

## SANITARY FACILITIES MANAGEMENT OF GOVERNMENT AND PRIVATE SCHOOLS IN NEPALGUNJ SUB-METROPOLITAN CITY

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### *Abstract*

*The purpose of this research article is to examine the existing situation of sanitary condition and to find out the management of sanitary facilities especially focusing on government and private schools of Nepalgunj Sub-metropolitan city of Nepal. This research has included the major parts of management of sanitary facilities i.e. water supply, toilets facilities, waste disposal system and drainage system. A descriptive type of survey method was conducted among the government and private schools of Nepalgunj Sub-metropolitan City. The research used multi-stage sampling method for this study. Out of total schools, seven government and seven private schools were selected by simple random sampling method and their headmasters/ principals were selected from census method. This study was mainly based on primary data. Interview schedule and observation checklist were used as the tools and collected data were analyzed by using simple arithmetic mathematical method. The major finding of this study that government and private schools had inadequate management of drinking water, toilet for students, draining system, ventilation, and other necessary things for sanitation. On the basis of the survey, the researcher concluded that the existing environment of the government and private schools were not found unitary. The considerable factors while constructing the school building such as site, land, playground lighting, ventilation, garden, however were better managed in government schools.*

**Keywords:** Sanitation, Management, healthy school environment, waste disposal

### **INTRODUCTION**

Sanitation is the branch of health. It is also called foundation of healthful living which shows the status and living standard of human being. The word sanitation is derived from the Latin word "Sanitas", which means a state of health, the dictionary meaning of the sanitation is 'the science of safe guarding health'. According to the National Sanitation Foundation of the USA, which follows "Sanitation is the way of life. It is the quality of living that is expressed in the clean home, the clean farm the clean business, the clean neighborhood and the clean community. Being a way of life it must come from within the people, it is nourished by knowledge and grows as an obligation and an ideal in human relation" (Park & Park, 2005). In fact, the term sanitation covers the whole field which promotes health.

Nepal is one of the developing countries in the world. The country is facing various health problems such as the prevalence of communicable diseases, lack of immunization, high mortality rate, and lack of basic health care facilities, malnutrition and high morbidity rate. Environmental pollution is also a very serious problem for our country. The environmental pollution is the result of human activities, which directly affects the health status of human being. Proper sanitation is essential to achieve the effects of such activities on the environment. The rapid growth of population and the

tendency of migration to the urban areas have magnified the problem of environmental sanitation (Khanal, 2007).

Education is that process, which plays an important role in maintaining environmental sanitation. Environmental sanitation has become a worldwide concern and people have thought about adopting an acceptable measure. Our surrounding plays a vital role in making us healthy or sick. For instance, carelessly managed sanitary facilities can cause harm in different ways. The polluted environment creates serious health hazards by providing ample opportunity to develop various diseases. Most of people are particularly susceptible to respiratory problems caused by dust, dirt and carbon monoxide gas emitted from exhausted automobile engines (Parajuli, 2052).

Health education is a key component of all environmental and sanitation programs. It involves motivation, counseling and advertisement in Medias on basic hygiene education. Health is a valuable property of human beings. It plays a vital role for physical, mental and social development of human beings. Human resource is an important source of construction and development of a country. It is related to good education system (Chhetri, 2052).

The educational institutions play important roles to get a good health and hygienic practices. It passes the knowledge of good health and hygiene through the kids to the elder relatives at home. However, if the kids in the school are not properly educated on how to use the latrine, if the school latrines are not maintained properly, this leads to the negative impact on the home and community (Turner et al., 1970).

Schools can share health education experience to its recipients in the society by organizing awareness campaigns regularly. This campaign can include several components which help promoting healthier living. A model school can follow similar way outs. Thus, sanitary facilities of a school depend on effective management and resources of the school. Students spend five to seven hours daily in the school. During this period, schools need to provide safe and healthy environment to them. "The school environment in which students and faculty live and move during the time they are in school not only affects their health but also provides a laboratory for learning about health practices and attitudes. As schools are dirty or clean, as food is appetizing or distasteful, as physical facilities are cheerful or drop, as materials and equipment are safes or dangerous, as schools are located in appropriate are or not, etc. It affects the health of the pupils and school personnel" (Turner et al. 1970). Only atmospheric school environment improves the physical, mental, social and emotional health of the pupil and gets chances to take healthful practices among them. This implies as well school location, toilet facilities, safe drinking water supply, waste disposal, buildings, ventilation and lighting classroom cleanliness, playground, safe food and other essentials (Turner et al. 1970).

