



Awareness of Waste Management For Better Environment: A Critical Survey Among Prospective Teachers

Dr. K P Anil Kumar

Assistant Professor, NSS Training College, Ottapalam, Kerala, Inida - 679 101

ABSTRACT

The waste management has become a serious problem even for the developed countries as it needs immense investment for the disposal or recycles waste into other forms of non-polluting matters. Improper waste management has been affecting the local communities as a threat to the environment. Now the time has exceeded to have a rethink about the developments; whether it is sustainable or not.

If education is the process of shaping the character of an individual so as to make him fit for the future society and the world at large, the teacher has an important role. A teacher who knows the importance of environmental protection should always stick on clean and unpolluted surroundings. This message and habit should be inculcated in children from their child hood itself. This study is developed to find out prospective teachers' awareness of waste management.

Objectives of the study are to find out the level of awareness, action competency and practice in waste management among prospective teachers and to find out the difference in awareness, action competency and practice in waste management among prospective teachers of arts and science subjects.

It is found out that most of the student teachers are possessing high level of awareness on waste management and a very less number of student teachers are with low level of awareness. Though most of the student teachers are with high level of action competency, it is not satisfying. Action competency in waste management should be developed more in prospective teachers. The prospective teachers who belong to the arts stream should be given more awareness in the social issue and they should get the chances to study about proper waste management system and a practical knowledge should be developed in them.

KEYWORDS : Municipal Solid Waste, Waste Management, Action Competency, Prospective Teachers

All countries of the world face with severe crisis of waste disposal. Along with industrialization and development all over the world, waste became huge byproduct. The waste management has become a serious problem even for the developed countries as it needs immense investment for the disposal or recycles waste into other forms of non-polluting matters. Improper waste management has been affecting the local communities as a threat to the environment. Now the time has exceeded to have a rethink about the developments; whether it is sustainable or not. Even space, ocean and the lands like Antarctica became polluted by the irrational greed of human beings. Countries like India with over population facing more crisis than any other countries in the world. As it is the fact, there is high necessity of researches in the field of waste management for a better environment. Because the next generation has the right to relish with non-polluted air, water and soil.

Waste materials are materials that are not prime products for which the generator has no further use in terms of his/her own purposes of production, transformations or consumption and of which he /she wants to dispose. Waste may be generated during the extraction of raw materials, the processing of raw materials into intermediate or final products, the consumption of the final products and other human activities. (The United Nations statistics division - UNSD)

Concept of waste

Waste is a human concept as there are no such things as waste in nature. The waste products created by a natural process or organism become the raw materials used by other process or organism. Recycling is predominant, so production and decomposition are well balanced and nutritional cycles continuously support the next cycle of production and it ensure stability and sustainability in nature system. But the man-made systems stresses on economic value of nutrition are the dominant economic activities. These systems always try to destruct the environment as they require massive consumption of natural resources. The wastes come out will damage the environment and require more natural capital in order to keep the system. This is not sustainable as the resources and spaces are finite. The presence of waste reduces the earth's capacity to keep and supply new raw materials for the future generations. So it is the duty of the man kind to find effective solutions to overcome this crisis along with developments.

The waste is classified into three depending on the source

1. House hold waste generally called as municipal solid waste
2. Industrial wastes as hazardous wastes
3. Bio medical wastes as infectious wastes.

The present study is focused on the management of municipal solid wastes.

