramanand Maharaj. A dedicated teaching volunteers and able guidance and support from math has sustained this activity since 1995. As we were interacting with the team, some of the students expressed their parents, and sisters also will like to have some interaction platform. The Yuvak sangh activities are restricted to age limit of 35 years, further mentoring was self-driven. During interactions, it was realised, a dedicated team of 15 members wanted to utilise their time creatively and contribute to society, irrespective of age and gender. We started an incubation centre for them. The ladies team was not separate to start with later separated called Nivedita team, and students team is called Nachiketa is formed.

The working hours are different, educational backgrounds are different, the skills and abilities and family roles and responsibilities are different, yet there is a common thread, they all were willing to experiment and put in their time and effort for the change, change for better- A concept titled as Sankraman – Uttarayan – marching of sun towards North was a day for formally launching this program, similar aspiration for upward movement towards betterment was the goal of every individual. Uniqueness originality and innovation always has an edge over other, but can it be developed? So, we decided to mentor them, to verify the hypothesis can

creativity and innovation be developed. And dedicated minds can lead to projects that have positive impact to society, if mentored. The concept was clear even if we fail in transforming the members the social development and problem solving will still be a value add and worth doing the exercise.

Introduction to Innovation hub & SMART incubation centre–

Free entries with reference were given to anyone who wanted to be part of the innovation and incubation. A dedicated gap analysis was done to map individual aspiration and current status review. The common topics for development were identified, and specialised mentors and career development plans are also defined. The career counselling, training and mentoring are the three methods used for this transformation and the grooming is through SMART incubation and outcome has resulted in an innovation hub, a name of their choice.

2. Hypothesis - Value education and role model driven grooming results in effective change management, and award-winning grooming of an individual or a team.

A dedicated model for incubation results in an Innovation hub that grooms the teams and develop projects impacting positively to change the society.

3. Methodology: Data based on the surveys, interviews and finding of the selected pilot team of 15 students and working individuals, home makers ladies and gents from different social income and family and cultural background and also demographic area was selected who volunteered for this experiment, and were willing to undergo a change, by putting in efforts. This was initiated by allowing the leaders to choose the partners and team members, where in they can interact at least once a week and be monitored and mentored and trained.

Targets set for validations included - Quality month participation at national level QCI and be winning entries for Kaizen, Quiz, Photography, essay, poster, slogan competition and QCFI kaizen, model and home kaizen awards participation and achieving awards. Or participate any national level seminar, conference and or competition for project, paper, poster to prove creativity, originality and innovation and get recognised.

Pre-mentoring survey was done and evaluation is done, post mentoring same is repeated, also various interviews and observations are used other than the case results. To validate the change. The only restriction for topic for kaizen was to identify a problem that will have social application. A problem solving training and dedicated mentoring including counselling on positive thinking, was the tool used for triggering the projects. The innovation and creativity modules are developed by experts in the field, but the application is monitored and mentored for SMART application – Socially motivated application of research and technology. Support from Engineering colleges and dedicated volunteers was also received. VIT, VAMNICOM and Sinhgad are the typical names. Industry teams included Mascot Pump, Mayura enterprises, Control touch, Intra Electronics, Wyse biometric system, Nehate electronics, and Nalco Champion.

4. Observations & findings- Pre-mentoring analysis and finding of the team

Sr. No.	Point	Response
1	Education background - % members who are graduate and % having science and engineering Background	One of 15 is engineering graduate, 2 are non-graduate others are commerce graduate
2	Ratio of Married and unmarried	1:5
3	Ratio of Girls to Boys	1:3
4	Employment status – employed to un employed	1:15
5	Have participated in any competition at state level and won awards	1:15

Table 1 – Pre-project situation

After gap analysis of the aspiration and actual situation following actions were initiated for selected members of team and individual and group interaction, counselling and mentoring plan as per the gap & need identified.

In addition to common motivation, positive thinking, creativity and problem-solving training given to all, training on lean, 6 sigma and problem solving tools basic engineering & control theory are few added sessions as common sessions.

As the major tool is used based on data analysis for problem solving the criteria for evaluation is case study and kaizen competitions, peer review publications, and project competitions. For creativity and originality, the essay, poster and photography participation were encouraged at national level. Quiz was a test for their learning effectiveness. All the competitions were conducted by a third party at national and international level minimum.

Development, training and monitoring is evident that the pilot was mentor so effectively that the results were beyond expectation. The team met and exceeded all the expectations.

Challenges in field of agriculture, school level safety, disaster management, climate change, traffic, health and sanitation are the current focus areas. And the successful projects are proven to be motivators. Soon we have to split our batch into two more teams - a separate batch for ladies called Nivedita is started and students team Nachiketa is also initiated.

The Multiplier effect was very encouraging and we could also multiply the locations. The grooming included following training needs for the teams & individual. The percentage is the perceived gap the incumbent has identified. We are very happy to share this model of change management with help of this paper so even peer multiplication shall take place.

Sr. No	Topic for training, gap bridging	% Response
1	Motivation	23%
2	Communication – Spoken English	80%
3	Use of Smart phones, lap top and dedicated apps.	34%
4	Team Work	2%
5	Positive thinking	29%
6	Computer operation	7%
7	Microcontroller and simple application	80%
8	Problem Solving	78%
9	Creativity	63%
10	Innovation	21%

Table 2- Bridging the Gap

Without challenging their perception dedicated trainings were organised and all members were given freedom to attend the sessions. The 6 sigma, problem solving and lean was mandatory to all.

Project identification done by problem bank , brain storming and selection by individual choice.

Competition was based on theme by the conventions and organising institutes, only one criteria was given – the organisation shall be apex level institute when national level participation and reputed institute for international participation.

