

SPECIAL POINTS OF INTEREST:

- Waste Management
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*“ Innovation comes
from, one,
acknowledging
yourself; two,
studying and
understanding the
problem; and three,
finding a solution.”
- Marley Dias*

Editor:

Dr. Sujata Santosh

Editorial Team:

Dr. O. P. Sharma

Dr. Jyotsna Dikshit

Dr. Moumita Das

Innovations in the Area of Waste Management

At present 62 million tonnes of waste is generated in India. Out of this only 11.8 million tonnes of waste is treated and the rest is dumped in the landfills. There is an immediate need to manage the waste in a sustainable manner because improper waste management leads to adverse effects on the environment and human health. The solution to this is not mere taking legal action or starting campaigns, but can be done through technology interventions, decentralisation and active involvement of all the stakeholders. The efforts to reduce waste generation are already going on, and several individuals, companies and organisations have taken measures according to their interest, capacity and need. As waste management climbs the political and environmental agenda, there is a tremendous pressure on industries to devise appropriate and innovative mechanisms. In view of this, a number of innovations in the area of waste management have taken place at small and large scale towards providing promising solutions to the problem of waste management in the country. It is interesting to note that most of these innovative measures are cost effective and can be easily taken up by the companies and organizations.

Let us explore some innovations in the area of waste management

- **The Swachh Bharat Recycling Machine:** The Swachh Bharat Recycling Machine at Mumbai is one of its kind. The commuters traveling by train in Mumbai are able to dispose their plastic bottles in an eco-friendly way. The machines look like a vending machine and is as big as a refrigerator. Anybody can feed an empty plastic bottle into the machine which will then be processed and crushed. Later, it will be recovered and recycled. Every time someone deposits a plastic bottle or the caps, in return they get a reward for a job well done. The reward may be in the form of discount coupons from Sahakari Bhandar and Reliance Fresh Stores. The first such machine was set up at the Church gate railway station. The collected plastic is then sent to recycling plants instead of landfills. Till now, the machines, installed at a few railway stations, have been hugely successful among the city's commuters. Through Swachh Bharat Recycle machine one aims to become a Global Corporate

Citizen, committed to recycling every PET bottle that is thrown into the waste.

- **Plastic to Pavement:** Plastic Man of India, Prof Rajagopalan Vasudevan, Professor of Chemistry at Thiagarajar College of Engineering, Madurai devised solutions to the garbage generation by using it in road construction. Vasudevan came up with this idea, seeing his city's surrounding field piled with trash. When plastic along with other waste gets burnt, it releases dioxins and other toxic substances into the air. To prevent this, Prof, Vasudevan came up with the idea of "plastic to pavement" technique. The plastic waste can replace 15% of more expensive bitumen in the mix used to lay roads. This technique holds the potential of cleaning up countries overnight given its simplicity as it does not require significant technical knowledge nor large investment or changes to existing road-laying procedures. It has already been tested in India, where more than 5,000 kilometres of plastic roads have been laid in at least 11 states since 2004. The roads made from waste plastic are more durable against extreme weather conditions like floods and heat as compared to the conventional roads, points a report by World Economic Forum.
- **Edible Cutlery:** The single use plastic spoons are a nightmare for the environment because of their less utility life and more shelf life. To provide a solution to this problem, Peesapathye, a former researcher at ICRISAT came up with an innovative idea. He gave the concept of edible cutlery as first "eat from it" and then "eat it". For making edible cutlery, Peesapathy uses sorghum (jowar), wheat and rice flour. There are plain, savoury and sweet spoons made and one can choose from ginger-cinnamon, ginger-garlic, cumin, black pepper, etc. He elaborates "as they are baked in high temperature, the moisture is very less. For people who cannot bite the spoon, it can be left to decompose."
- **Serving the Needy:** Food wastage is everyone's problem. It's not something that is just for big companies to provide a solution for, the responsibility belongs to everyone. Taking this forward, in South India, Minu Pauline, owner of popular food joint Pappadavada in Kochi, installed a 420-litre fridge outside her restaurant to be used exclusively to store food for the hungry. Passersby are free to donate food, so that homeless and hungry people have access to food whenever they need it.
- **Blessing Palms:** The unique properties of coconut palm leaflets make it a perfect material to roll them into straws. It doesn't get soggy and retains its shape for hours together. It easily has a shelf life of three months. Nearly 300-400 straws can be made from a single compound leaf of coconut. Moreover, the straws are made from the fallen leaves. The straws which are made with its mid rib as part of the leaf can be easily used for tetra packed juices, as it can puncture the seal. These straws are 100 % biodegradable and provide an excellent opportunity of livelihood for the communities in rural areas.

