



Work Integrated Hybrid Learning for Effective Solid Waste Management in Schools, India

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ABSTRACT

Work Integrated Hybrid Learning (WIHL) with solid waste management activities can help in the development of focussed skills such as social awareness, self-empowerment, problem solving, and scientific attitude providing effective learning outcomes among students. Good teachers always shows cares and committed work for the children. They provides excellent coaching to achieve in life for their students. Teachers can provide wonderful learning experiences through accepting the teaching challenge and adapting to the new pedagogy .Restructuring of pedagogy needs a proper strategic plan satisfying all the learning outcomes.

In this research, an attempt has been made to understand the student's attitude and suggestions regarding Solid waste management and prepare an implementation strategy of Work integrated Hybrid learning for overall development of teachers and students.

INTRODUCTION

Hybrid learning is a way of combining traditional class room, digital class room and experiential learning objectives. It needs a professional design with the help of digital experts .Work integrated hybrid learning using solid waste management technology involves the process of collecting, treating and disposing solid discarded material .It helps in the development of skills such as using academic theory in the real world, self-awareness, social awareness, team work, communication skills and self-sustainability . In developing countries like India ,the need of waste management programs such as Swatch Bharat Mission ,Ganga action plan ,Yamuna action plan plays an important role .As Government is taking appreciable steps to develop clean and healthy nation, it is the responsibility of every citizen to work for our Nation without showing any kind of politics.

Future India is in the hands of Educational institutions in the form of students. Adoption of solid waste management system, by educational institution provides good platform for Work integrated hybrid learning.

AIM AND OBJECTIVES

1. To study on the effectiveness of work integrated hybrid learning using Solid waste management technology for the nation building.
2. Students acquire the knowledge on identifying, differentiating and segregation of wastes.
3. They understand the reality about the quantity of waste generation per day which can lead them to critical thinking and problem solving.
4. Creativity can be raised through waste management activities such as “Best out of Waste”.
5. Students understands about the practical application of 3Rs of waste management – Reduce, Reuse and Recycle
6. Develops the skill of social awareness and problem solving by donating old books to the needy students.
7. Develops the quality of national integration by collecting wastes and send for waste management through their schools.

METHODOLOGY- SURVEY ANALYSIS

Student's response and support is the most important factor for the implementation of any activities in educational institutions. To understand the attitude of students towards solid waste management, an online survey has been conducted with the small group of students of age group 10 – 12. The survey report has been represented in the Figure 1.1 to Figure 1.13, Table 1.1, Table 1.2, Table 2.1 and Table 2.2.

Waste collection and Old book donation details of a school surveyed in which waste management activity has been implemented as a part of extracurricular activity for five years.

Surveyed Institution: Kendriya Vidyalaya No.2, Vasco Da Gama, Goa

Activity : Waste Management Co-ordination by Mrs.Sheeba.K.M (PGT Biology)



Table: 1.1 Waste collection details of school for past five years

SL.NO	ACADEMIC YEAR	DETAILS OF WASTE COLLECTION AND SEND FOR AUTHORISED DEALER
1	2015-2016	268.5 K
2	2016-2017	78 K
3	2017-2018	308 K
4	2018-2019	571 K
5	2019-2020	964 K
6	2020-2021	203K
7	2021-2023	802 K



OLD BOOK DONATION

Table 1.2 Details of old book donation

YEAR	NO.OF BOOKS COLLECTED	NO.OF CLASSES/STUDENTS BENEFITTED
2016-17	157	4 CLASSES
2017-18	65	42
2019- 20	53	29
2020-21	65	48

ANALYSIS OF STUDENTS RESPONSE TOWARDS WASTE MANAGEMENT ACTIVITIES

Figure 1.1

The best method you prefer to adopt by the schools creating clean and hygienic environment as part of curriculum
66 responses

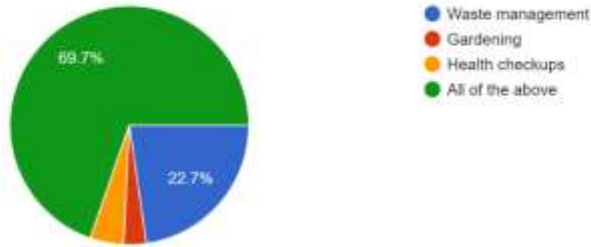


Figure 1.2

Are you aware about waste management and cleanliness drive of Institution?
67 responses