After mentoring the achievements and recognition achieved by the team are narrated as follows -

Awards recognitions

Sr. No	IPR/ Peer review/ Award level	
1	Award winning Kaizen 2017 of QCI Quality Month	1
2	Quiz award for Quality Month 2017 QCI	1
3	Poster competition Quality Month 2017 -QCI	4
4	Photography competition Quality Month 2017 QCI	1
5	Kaizen in National level QCFI award- Par excellence	1
6	Home Kaizen – Par excellence – National level QCFI	1
7	Model Display – Par excellence – National level QCFI	1
8	Best paper- National level	3
9	Papers published -International conference	10
10	International journal -	7
11	Projects competed	8
12	Projects in hand	15
13	Projects patented	1
14	Industry associations -Intra, Wyse, Mascot Pumps, Mayura, Nehate electronics, Control touch, Nalco,	7
15	Institute associations	5

Table 3 - Awards and Recognition

5. Data analysis and interpretation:The data is so explicit that we don't need any statistical tool even a graph to interpret it. All the participants with little hand holding has resulted in considerable improvement at national and international level.

The innovation, originality creativity is within everyone. Only not explore due to type of life style and virtual world exposure or for various other reasons.

The immediate tendency was to take projects related to competition and focus area, no innovation was seen.

However, while developing the solutions and analysis creative participation, synergy effect and originality was noticed.

Although patents are considered as one of the criteria, team is more comfortable to share the knowledge without any IPR, they want the good things shall be multiplied for the society.

The most remarkable point is - no external grants and funds were utilised and individual members contributed for the projects, fees, and infrastructure.

We started the training with a simple board and chalk and later on, a laptop, LCD, Wifi , group app, hardware, soldering guns, boards, components, support organisations, institutes and industry association all was added as and when needed.

The centre is well established and willing to take different challenges posed by Niti Aayog, the Start-up ideas to make India proud. We are sure for this social engineering with help of the Lean, and simple problem-solving tools and creativity training and mentoring has a great contribution and can be rolled out as model for innovation development.

The development of individual and the team and society is a great contribution and we are proud to be members of this drive.

Value education and role model driven grooming resulted in effective change management.

Is proven as in a team some focus drive & dedicated efforts to follow the value stream mapping and role model using science park Mysore centre has resulted in effective change management. The team was doubtful themselves about the results and their performance due to lack of proven success story. Now they are sure the simple difference in success, and otherwise is following a method, or a model and waste identification exercise. The experiments and development training in these lines has resulted in discovering the originality and creativity that was within them never explored before and then innovation was just an evidence driven fact, application of ideas not very difficult, are the feedbacks in nutshell.

Thus, a dedicated model for incubation resulted in Innovation hub that groomed the teams and developed projects that has positive impacts on society.

The typical awarded and proven projects include – Water purifier, MMI – Measure, monitor and improve devise with integrated risk and water management. Level controller with voting logic. Bio gas to salvage solid waste. The solar lamps for renewable energy. Access control based on biometric and integrated system. Various android based apps for distribution of agricultural products. Reduction of waste, by control at original level. Tissue culture and bio tech projects related to agro productivity. Safety of kids, senior citizens and other vulnerable member of society.

6. Suggestions :Such group development and interaction model based on technology park and mentoring, counselling analysis and hand holding for individual and group for synergy proven to be very effective and can be adapted by other and can be extended for remaining members also.

Projects in Hand includes and continues the same focus areas such as- school safety, Agricultural development by tissue culture and horticulture, app for farmers to consumer connect, common platform development, climate change mitigation projects on renewable energy, as biogas, solar lamps, stoves and maintaining disposal camps for clean India.

Typical school level safety projects are as listed below.

Walk to school safely – Alarm and intimation system in case of anticipated risk of accident, abuse. – An engineering project using blue tooth and small electronic gadget.

Bicycle rider safety - A bicycle gadget that helps auto balance and safety alarms, and intimation.

Student transportation– Online geo tracking system of all students and their transport vehicle

Playground injuries–First aid training app and handy kit

School indiscipline– Value education and Mentors team

Challenges posed by Field Visits, Excursions, Social Programs — First aid app and alarm unit

School violence – Counselling and awareness app. SMART connect

Youth violence– Youth and Value education app. A dedicated counselling and meditation guide with planned interactions with experts.

Vandalism– Developing the super kids’ app, to identify the attitude and guide the students to control their emotions

Sexual abuse– App for the victim and app for the accused are different and mentoring dedicated case to case is offered

Suicide– Early detection by a dedicated inventory mapping and counselling app.

School Health Index–A survey tool to analyse the current situation, gap and prompts corrective and preventive actions with handy solutions.

Dangerous intruders– The security app that makes school security tech savvy controller.

Gang violence– Teachers app that help them to identify and mitigate the gangs being developed. If already a gang is formed, then assigning roles and responsibilities to keep them in positive occupation are prompted.

Fire&Earthquakes— Fire and safety drills training based on app dedicated to individual set up

7. Conclusions: -A dedicated mentor can initiate a change. Students, individuals are looking for change, and one can initiate and mentor the change by sparing little time for society, this is far more creative than living in the virtual world of entertainments and social media. If adequate options are provided the teams are willing to get out of the routine, take up social challenges, address them with creative solutions and as a result a SMART incubation centre gets transformed into an Innovation hub

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9. BIBLIOGRAPHY/ REFERENCES:

- 1) <http://media.belurmath.org/category/news>
- 2) Vidyashala. Mysore.org
- 3) SriSaradamathpune.org
- 4) Basic teaching of the great philosophers: S.E. Forts P n 174-75 New-York
- 5) SS10000, Standard on School safety