Houses from coconut shells: Coconut shells clog Mumbai's drains during the monsoon contributing to flooding and also become the breeding grounds for mosquitoes. They are very tough and take a long time to disintegrate and find their way to landfills. With an aim to address the issues of waste management, sustainability and the well-being of citizens, Mr.

Manish Advani, a city resident has found creative uses for the shells, preventing them from being tossed into the waste. These shells are given as gifts in the form of planters which are highly appreciated. The students also use them for planting saplings, which were then distributed to various corporate offices. The painting on these coconut shells is also very popular. With the help of Jayneel Trivedi, an architect from Pune and 20 students from Somaiya College, Mumbai, the first house made of coconut shells as a sustainable intelligent design for

- help of Jayneel Trivedi, an architect from Pune and 20 students from Somaiya College, Mumbai, the first house made of coconut shells as a sustainable intelligent design for rural housing and low-cost slum dwellings was built. With the BMC's support, almost 800 shells weighing about 1.2 tonnes were collected from coconut vendors, sun dried and seasoned for 7-8 days after which they became just like wood. They were then cut, fitted and treated with a polyurethane coating. The actual construction of the house took 5-6 days. It was also economical, as an 8 x 8 square feet house cost total Rs. 15,000.
- **Papaya Stalk as Straw:** Papaya stalk can also be used as an alternative for plastic straws. For example, Thangam Pandiyan, a resident of Madurai in Tamil Nadu, is using papaya stalk to serve fresh, cool and tender coconut. He got this idea to use Papaya stalk as an alternative for plastic straws, when the state government banned plastic use recently.

Conclusion

There is a strong need to limit our consumption and waste generation. Single use plastics, disposable items, Waste from Electrical and Electronic Equipments (WEEE), etc., have a long degradation time and persist for several years in our environment. The waste management measures must promote innovations at individuals and organizational level. There is a strong need to popularise the innovations done so far which can bring in economically feasible alternatives. We must realise that innovative solid waste management is the key driver for resource efficiency.

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Dr. Deeksha Dave
Assistant Professor,
SOITS, IGNOU
Email: deekshadave@ignou.ac.in

Creating 'Digital Master of the Study Material' of IGNOU

Print Self Learning Material (SLM) is the key component of teaching-learning in the ODL System, so is the case with IGNOU. In IGNOU more than lacks of Books in the form of Blocks are prepared and printed for more than 3000 Courses covering about 300 Programmes. Once prepared, the study material of all the Courses is printed every year for more than 5 lakh students every year. For printing of any kind of study material, first its Camera Ready Copy (CRC) is prepared using some DTP software, then the study material is printed. This soft copy is considered to be the 'Digital Master of the Study Material'. If the Digital Master in proper format is preserved and stored in the form of a digital repository, it can be used any time for re-printing of the material, editing and updating of the material and also for converting into e-books.

Why should we Create Digital Master?

In fact, in a vast institute like IGNOU, the Digital Master of the study material should be given utmost importance and it should be maintained with great care in a very systematic way. The creation of Digital Master will help in following :

- Management of content in digital format for longer life of SLM.
- Easy editing and updation of the SLM without going for fresh type setting.
- Distribution of the study material in more than one format like PDF, Audio, e-Pub, Print, Braille, Large Font, etc.
- Creating searchable meta data for the entire study material.

