

Inculcation Of Life Skills Through Project Based learning To Promote Sustainability

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Abstract: One needs to possess various life skills in order to prosper and promote sustainability in this progressive world. There are many such life skills, but the core life skills laid down by WHO may include problem-solving, critical thinking, decision and various other skills. One is not readily born with these qualities, but needs to imbibe them from various sources with the passage of time in order to increase personal sustainability in this walk of life. Merely teaching these life skills may not actually help a student to imbibe them. Hence, a methodology for efficient inculcation of life skills like, STUDENT SKILL DEVELOPMENT CENTRE (SSDC) with falls under PROJECT BASED LEARNING (PBL), needs to be adapted. With the usage of traditional pedagogy, it is possible to generate theoretical awareness but inculcation of life skills is a task in itself. Hence project based learning or outcome based learning comes into the picture. The change in teaching methodology which was introduced in order to record the inculcation of life skills was the origination of the Student Skill Development Centre (SSDC). In SSDC, student of various domains imbibe knowledge by generating self-taught solutions to realistic problems. As per the observations, the students working under SSDC or other project based learning (PBL) centres tend to inculcate enhanced decision making, critical thinking, team work and problem solving skills as compared to those being educated by traditional approach. These students find it easier to cope up with any problem they come across in their lives. Hence it can be concluded that inculcation of life skills is rapid in those students who work under skills development centres. Such students also tend to sustain and prosper in the long run.

Keywords: sustainability, life skills, PBL, SSDC.

I. INTRODUCTION:

The appellation “Life skills” cite to those skills required to extract the maximum out of one’s existence. Whichever skill proves to be handy in our lives can be regarded as life skills. These skills help us cope constructively with the hardships of life. Few skills may prove to be appropriate for an individual based upon their current happenings, customs, ethics, geographical position, lifetime and so forth. Life skills theory is also entitled as “psychological competency”,

A life skill enables one to sustain in their surroundings and also aids them to emerge as an active and productive member of their community. Life skills play a key role in the promotion of sustainability which is defined as the potential to be nurtured at a precise amount or standard. Sustainability is the capability to subsist constantly. Also defined as the process of people adapting to the changes in a balanced environment and maintaining it, where the alignment of technological growth, the flow of investments, institutional advancements and the victimization of resources are all in harmony amongst each other and improve both present and future potential to meet human necessities and desires.

There are five pillars of sustainability namely:-

(i)**Human sustainability** that aims at upgrading and supporting mortal wealth in the community. Few programs that fall under the umbrella of human sustainability are contributions in the field of education and health sector, availability of nutritious food, ingress of services, expertise and knowledge.

(ii)**Social sustainability** that aims at safeguarding the social capital by financing and generating services that contribute to the framework of our mankind and it also houses a greater view of the world in terms of proliferation, communities and civilizations.

(iii)**Environmental sustainability** which aims to refine prosperity via the conservation of crude stock like water, minerals, air.

(iv)**Economic sustainability** which intends to preserve the wealth unimpaired. It focuses on refining the quality of livelihood.

(v)**Personal sustainability** is defined as individual’s capability to keep a level or pragmatic equilibrium of one’s vigour even in the toughest phases of life. It is the core for individuals creating a change globally.

There are various life skills required by an individual through the course of life to promote the amalgamation of the aforementioned sustain abilities. However, in the year 1999, WHO or the World Health Organization has recognized the six essential domains of personal competency as *conveyance and relational abilities, innovatory and analytical intelligence, decisiveness and hindrance-resolving, psyche-consciousness and sensitivity (emotional*

intelligence), confidence and equanimity (self-restraint), resilience and the potential to surmount with problem, teamwork. Mastering the inculcation of these life skills can make an individual predominant in the course of life and helps them promote sustainability. [1-3]

A. What is PBL?

PBL which is an acronym of Project based learning, also referred to as learning by doing scheme is a tutoring pedagogy wherein tutees acquire awareness and expertise by functioning for an elongated duration of hours in pursuit of exploring and reposting to an genuine, appealing, and composite query, issue, or hindrance. Through PBL tutees obtain sound understanding via agile research of absolute hindrances. It is a style of active query-oriented training that contradicts with parrot-fashioned knowledge retention, paper-based or tutor-guided direction that extends mainstream gospels or exhibits a resolved track to awareness by rather cross-examining obstacles and contexts.