Generally, many research tasks have been done on sanitary issues at the national and international level, but very few institutional research tasks are done on related exiting school sanitation. Thus, the secondary level Government and private schools of Nepalgunj Sub-metropolitan City of Banke district was be selected for the study. The researcher attempted to investigate the existing conditions of sanitary facilities of the schools comparatively.

## REVIEW OF LITERATURE AND RESEARCH GAP

Generally, some studies have been indirectly related on this subject but no study has been concerned mainly on it. So the study concerns specially on healthful environment between public and private schools comparatively. Here, the researcher tries to review some related literature as guidance to process the present variables systematically and scientifically.

A school survey reported by Wagle et al. (2049), concluded that the existing environment of the school was found miserable. The school building was constructed on slightly sloppy open land, not compounded, its surrounding open land had been used as play ground. According to the report drinking water was supplied insufficiently near to school building that did not meet school's daily demand. Report also showed that there was no electricity line, drainage system and latrine facility, open waste lands were used for dumping. Due to lack of peon, students were involved to clean class rooms, office rooms and yard for a while. Similarly, related school survey by Parajuli et.al. (2052), in the school of Tikathali VDC report, stated that there was lack of playground, a valuable ground also wasn't planned and swept, school building constructions were found on slightly sloppy land, not bounded by wall and one storey had three classrooms facing south. The blackboards and benches were also found in non-standard condition, latrines and water taps were not available. It was concluded that the physical environment of the school was found in unhealthy conditions.

Gauli (1992) conducted a research entitled "A critical study of sanitation and their management in public primary schools of Pokhara municipality" mentioned that water was available in all the schools but no good management system of portable drinking water that was stored in clay pots, bucket, drums, tanks, etc. Though all schools managed latrines, they were seen not clean and hygienic/sanitary. Similarly, the school implemented the different methods to dispose wastes like dumping, composting, incineration, etc. He concluded that the lack of the financial resources were the main factors for creating sanitary environment in the schools near the school building. It should be adequate arrangements for the sanitation.

Turner (1970) suggested that every school had responsibility for providing a healthful environment. The provision of healthful living or environment was in part the responsibility of the government, which provided the buildings, playground and physical facilities of the school together with the availability of such health services. In part, healthful school living was a responsibility of the teaching staff who conduct the education programmes. Pupil behaviors also militate for or against it. We were concerned in health education that the pupils should develop habit of hygienic living for living healthfully at school.

Chhetri (2052) presented a paper about healthful school environment. He mentioned that the safe and attractive school environment enhanced and supported to all the progress and achievement/output of the pupils. He emphasized that the crowded/noisy of congested environment adversely affected to the student's knowledge or learning experiences. In his paper, he also suggested that the school environment should be clean, healthy and attractive as far as possible.

Baidya (1982) had conducted a research work under the title of "A Need Based Master Degree in School Health Education for Nepal". He noted that fifteen types of major health problems were

existed in Nepal. Out of them, the unsanitary surrounding, prevalence of communicable disease, lack of health education, inadequate health services and lack of portable drinking water were serious ones. He emphasized and recommended that a well-planned professional preparation of school health education was essential to improve the health status of the student by providing quality health education.

From the above literature reviews, it can be generalized that all the communities and schools have the problems of management of healthful environment. It is found that most of the environmental aspects/parts of the school are not managed in healthful standard. Therefore, the researcher is intended to study the public and private secondary schools of Nepalgunj Sub-metropolitan City of Banke district in the present study.

### **DESIGN AND METHOD OF THE STUDY**

The researcher used quantitative and comparative method with survey research design for this study. Field surveys were carried out to obtain necessary information and the required data were collected from primary sources. The sanitary facilities and management were measured by interviewing the related personnel and observing the selected schools.

### **Population, Sample and Sample Strategy**

This study was conducted in the schools of Nepalgunj Sub-metropolitan City, Banke. There are twelve government and ten private schools. All the schools of the Nepalgunj Sub-metropolitan City and their headmasters were the population of the study. Out of these schools seven government and seven private schools were chosen from census method. Seven headmasters of government schools and seven principals of private schools were selected purposively as the sample of the study. Thence The researcher used Multi-stage sampling method.