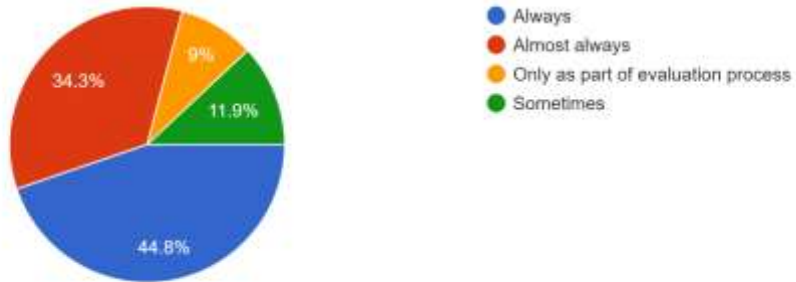


Figure 1.3

Whether you are segregating classroom wastes and put in the waste bins?
67 responses

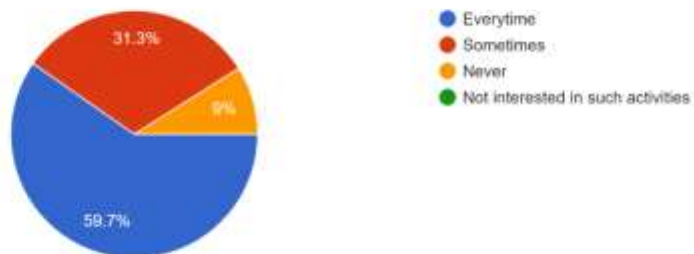


Figure 3.4

Which kind of waste management activities should include in the curriculum for making students aware about clean and healthy environment?

66 responses

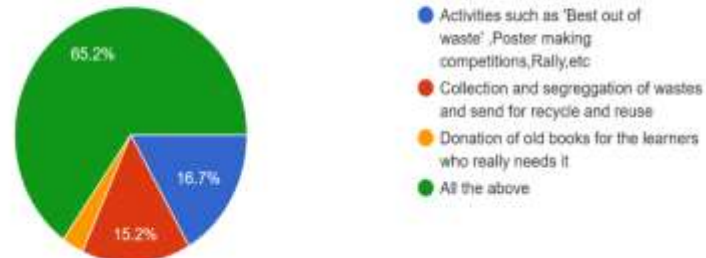


Figure 1.5

Whether you are interested in donating your old books to the students who needs books?

66 responses

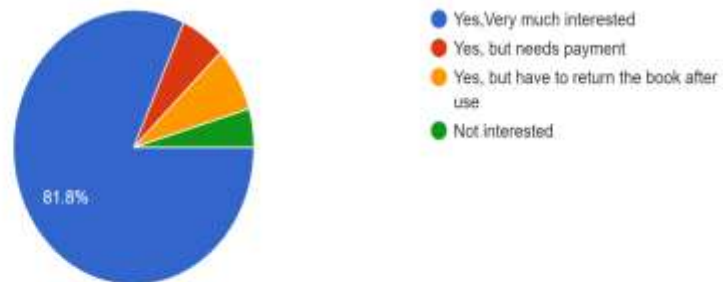


Figure 1.6

Whether you are interested to collect and donate the unused or old electronic device for the poor students for study purpose through school?

66 responses

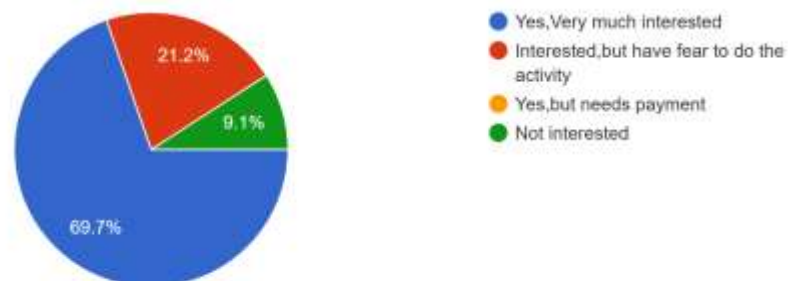


Figure 1.7

Whether you have the practice of waste segregation like degradable and non-degradable at home?