Pedagogues have been making use of PBL or project based learning pedagogy for about 50 years today, but it has lately started to trend as the idea of student becoming “college and career ready” is prevailing. To flourish in this constantly evolving sphere, students are under the obligation to understand both the 4C’s and 3R’s (reading, writing, arithmetic, communication, creativity, critical thinking, collaboration) which fall under the umbrella of life skills.

Taking a closer look upon the *outcomes* of project based learning we find that the students following PBL pedagogy tend to *learn project management, grow more empathetic, become explorers and hindrance resolvers, tend to participate actively in the tutoring exercise and unabashedly different, engage in iterative thinking and are ready for the creative economy, think divergently, make deep connections between ideas, learn to take creative risks* which also fall within the framework of life skills. Hence we came to the conclusion that life skills are interlinked with the outcomes of project based learning and the PBL methodology has to be efficiently used for the welfare of the individuals and broadly the society and what better way to be using it to promote sustainability which not only aims at the welfare of the individuals but also the society in general. [4-5]

There exist seven key domains for Project-Based learning.

- A guiding query
- Cognizance
- 21st Centenary Adroitness
- Exploration and transformation
- Tutees’ opinion and selection
- Critique and Emendation
- A communally conferred outcome

B. Differences between traditional and PBL Methods:

Criteria	Traditional method	PBL
Evaluation	Test scores	Students display of knowledge and performance
Syllabus	Content coverage is the prime most agenda	Complete understanding of the content is the prime agenda
Teaching Methodology	Chalk and talk	Activity and real time based Learning
Role of the mentor	To spoon-feed the entire content to the students by preparing class notes and exercise sheets	To facilitate the students towards knowledge and to bridge the gap between the college and the career requirements.
Mode of Learning	Textbooks And class notes	Self-learning and inquiry
Type of learning	Individual learning	Peer-learning which promotes teamwork

II. METHODOLOGY:

As we had figured out that the outcome of PBL and the life skills were intertwined and we wanted to utilize this to the maximum in order to promote sustainability, we devised a fool proof plan and started a Centre called the Student Skill Development Centre (SSDC), wherein students can not only imbibe the essential life skills but also learn how to utilize them judiciously for the welfare of the community. To begin with the process of implementation of project based learning, students were asked to fill a form wherein they were inquired about their interests and the type of skill they would prefer to learn and the purpose of choosing that particular skill so that we would be on par with ideology and motive of the trainees. This would not only enable the pupil to have a drive but would also help the trainers to devise a smooth path for the implementation of the same. Hence both the Centre and trainees could meet their purposes.

So initially, as most of the students who displayed their interests in the project based learning pedagogy were from the ECE course and wanted to learn a domain oriented skill, so we went ahead with the same action plan. A 6 month action plan was devised to monitor and train the students without disrupting their methodical academics within the time frame of 4pm-6pm semi-weekly. In order to monitor the growth of the students closely not more than 30 students were placed in the cluster of each day. In the initial days, few students dropped out of the programs due to personal issues and transportation problems but later on re-joined the centre, which put the first tick on the checklist as we saw the motivation and drive in them to learn and create something new for providing community services.

Subsequently, when the training proceeded, the students were cross-examined at various stages by throwing real-time problems at them and they were readily accepting the challenges and were able to cope up with those problems. They were also asked to explore outside the college for a community partner who might either be a small scale farmer or a large scale industrialist, looking for solutions to their problems in exchange of money. By doing so the trainees ticked all the boxes like human, economic, personal, and social sustainability. These trained students were quite interactive as compared to the rest of the students being trained under only the traditional pedagogies and had good communication skills and displayed empathy towards others. The projects

developed by the students working under the Centre were far ahead in terms of environment friendliness as compared to those students who were not trained under the centre. As the students contribute to massive number in the world's population and also are the roots for future generation, imbibing life skills to promote sustainability from the very beginning would take us towards a sustainable world.[6-7]

Fig 1. Working area



Fig 2. Technical interaction for industrial needs/critical thinking



**Fig 3. Environmental Sustainability
(use of solar power)**



Fig 4. Economic and social the investors)



**Fig 5. Project based learning
workshop to enhance teamwork**



**Fig 6. Rigorous presentations to
inculcate communication and inter-
personal skills**



**Fig 7. Peer learning for self-awareness and
personal sustainability**

III.EVALUATION RUBRICS:

Criteria	Exceed Expectations (8-10)	Meet Presumptions (4-7)	Could not meet presumptions. (1-3)	Score
Communication skills, inter-personal skills and peer- learning	The student was able to put forward their ideas efficiently and to the point, to the best of the listener's understanding during presentations	The student was able to present their ideas but not to the fullest and had self-doubts	Were totally not able to put forward their ideas and had performance anxiety/stage fright considering the feedback from the listeners	
Decision making and problem-solving	The student was able to devise and execute a concise plan completely in a very short span of time with alternate backup strategies	The student was able to devise a mediocre plan and accomplish it	The student wasn't able to reach conclusions or devise any plan even after utilizing their time to the fullest	
Creative thinking and self-learning	The student was able to propose unorthodox/eccentric ideas with substantial evidences for the given problem statement	The student was make considerable changes in the pre-existing solutions of the given problem statement	The student was not able to come up with any ideas even after thorough brainstorming	
Empathy and teamwork	The student was quickly able gel up with any provided group of students and tried to understand everyone's perspective	The student tried to impose their opinions upon others without considering their perspective	The student reluctantly agreed to be a mere passive member of the group	
Resilience and personal sustainability	The student did not panic hurdling upon an obstacle during their course of work and were able to recover quickly	The student initially dreaded upon the thought of an obstacle but eventually was able to overcome it	The student tried but had given up towards the end	
Economic sustainability and technical skills	The student was able to develop an appropriately functioning mechanism along with additional features with the usage of minimal number of sensors and actuators incorporated within micro-controllers and micro-processors	The student was able to develop a moderately operating mechanism	The student wasn't able to develop any functioning mechanism with the usage of hardware and other components	
Social and environment-al sustainability	The student tried to take up more issues concerning to the environment and society and accomplished the goal to solve them efficiently	The student tried to take up the issues concerning to the environment but wasn't able to find a solution	The student took up problems which had pre-existing solutions regardless of its concern with the society or environment	

IV.RESULTS AND OBSERVATIONS:

The students trained under Student Skill Development Centre (SSDC) using the implementation the Project- Based Learning pedagogy were able to produce industrial standard projects that predominantly focused upon resolving the environmental affairs with the usage of minimal components that subsequently resulted in the promotion of sustainability of all sorts. Also the trainees of this centre displayed enhanced life skills as they have participated in/organized multiple workshops and presentations which require enhanced life skills.