### **Study Areas/ Field**

The study area was Nepalgunj Sub-Metropolitan City of Banke district which is situated in Mid Western Region of Nepal. The study will be focused on public and private school of Nepalgunj Sub-Metropolitan City. Most of the respondents are literate and depended on the agriculture too. Socio-cultural status of the people is conservative type. They believed in the traditional rites and rituals.

### **Data Collection Tools and Techniques**

After studying different books and research reports, the researcher prepared the semi- structured interview schedule with both close and open ended questions. Similarly check list were developed and used to collect information. The researcher will directly visit selected schools to observe the sanitary condition of those schools with pre-developed checklist. All the questions were kept sequentially into four parts i.e. water supply, toilet, waste disposal and drainage.

For the purpose of validation of the instruments, it was tested in three schools of Nepalgunj Sub-metropolitan City. Tools were revised on the basis of the result from the pre-test and suggestions given by the supervisor.

### **Data Collection Procedures**

The study was conducted after the approval of the proposal and receiving recommendation letter. Then, the researcher submitted the recommendation letter to the selected schools' headmaster/

principal and got permission for the research. Then after the headmasters/ principals were interviewed with the help of semi structured interview schedule in each school. The researcher observed the sanitary condition and management of selected schools. The researcher were used the relevant documents and data about different variables of the study.

## ANALYSIS AND INTERPRETATION OF RESULTS

### Drinking Water Supply in the Schools

Safe drinking water is a basic need of every human being. Most of the communicable diseases are largely extended due to the lack of safe drinking water. Health of the students is affected directly by ingestion of contaminated water borne diseases like typhoid, cholera, diarrhea, dysentery, hepatitis and worm infection are caused by contaminated water. There can be no state of positive health in schools without management of a safe drinking water supply. Therefore, the researcher collected information about availability of water and water taps, sources of water, storing of water container, cleaning of water container, handling processes of water and sanitary condition of storage foundation with the help of interview and checklist.

### Foundations of Drinking Water

The questions were asked to the headmasters/ principals and observed about the types of foundations of the drinking water in the respective schools.

**Table 1: Foundations of Drinking Water**

Types of Water Supply	Government		Private	
	No of School	Percentage	No of School	Percentage
Hand pump	7	100	6	85.71
Others	-	-	1	14.28

All of the government schools had only hand pump water facility whereas 85.71 percent of the private schools had hand pump available. But, remaining only one of the private schools had both piped water and hand pump facilities. It was also found that all of the government and private schools had their own private water supply foundations available. In fact, all of the schools of both government and private had not sufficient availability of water in the schools.

It can be concluded from above information that all of the schools of Nepalgunj Sub-metropolitan City had problem of drinking water. Only hand pump was found the main source of drinking water in the schools.

### Storage System of Drinking Water

Whether drinking water is very pure, the water is not drinkable unless the water container is clean. The researcher observed as well as asked the headmaster/ principal about the cleanliness condition of the water container. Almost all of respondents that they were cleaning the water container regularly and the observation also found that it was true.

The questions were asked to the headmaster and observed about the storing system of drinking water in the respective schools. The collected information about storing system of drinking water in the schools has been presented graphically in table 2.

**Table 2: Storing System of Drinking Water in the School**

Storing System	Government		Private	
	No of School	Percentage	No of School	Percentage
Drums	2	28.57	2	28.57
Claypot and Bocket	1	14.29	-	-
Tanks	4	57.14	5	71.43

Table 2 indicates that 28.57 percent of the both government and private schools used drum for water storage purpose. Likewise, one of the government schools used a clay pot/bucket. It was also noted that 57.14 percent of the government and 71.43 percent of the private schools used different types of tanks like zinc, metal, plastic, etc. for drinking water storage purpose.

### Handling System of Drinking Water

Also the questions were asked to the headmasters and observed about the handling system of drinking water in the respective schools. The collected information about handling system of drinking water in the schools has been presented in Table 3.

**Table 3: Handling System of Drinking Water in the Schools**

Handling System	Government		Private	
	No of School	Percentage	No of School	Percentage
Tap system	5	71.43	3	42.86
Jag and Glass System	2	28.57	4	57.14

Table 3 indicates that 71.43 percent of the government and 42.86 percent of the private schools had followed directly tap system for drinking. On the other hand, 28.47 percent of the government and only 57.14 percent of the private schools used utensils i.e. jug/glass for drinking water. It meant that most of the both government and private schools used tanks for drinking water storage. Likewise, most of the government and some of the private schools had followed tap system as drinking water. When we compared both schools, private schools were found to have better management of handling process of drinking water than that government ones.