65 responses

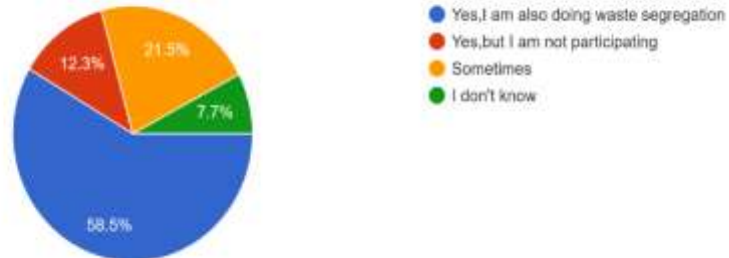


Figure 1.8

Efficiency of the collection service in your locality.

66 responses

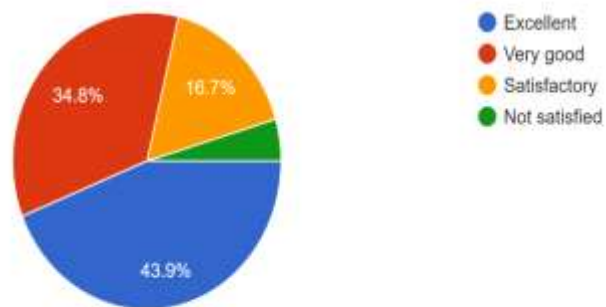


Figure 1.9

Are there waste reduction campaigns within schools?

66 responses

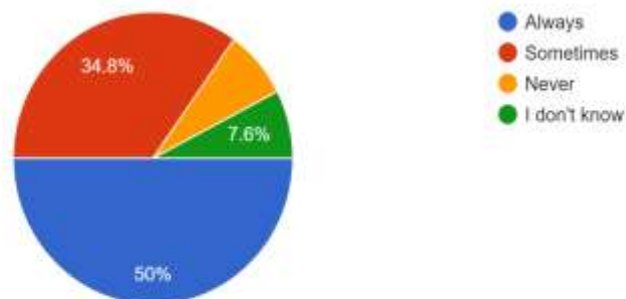


Figure 1.10

Whether you made any attempts to reuse, recycle and reduce waste in your school?
66 responses

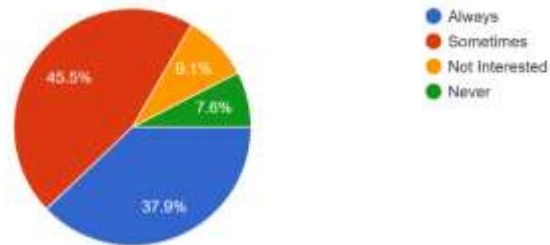


Figure 1.11

Which activity you like the most as part of waste management activity to create awareness?
65 responses

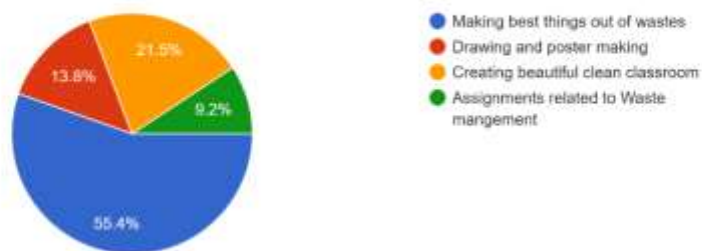


Figure 1.12

If you are requested to collect Tetrapacks to the school for recycling, what will be your contribution?
66 responses