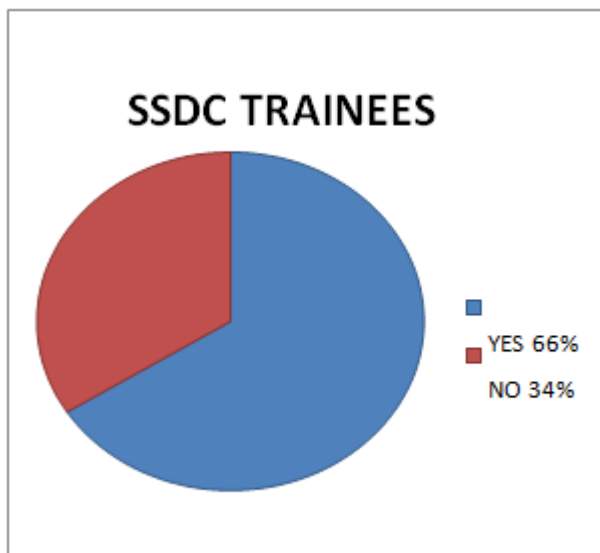


Fig 8. Percentage of trainees of SSDC and non-SSDC trainees

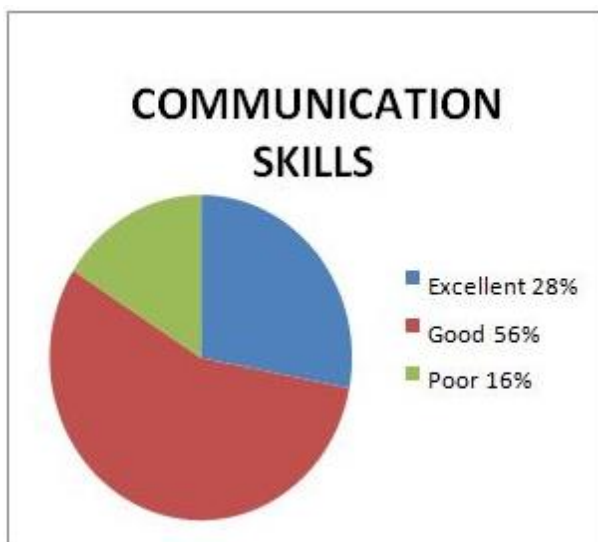


Fig 9. Students having sound communication skills

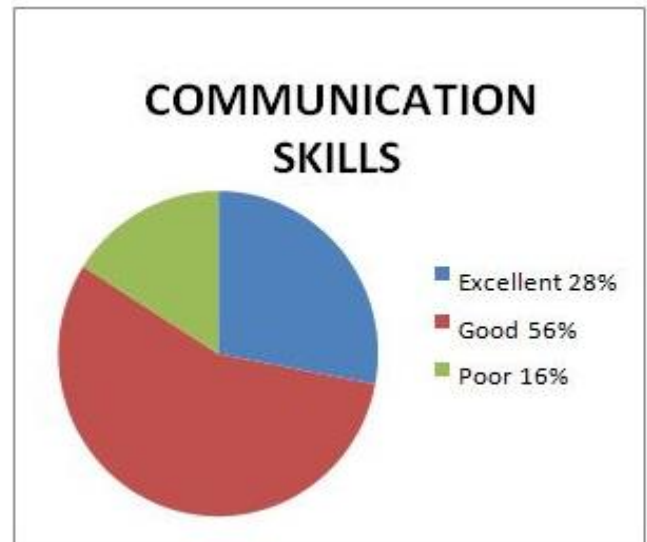


Fig 10. Students of SSDC with excellent communication skills

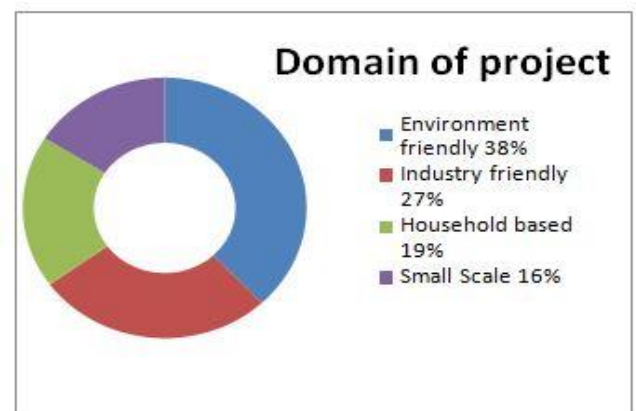


Fig 11. Project Domain

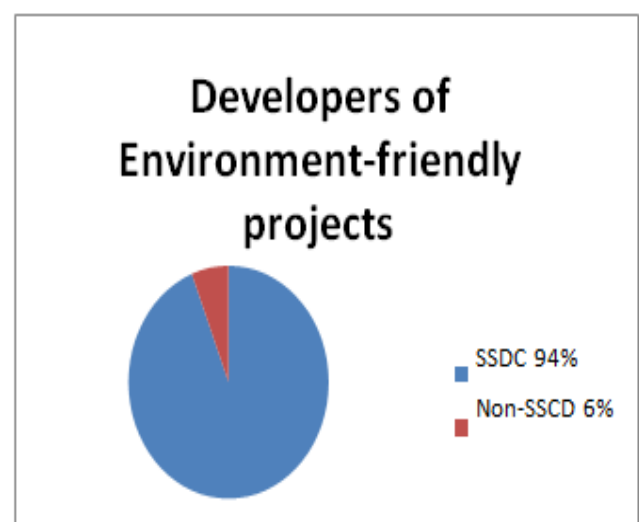


Fig 12. Environment friendly projects developed by SSDC trainees to promote sustainability

V. CONCLUSIONS:

This course enables an individual to imbibe enhanced life skills and nurtures the students to solve multiple sustainability related concerns through rigorous practice of hands on learning, project/product building and presentations. It also bridges the gap between theoretical learning and real-time implementations. The project based learning pedagogy has directed students towards making projects and products to serve the purpose of community service. Alongside self-contentment, PBL also empowers students to prosper and sustain in the long run of life and helps promote sustainability.

VI. REFERENCES:

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