Municipal Solid wastes

Municipal solid waste consists of house hold waste, construction and demolition debris, sanitation residue and waste from streets. This garbage is generated mainly from residential and commercial complexes. Hike in urbanization and change in life style, food habits the amount of municipal wastes has been increasing rapidly. In 1947, cities and towns in India generated an estimated 6 million tons of solid waste. In 1997, it was about 48 million times. More than 27% of municipal waste is not collected at all. 70% of the Indian cities lack adequate capacity to transport it and there are no sanitary landfills to dispose the waste. The existing landfills are neither well equipped nor well managed and are not lined properly to protect against contamination of soil and ground water. (Edugreen.teri.res.in)

The condition is worse in the present decade. Here comes the importance of a teacher. If education is the process of shaping the character of an individual so as to make him fit for the future society and the world at large, the teacher has an important role. A teacher who knows the importance of environmental protection should always stick on clean and unpolluted surroundings. This message and habit should be inculcated in children from their child hood itself. For this, teachers should be aware of the wastes and proper waste management. Keeping this in mind this study is conducted in prospective teachers who are doing their degree in bachelor of education belonging to various subjects such as Malayalam, English, social science, natural science, physical science and mathematics.

Objectives of the study

To find out the level of awareness, action competency and practice in waste management among prospective teachers.

To find out the difference in awareness, action competency and practice in waste management among prospective teachers of arts and science subjects.

Methodology

Normative survey method is used for this present study

Sample

Sample consists of 72 prospective teachers belonging to Malayalam, English, Social science, Natural science, physical science and Mathematics 12 from each subjects of a training college based on stratified random sampling technique.

Tool

Tool used for the study is 'the Inventory for measuring the Awareness, Action competency and Practice of the Prospective Teachers'. The tool is developed by the investigator.

Data collection procedure

Data collected from prospective teachers of NSS Training College, Otapalam, Kerala in a client friendly approach.

Analysis and interpretations

For collecting the data investigator has circulated the inventory among 72 prospective teachers- 12 students each from Malayalam, English, social science, physical science and mathematics optional subjects. The inventory contains 48 questions. Among them, 16 questions are related to awareness on waste management, 16 under action competency and the rest 16 are about the practices on waste management. In the awareness dimension, the questions asked are based on the knowledge of the students about waste and waste management. In action competency, the questions asked are about their readiness for proper management of municipal solid waste and its disposal systems. Under the dimension waste management practice, the researcher collects data in order to know whether prospective teachers are practicing waste management properly in their day today life. Each question has two options as answers and each right answer carries one mark. Therefore the total marks under each head are 16. The score may vary from 0 to 16. The scores of the students are divided into three as high, average and low levels of awareness, action competency and practice. The student teacher scores 13 or above in each sect is considered student with high level of awareness. Scores 10-12 is considered as average and below 10 scores are considered low level of awareness, action competency and practice.

Score of each student were tabulated and segregated them to High, Average and Low groups. The consolidated scores and the corresponding level of the students are furnished in Table on to Table 3.

Table 1
Score of the level of awareness of student teachers on waste management

N= 72

Sl. No	Level of awareness	Number of students	Percentage (%)
1	High	34	47.22
2	Average	30	41.66
3	Low	8	11.11

From the table, it is clear that, there were 34 students out of 72 have high awareness on waste management. It means 34 students out of 72 gained 13 or more score in the 16 given to the sect of awareness in the inventory. 30 student teachers have average level of awareness with a score in between 10 and 12, and 8 of them have low level of awareness in waste management with a score of 9 or below. Based on the analysis it can be stated that most of the student teachers are possessing high level of awareness on waste management and a very less number of student teachers are with low level of awareness.

Table 2
Score of the level of action competency of Student teachers on waste management

number	Level of awareness	Number of students	Percentage (%)
1	High	38	52.77
2	Average	22	30.55
3	Low	12	16.67

When we consider the action competency, 52.77 % of students have high level of action competency. 30.55 % of students have an average level of action competency and 16.67 % of students have low level of action competency. It is clear that student teachers are varied on the variable action competency. Most of the student teachers are having high level of action competency.

Table 3
Score of the level of Practice of Student teachers on waste management

number	Level of awareness	Number of students	Percentage (%)
1	High	8	11.11
2	Average	30	41.66
3	Low	34	47.22

In the case of practice in waste management it is disappointing to note that only 11.11% of prospective teachers are practicing waste management in a higher level. 41.66 % of students are practicing waste management in an average level and 47.22 % of students fall in low level of waste management practice. Though most of the student teachers are having high level of awareness, they are having very low level of action competency. It is very contradictory.