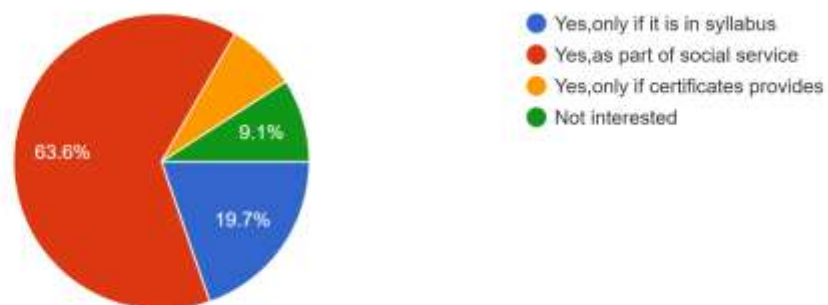


Figure 1.13

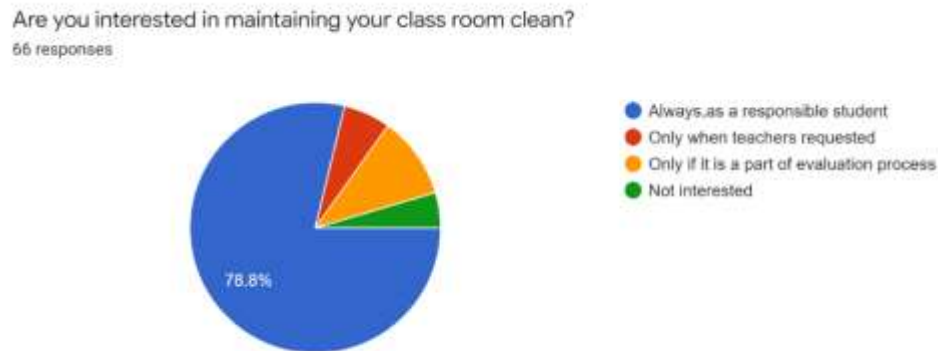


Table: 2.1 Response of students towards Waste management activities inside the school campus

SL.NO	QUESTIONS USED FOR SURVEY	STUDENTS RESPONSE (in %)
1	Best method you prefer that school have to adopt to create clean and hygienic environment as part of curriculum	
i	Waste management	22.7
ii	Gardening	3.1
iii	Health checkups	4.5
iv	All of the above	69.7
2	Are you aware about waste management and cleanliness drive of institution?	
i	Always	44.8
ii	Mostly always	34.3
iii	Only as part of evaluation	9
iv	Sometimes	11.9
3	Whether you are segregating wastes and put in the waste bins?	
i	Everytime	59.7
ii	Sometimes	31.3
iii	Never	9
iv	Not interested in such activities	0
4	Which kind of waste management activities should include in the curriculum?	
i	Activities such as Best out of wastes,Poster competition,Rally etc	16.7
ii	Collection and segregation of wsates and send for recycle and reuse	15.2
iii	Donation of the old books for the learners who really needs it	2.9
iv	All of the above	65.2
5	Whether you are interested in donating your old books to the students who needs books?	
i	Yes,very much interested	81.8
ii	Yes,but needs payment	6.1
iii	Yes,but have to return after use	7.6
iv	Not interested	4.5

Table 2.2 Response of students towards Waste management practice in school and home

SL.NO	QUESTIONS USED FOR SURVEY	STUDENTS RESPONSE (in %)
1	Whether you are interested to collect and donate the unused or old electronic device for the poor students for such study purpose through school?	
i	Yes, very much interested	69.7
ii	Interested, but have fear to do the activity	21.2
iii	Yes ,but needs payment	0
iv	Not interested	9.1
2	Whether you have the practice of waste segregation like degradable and non-degradable at home?	
i	Yes, I am also doing waste segregation	58.5
ii	Yes ,but I am not participating	12.3
iii	Sometimes	21.5
iv	I don't know	7.7
3	Efficiency of collection service in your locality	
i	Excellent	43.9
ii	Very good	34.8
iii	Satisfactory	16.7
iv	Not satisfied	4.6
4	Are there waste reduction campaigns within schools?	
i	Always	50
ii	Sometimes	34.8
iii	Never	7.6
iv	I don't know	7.6
5	Whether you made any attempts to reuse ,recycle ,and reduce waste in your school?	
i	Always	37.9
ii	Sometimes	45.5
iii	Not interested	Nearly 9
iv	Never	7.6
6	Which activity you like the most as part of waste management activity to create awareness?	
i	Making best things out of wastes	55.4
ii	Drawing and poster making	13.8
iii	Creating beautiful clean class room	21.5
iv	Assignments related to waste management	9.2
7	If you are requested to collect tetrapacks to the school for recycling, what will be your contribution?	
i	Yes, only if it is in syllabus	19.7
ii	Yes, as part of social service	63.6
iii	Yes ,only if certificates provides	7.6
iv	Not interested	9.1
8	Are you interested in maintaining your class room clean?	
i	Always as a responsible student	78.8
ii	Only when teachers requested	10.6
iii	Only if it is a part of evaluation process	6.1
iv	Not interested	4.5

STRATEGIC PLAN FOR IMPLEMENTATION OF WORK INTEGRATED HYBRID LEARNING

Creating awareness about proper waste disposal among staff and students are very important for the maintenance of clean and healthy environment inside and outside the campus.

It has been noticed that, before lockdown within five years of time period a school has generated around 2189.5 k of wastes which can be reused, recycled or reduced. More than hundred students got benefitted with the old donation programme. Active participation of School authorities, teachers, staffs, students and parents developed a kind of social awareness knowingly or unknowingly through regular practice or habituation.