Researcher also found that all of the private and most (71.43%) of the government schools used modern filters only for teacher's purposes. Similarly, regarding the cleaning condition of storage complex. It was found that some government and private schools were unsatisfactory and the drum and clay pot/bucket used in the schools were not found covered in good way.

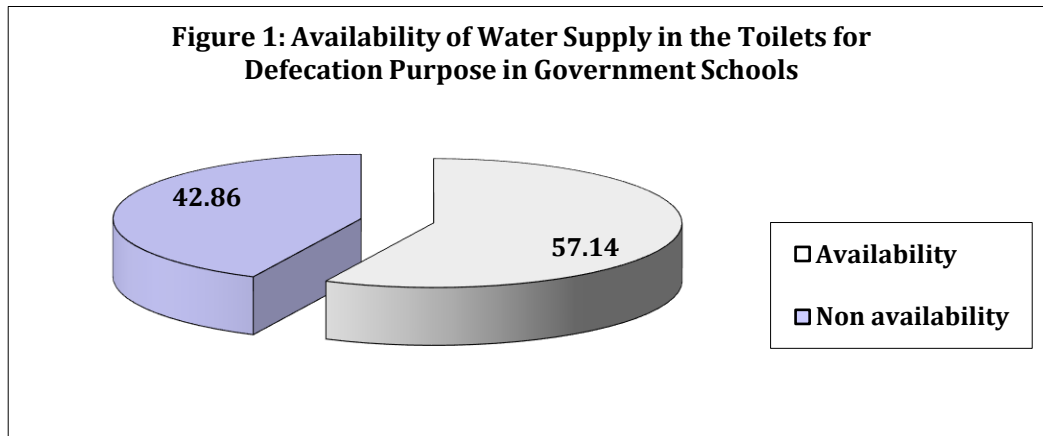
### Management of Toilet in the Government and Private Schools

Human excreta are a source of infection and disease transmission. It is a main cause of environmental pollution. Every school has a responsibility for its safe removal and disposal processes in a systematic way. So, interviews were taken and observation was made on management of toilet system in the schools. It was found that all of the government and private schools had availability of separate toilets with septic tank for girls and boys.

### Availability of Water Supply in the Toilets

The questions were asked to the headmasters and observed about the availability of water supply in the toilets for defecations purpose in the respective schools.

The collected information about availability of water supply in the toilets for defecation purposes in government and private schools has been presented in following figure.



Above figures 1 indicates that 57.14 percent of the government school had not availability of water supply in the toilet for defecation purposes. It means lack of cleanliness in the toilet of government schools.

Also the collected information about availability of water supply in the toilets for defecation purpose of private schools has been presented in figure 2.

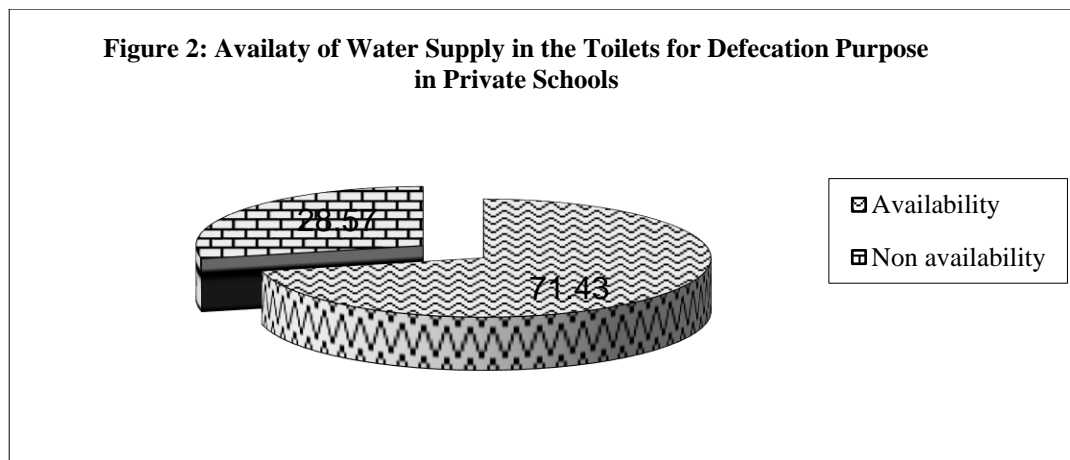


Figure 2 indicates that 28.57 percent of the private schools had not availability of water supply in the toilets for defecation purposes. Those government and private school also found lack of cleanliness in the toilets.