In fact, we find that the print is the most vulnerable form of study material, therefore need is to create the Digital Master of the study material which is the future proof material.

How to create Digital Master of Study Material?

In order to create Digital Master of the study material, following should be considered :

- While doing DTP and Page Design of the study material, it should be kept in mind that the final soft copy is in the universally accessible format.
- Presently besides XML format, the Indesign software is the best option for DTP and Page Designing of the study material. Because Indesign format can be easily edited and converted into other format like e-pub, audio and e-books, etc.
- Only Unicode fonts for the study material in Indian languages should be used. Otherwise the Non-Unicode fonts are not sustainable in long run. Moreover, it will be helpful for the students with disability.
- Authors themselves should be asked to submit the content in Unicode fonts. Proper guidelines should be issued to the Authors, Editors and Page Setters to bring uniformity and consistency in the Digital Master Development.

Storage of Digital Master

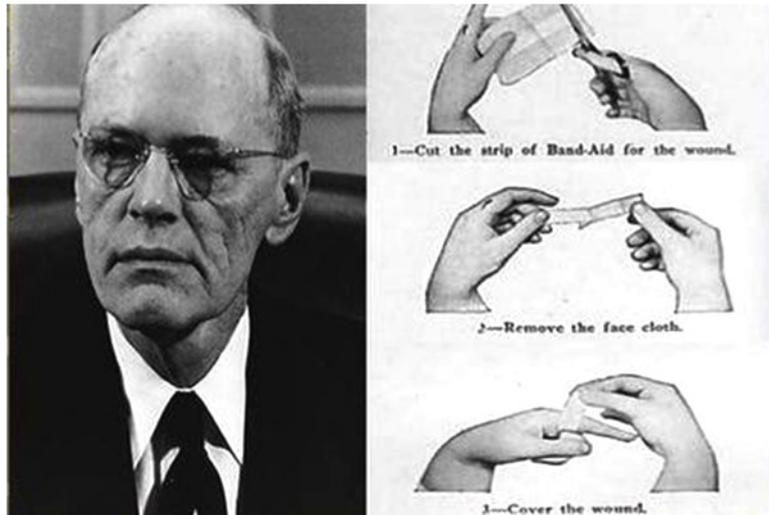
Proper storage of the Digital Master of the study material is important for its safe and easy retrieval. Earlier such digital masters were kept in CDs and DVDs in safe custody of the Printing Division or concerned faculty. But with the emergence of new technologies and facilities, now it is preferred to store on server or in cloud space. Normally, it is suggested that the Digital Masters should be stored in at least two formats – in original format and pdf format which should be accessible to the authorized persons in the concerned Schools or Division. There should be a proper backup plan also for all the Digital Masters to meet any adverse situation and disaster recovery.

Dr. Oum Prakash Sharma,
Director, NCIDE

Extraordinary Tales of Ordinary Innovations

BAND AID

Band aid is today an essential component of every first aid box. But, do you know that merely 10 years ago there was no band aid. Even for the dressing of very minor injuries, a person had to wait for an assistant. As told by Vigyan Ratna Laxman Prasad to Mr. R.S. Dass, there is an interesting story behind it. He told that the band aid evolved as the part of a love story of a newlywed couple of a lower middle-class family.



Earle Dickson was a cotton supplier to medical giant Johnson and Johnson. When Earle got married, his beautiful wife Josephine used to keep herself busy in household chores to turn her home into heaven and in that effort usually suffered with cuts, bruises and burns on almost daily basis. In the evening when her husband would return, he would apply medicine and dress the injury, because for any dressing normally both hands are required. During his absence, it would have been difficult to do dressing of her cuts and wounds herself. This worried Earle a lot. He started thinking of ways and means through which his dear Josephine may dress up her wounds single handedly on her own. This was an idea to find solution to a problem. He performed experiments and finally prepared band-aid.