Implementation of Work Integrated Hybrid Learning (WIHL) plays a vital role in the overall development of teachers and students. Strategic plan for the implementation of WIHL are as follows;

1. Time table for assignments

First day of every month assignment related to solid waste management can be uploaded in the School website. Due date can be the last working day of the month. Students shall be given the chance to fill the google form related to their assignment. They have to submit the evidences for the proof by uploading documents.

2. Lesson Plan

Teachers have to preplan all the monthly activities in the form of digital lesson plans and have to get uploaded in the school website. So that authorities and parents can get easy access towards the month-wise school activities of each subject.

3. Selection of activities

Activities and assignments should contain the essence of interest and quality. It can be developing an Inquiry approach of learning by doing online surveys, creative by making posters/slogans/essay writing, etc. students can give the chance to submit their entries for creative competitions through school website. Student's creative work can get published in school website.

4. Positive reinforcement

Positive reinforcements in the form of appreciations by announcing the names of active participants in assembly, providing certificates to the actively participating teachers and students, Overall trophy for the best Eco- class during school annual day function.

5. Seeking support from Local body/Municipality /co-operation/Government organisation/TERI

Government always supports cleanliness mission, attempts can be made to involve to get support from Governmental /non-governmental organisations for the Waste management activities.

Ex: - Activity-1

Collection of the empty milk packets by students and teachers from home to school. Some dairy farms like Goa dairy farm accepts the milk packets and they provide payment to school. School can utilise the fund for Waste management activities.

Activity -2

Collection of unused or old electronic devices can be collected from persons who are interested to donate or through auction. These devices can be given to the students to who needs it to attend digital classes.



Activity-3

Authorities can contact the mobile network holders through proper channel to provide network connection and tower connectivity to easy access of internet to the students.

Activity-4

Schools can actively participate in the awareness programs organised by organisation to create social awareness on waste management among students and public.

6. E-certificates

Many institutions utilise the major part of their fund for the Certificate making. In this pandemic condition, institutions can provide online workshop for the teachers, computer science students to make them aware about the technology to prepare E-certificate .So an effective way of reinforcement can develop without wasting fund.

7. Utilisation of Resources

Many teachers doesn't have advanced mobile phones or computer. If Institution provides Laptops / Tablets /Computer through schemes such as low cost /instalment schemes through salary deduction. Collection and reuse of electronic devices can also be done with the co-operation of social servicing organisation and awareness campaigns. If authorities motivates and appreciates hard working teachers, then our nation will get a good resource of dedicated teachers .No virus can stop the sincere and dedicated teachers from their responsibilities and teaching.

Teachers are the educators and counsellors who works for the benefit of the students. Education institutions plays an important role creating good platform for the teachers and students. It has been observed that, continuous monitoring, motivation and counselling by the teacher through Work integrated hybrid learning can improve the learning skill among students and achieve goal to attain good overall development.

Free yourself from all negativities, target your goal, put your effort to achieve .If a student have words to say a few good words about his / her teacher even after his/her school days, then that will be the best achievement for a teacher.

“Teachers can make children to touch the sky by touching their heart”

REFERENCES

1. https://www.researchgate.net/publication/329060276_PEDAGOGY
2. <http://www.youthpolicy.org/blog/youth-policy-reviews-evaluations/state-of-youthpolicy-2014>
3. [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(16\)00579-1/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)00579-1/fulltext)
4. “Our future :a Lancet commission on adolescent health and wellbeing”,2016,George C Patton, Susan M Sawyer et al
5. PEDAGOGY-Handbook for teaching in local language by National Curriculum Development Centre (NCDC)
6. Pedagogy of the Twenty First Century: Innovative Teaching Methods, by Aigerim Mynbayeva et al .published on 2017
7. Lecture notes taken from SWAYAM - ARPIT Courses;
 - (a) Pedagogical innovations and research methodology
 - (b) Development of self-learning materials
8. “Social surveys about solid waste management within Higher Education Institutes: A comparison”, by Navarro Fernando et al in Sustainability, 2017, 9,391.
9. UNICEF Strategic Plan,2018-21: Executive summary (http://www.unicef.org/publications/index_102552.html)
10. “We the Future-For and with adolescents in South Asia” (<https://www.unicef.org/rosa/what-we-do/adolescents/we-future>)
11. “Integrated Learning and Interdisciplinary Studies”, Klein, Julie Thompson ,2005 ,Peer Review,vol.7,No.4