### Toilet Cleaning Schedule and Materials Used for Cleaning

The questions were asked to the headmasters about the cleaning schedule and materials used for cleaning the toilets in the respective schools. The collected information has been presented in the following table.

**Table 4: Cleanliness Schedule Used for Cleaning the Toilets**

Cleanliness schedule	Government		Private	
	No. of schools	Percent	No. of schools	Percent
Daily	5	71.43	6	85.71
Weekly	2	28.57	1	14.29

Above table indicates that 85.71 percent of the private and 71.43 percent of the government schools headmasters responded that they had cleaned latrines daily by assigned sweepers. On the other hand, 14.29 percent of the private schools and 28.57 percent of the government schools headmasters responded that they had latrine cleaned weekly. But some of their responses were not tailed to the exact condition of the toilets.

The questions were asked to the headmasters about the cleanliness materials used for cleaning the toilets in the respective schools.

The collected information about cleanliness materials used for cleaning the toilets in the schools has been presented in table 5.

**Table 5: Toilet Cleaning Schedule**

Cleaning	Government		Private	
	No of School	Percentage	No of School	Percentage
Only Water	2	28.57	2	14.29
Water and Brushing	3	42.86	1	28.57
Chemical Substance	2	28.57	4	57.14

Above table 5 shows that 28.57 percent of the government schools and 14.29 percent of the private school used only water for cleaning processes of the toilet. Likewise, 42.86 percent of the government and 28.57 percent of the private schools used water and brushing. On the other hand, 28.57 percent of the government and 57.14 percent of the private schools used chemical substances like phenyl, acid etc. for latrine clean. It meant that the most of both schools used water and brushing for cleaning process of the toilet. It was also found by researcher that most of private schools was found well management of latrine cleaner than government schools.

It can be concluded from above information that the most of the government schools had no management of sanitary toilets, they had lack of cleanliness and water supply. The numbers of toilets were found praiseworthy in respect to student's number in both schools. Though, average numbers of student's toilets were found more in government schools than private ones. But the toilets of private schools were cleaner and more availability of water than government ones.

### Physical Condition of the Toilet

The researcher observed the physical condition of the toilets of both schools. The collected information is presented in the following table 6.

**Table 6: Physical Condition of the Toilet in the Schools**

Physical Condition	Government		Private	
	No of School	Percentage	No of School	Percentage



Good	2	28.57	3	42.46
Satisfactory	2	28.57	2	28.57
Poor	3	42.86	2	28.57

Above table 6 shows that 28.57 percent of the government schools and 42.86 percent of the private school the physical condition of the toilets is good condition. Likewise 28.57 percent of the both government and private schools the physical condition of the toilets were satisfactory condition. On the other hand 42.86 percent of the government schools and 28.57 percent of the private schools, the physical condition of the toilets were poor conditions. It can be concluded from above information that the physical condition of the toilets of both school are very poor conditions.

### Waste Disposal Practices in the Schools

Proper disposal of waste materials is one of the laws of environmental health today. However, school needs basic knowledge and practices about the proper way of the waste disposal system. It helps to create the sound or esthete environment of the school compound and reflects the version of sanitation among the school family and community widely.

### METHODS OF WASTE DISPOSAL

The researcher observed and questioned to the headmaster and principal about method applied by schools for waste disposal. The collected information about waste disposed system has been presented graphically in figure 3.