For preparing band aid Earle spread surgical tape on the table, cut and pasted square pieces of cotton-gauge at regular intervals on it. Further, he secured the tape with cotton strips so that it may easily stick to the skin and may also be removed with ease when injury is cured. This proved to be so helpful that he showed his aid to his boss. The astute businessman was quick enough to perceive the business prospects for the invention and started its production in 1920 with the brand name Band Aid.

The sale of band aid steadily increased and it got popularized as a first aid device the world over. Earle Dickson also rose in position on the staff of Johnson and Johnson as the sale of band aid increased and got retired as its Vice President in 1957. It is important to mention that the Band Aid is still the highest earning product of Johnson and Johnson and the company is improving it as per market requirements.

Courtesy: Innovate India, October-December, 2017

InnovationClub@IGNOU Meeting

Brainstorming on Innovations in the Counselling Sessions for ODL Learners

A meeting of the Innovation Club@ IGNOU was held on 21st February, 2019 at 11.00 am at the Conference Room, NCIDE, IGNOU. The main objective of the meeting was to have a brainstorming session focusing on Innovations in the Counselling Sessions for ODL Learners.. A total of 15 members were present in the meeting.

The Coordinator Innovation Club@IGNOU, Dr. Sujata Santosh, welcomed all the members and participants and initiated the meeting. Dr. Oum Prakash Sharma, Director, NCIDE addressed the members and said that besides brainstorming on the current and relevant issues of the ODL system, the innovation club aims at identifying the areas of innovation in the ODL system in general and IGNOU in particular. He emphasized that in the changing scenario there is a need of systemic changes and re-engineering the process in the ODL system. The various gap areas in the system and the existing problems need to be identified, and related solutions need to be provided. Innovations in counselling sessions are very important to revitalize the system and add to the significance and relevance of counselling sessions for the ODL learners. The members thoroughly discussed and provided the following observations and suggestions:

- There should be model counselling sessions for all the programmes to motivate and guide the new academic counselors highlighting the innovative and unique features of the model counselling sessions.
- There is a strong need to motivate the counsellors and proper orientation programmes should be organised for them highlighting the difference between classroom teaching and counselling.
- There is a need for consolidation of counselling sessions, classes and study centres, particularly in the study centers where numbers of students in a particular programme / course is very less.
- Proper training should be provided to counsellors highlighting the difference between the counselling and class room teaching. They should be trained on how to best utilize the limited counselling sessions. There is a need to understand the various problems in counselling and how the available technologies can be used to address those requirements.
- Virtual counselling sessions could be used to reach out to the distance learners.
- Proper guidelines on how to conduct counselling sessions should be prepared. These should also have guidelines for use of existing and upcoming tools and technologies for counselling sessions. This will help in empowering the distance learners.
- Training and motivation of the counsellors are two aspects that need to be taken care of. Besides, the best practices in counselling should be identified, compiled and disseminated among the Academic Counsellors.
- A synopsis or gist of the course material in audio/ video format should be provided to the learners. This will help in introducing uniformity and standardization in the system. This will be especially beneficial for the disabled/ blind students as it will provide easy access to the basic information about the course.

The members emphasized the need for innovation in the academic counselling sessions for ODL learners.

Dr. Sujata Santosh
Assistant Director, NCIDE &
Co-ordinator InnovationClub@IGNOU

IGNOU to organize a Festival of Ideas under the aegis of Institution's Innovation Council (IIC)

The Festival of Ideas is being organised by the National Centre for Innovation in Distance Education (NCIDE) under the aegis of the Institution's Innovation Council (IIC) on 28th February and 1st March, 2019 at IGNOU, Maidan Garhi, New Delhi. The objectives are to recognize, share, nurture and promote the ideas of the students of IGNOU. For this Festival, ideas of the IGNOU students were invited from all over India. The following were the themes in which ideas were invited:

- Food, Agriculture and Rural development
- Clean Energy and Alternate Fuel
- Clean Water and Water Management
- *Swacchata* Initiatives and Waste Management
- Health Care and Hygiene
- Education and Open University System
- Smart Transportation and Traffic Management

One hundred and twenty ideas were received from the students from across India. These ideas were evaluated by a panel of experts and the best twenty ideas were selected. These selected students have been invited to participate in the Festival.