Discussion

Most of the student teachers are having high level of awareness. Of course, most of the student teachers are having high awareness, but it is not satisfactory. All of the student teachers must have high level of awareness.

In the case of action competency, 52.77 % are having high level of action competency. Average level of action competency can be seen in 30.55 % students and the balance is with low level of action competency. Though most of the students are with high level of action competency, it is not satisfying. Action competency in waste management should be developed more in prospective teachers.

In the case of practice in waste management, it is disappointing to know that the higher level of practice can be seen only in 11.11 % of students. The prospective teachers who have to play as role models are very pitiable in the case of practice. It is clear that even though most of the student teachers are aware of waste management and also having action competency, most of them are not practicing it in their day today life. So there should be ample opportunities for the prospective teachers to practice the right model of waste management. They should have to develop readiness to practice the waste management.

To find out the difference in prospective teachers of arts group and science group the investigator divided the prospective teachers into two groups as arts students studying English, Malayalam and social science optional subjects and as science students studying in physical science, natural science and mathematics optional subjects. The total marks scored by the arts students and science students under each category were calculated separately and found the percentage.

The score is calculated on the basis of the total score the obtained for the total questions in the inventory. The total items for inventing awareness, action competency and practice are 16 and number of students are 36 for arts subject and science subject. Then the total score will be $16 \times 36 = 576$. The obtained score for awareness in arts subject is 412 and science subject is 458. It is 422 and 438 respectively in action competency and 332 for arts subject and 368 for science subject in the case of practice. Details are given in table 4.

Table 4
Total score obtained by arts and science optional subject groups in awareness, action competency and practice

Serial number	dimensions	Score of students from arts subjects	Percentage	Score of students from science group	Percentage
1	Awareness	412	71.53%	458	79.51%
2	Action competency	422	73.26%	438	76.04%
3	Practice	332	57.64%	368	63.88%

The students from science group have scored 79.51 % of marks for awareness and 71.53% by arts students. When considering action competency the prospective teachers from science stream have scored 76.04 % and arts students scored 73.26 %. In the case of practice in waste management the students of science group scored 63.88 and 57.64 scored by arts students. From these, it is clear that students from science group are outnumbered the students from arts group in awareness, action competency and practice

Even though, it is generally saying that arts students are more social-ly committed or working with communities more than the science group students they lack awareness, action competency and practice of waste management in their daily dealings. So the prospective teachers who belong to the arts stream should be given more awareness in the social issue and they should get the chances to study about proper waste management system and a practical knowledge should be developed in them.

Conclusion

From the findings of the study, it is clear that the science students are more aware, more action competent and they practice more in waste management than the prospective teachers of arts stream. From the light of the analysis, it can be concluded that in teacher education colleges there should be programs for making the prospective teachers more aware, more competent and practice more in waste management both in science and arts group of student teachers.

Though the curriculum and syllabus prevailing in our universities contains papers on environmental education, waste management practices haven't got much importance. Even well educated people are not practicing waste management (proper disposal of waste) either at home or at public place. Thus waste became a serious barrier in our way to development. If we can make all types of people aware of this serious issue and make them practice the proper way of waste disposal, it will support nation to play an important role in the sustainable development of its own and the world at large.

In the light of this investigation, it is suggested that waste management should be included in the curriculum and the proper practice should be assured by the student teachers, because they are the moulders of the future generations. Every individual in any institution must take steps to do social practices for cleaning institutional premises, public places and their own houses. The programmes "Swatch bharrath" announced and initiated by the honorable Indian Prime Minister Sri Narendra Modi should be shouldered by all institutions especially educational institutions and Teacher Education institutions. 'No nation can go beyond the level of its teachers' is a saying. So the teacher education institutions should be developed in such a manner that the future generation will safe in their hands of the teachers who are getting adequate training in waste management along with other subjects.