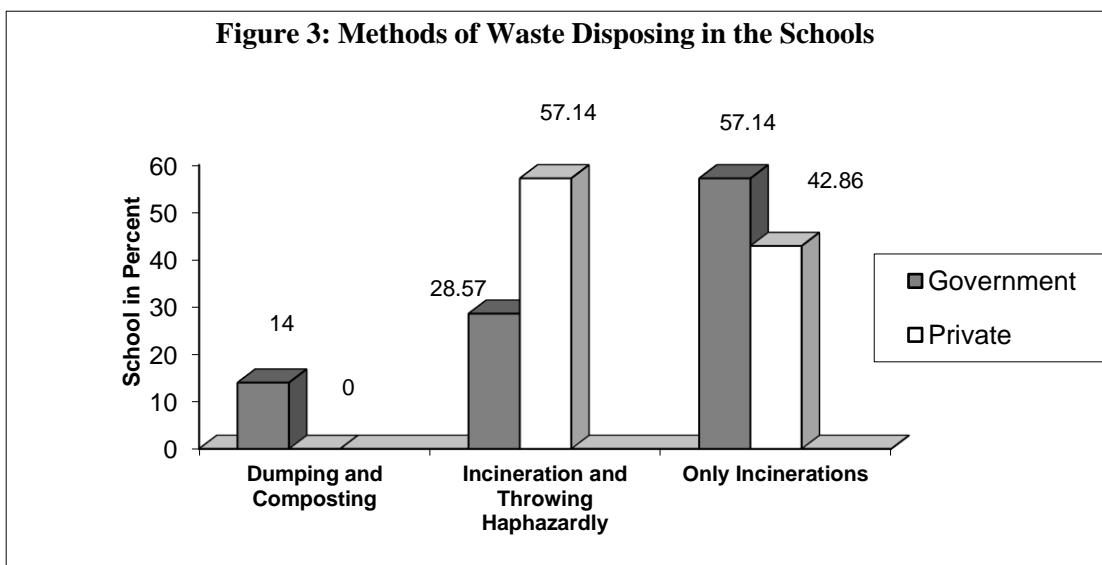


Figure 3 clearly indicates that only one government school headmasters responded that the dumping and composting system was used for disposing wastes none of the private schools headmasters responded that system for disposing wastes. Similarly, 57.14 percent of the private and 28.57 percent of the government schools used both incinerating and throwing haphazardly in public areas like stream, drainage, thoroughfares, etc. On the other hand, 57.14 percent of the government and 42.86 percent of the private schools used only incinerating technique. It meant that most of the both government and private schools had not followed appropriate techniques i.e. dumping and composting. However, when we compared both schools, it was found that

government schools followed slightly appropriate technique of waste disposing than private schools. Most of both schools had not followed scientific method, they lacked the modern knowledge of its advantages and processing.

An interview was also made to collect the information about the problems of waste dispose in the schools. Only one of the government schools headmaster responded that no problems were faced for waste disposing processes. But most (57.14%) of the government and all of the private schools headmasters responded that: lack of landfill and drainage facility was that problem of waste disposing. Similarly, 28.57 percent of the government schools headmasters responded that villagers in the schools complex threw the waste materials/excreta. The researcher also observed the sanitary condition and found that the management was unsatisfactory. Therefore, attempts were made to collect information from headmasters to overcome the problems of waste product. Most (57.14 percent) of both the government and private schools respondents were found in the favors of incinerating system as waste management. Likewise, 42.86 percent of the private and 28.57 percent of the government schools headmaster suggested placing dustbins in the classrooms and school surrounding to collect and compose the waste. On the other hand, one government school headmaster replied to create awareness among students and teachers.

It can be concluded from the above information that most of the respondents should be aware/trained to manage the wastes in a modern scientific concept i.e. reduce, reuse and recycle. Likewise, students and teachers should be aware of hygienic health habits. Some suggestion made by headmaster and their using techniques were found contradictory as their suggestions were found far better than their using techniques.

In fact, the schools should conduct joint venture/efforts sanitation campaign in the community. But majority (85.71 percent) of the government and the entire private schools headmaster responded that they had not conducted and managed any sanitation programs and scheduling in the local community where as only one of the government schools had seldom conducted sanitation activities with the co-ordination of local clubs on the special occasions. On the other hand, no community participated in the school-cleaning programs. It meant that they had no cooperation between schools and communities to conduct sanitation campaigns.

### **Duration of Waste Disposal**

Waste product is a responsible factor for creating unhygienic environment in the schools. Management of proper time scheduling and other sanitation activities conducted by school are also helpful and directly influence the environmental philosophy of the parents, students and teachers. Therefore, the researcher took interview about the duration of waste disposing. The collected information has been presented in the following figure 4.