The duration of the Festival will be of two days. It will have two parts. In the first part, an exhibition of ideas will be organised in which an idea competition will be held through posters and oral presentation. Three winners will be selected by a panel of judges and awarded. In the second part, a workshop on Business Plan Development will be held for all the selected students. The workshop is aimed to impart knowledge and skills related to Intellectual Property Rights, Design thinking, and Business Plan Development.

This Festival aims to facilitate the students to show their talent, test their ideas, connect with mentors, challenge themselves to think innovatively, and win exciting prizes. This would help the students to enhance their social and emotional learning, while boosting their competitive spirit. The training workshop on Business Plan Development will facilitate them to convert their ideas into innovative products and services. It is planned that the fully developed business plans created by these twenty students will be submitted to the MHRD Innovation Cell in October 2019.

Dr. Moumita Das
Assistant Director, NCIDE
Email: moumitadas@ignou.ac.in

IGNOU Campus as a Plastic Free Campus

As part of the Swatch Bharat Abhiyaan, NCIDE has initiated a project on 'Zero Waste Campus'. For this purpose, NCIDE has taken certain steps including waste audit in the IGNOU campus and constitution of committee for Zero Waste Campus.

As a first step in this direction, it is decided to make IGNOU Campus as a **Plastic Free Campus**. For this purpose, Administration Division has issued a notification mentioning the following:

- Use of bottled water in plastic bottles in the Meetings/Workshops, etc. should be discouraged. In place of the plastic bottles, water dispensers with paper cups or glasses should be used as were used earlier.
- Use of plastic cups or plates for serving Tea/ Coffee and snacks, etc., by the Canteen or Dhabas in IGNOU Campus should be banned. Instead paper cups or ceramic cup/plates should be used for all purposes.

In this context, it is to stress upon that simply issuing a notification is not sufficient. In fact for making IGNOU campus as a Plastic Free Campus, it is necessary that all of us should discard the use of plastic and polythenes in on day to day activities including meetings, etc. this step will certainly help in making the environment clean & green and making our earth a safe place for our future generations.



Prof. Ravindra Ramachandra Kanhere has joined as Pro-Vice Chancellor of IGNOU. Having administrative and academic experience of more than 35 years, he has also served as Exam Controller in M.P. Public Service Commission and started online exams. He has also worked as the Vice Chancellor of M.P. Bhoj Open University. He has previously contributed as NSS officer and NSS District Coordinator.

NCIDE

The National Centre for Innovation in Distance Education (NCIDE) was established in December 2005. It is a facility for promoting, supporting, re-engineering and disseminating innovations in Open and Distance Learning (ODL) system. The NCIDE is a ground for nurturing bright and inquisitive minds whose ideas and explorations are expected to revolutionize the ODL system to suit the needs of Gennext. The Centre's goal is to develop a culture of continued search for new and innovative solutions to offer seamless education for all, achieve cost efficiency in its operations and provide borderless access to quality education and training.

We look forward to receiving your suggestions for this e-newsletter. We also welcome your contributions for the future issues. Please send us your emails at: sujata.santosh@ignou.ac.in or ncide@ignou.ac.in

For more information please contact:

National Centre for Innovation in Distance Education,
Block G, Zakir Hussain Bhawan, New Academic Complex,
Indira Gandhi National Open University, Maidan Garhi, New Delhi-110068
Phone: 011-29536413, Fax: 011-29536398