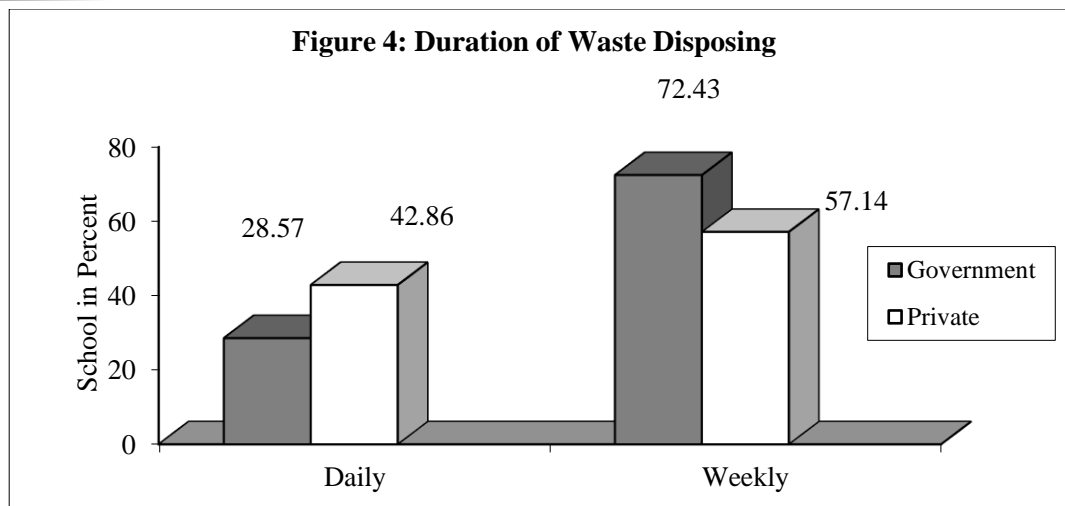
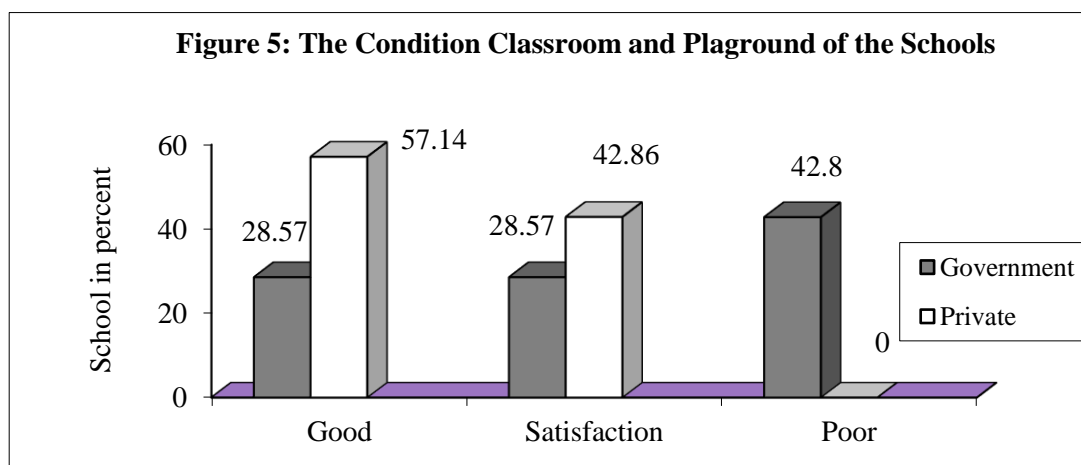


Figure 4 show that 42.86 percent of the private and only 28.57 percent of the government schools headmasters responded that they had disposed waste products daily. Rest of others, 71.43 percent of the government and 57.14 percent of the private schools headmasters responded that the wastage were weekly disposed. On the other hand, all of the government and private school headmasters responded that they cleaned classrooms at morning or evening time daily, but after observing the sanitation condition of the schools. The researchers found quite contradictory to these responses. He found that the most of the government and a few of the private schools were in unsatisfactory level i.e. found a lot of dust/mud, stone, papers, plastics, unwanted herbs, etc. in the classrooms and schools surroundings.

### The Condition of Classroom and Playground

The researcher observed the classroom condition and playground of the both government and private school. The collected information are presented in the following figure 5.



Above figure 5 shows that 28.57 percent of the government and 57.14 percent of the private schools were good, 28.57 percent of the government and 42.86 percent of the private schools were satisfactory and rest, 42.86 percent of the government schools were in very poor condition that there were a lot of dust/mud and paper spices scattered in the classrooms. It meant that most of government schools lacked management of sanitation than private ones.

### Availability of Dustbin in the School Compound

It was also attempted to observe the dustbins availability in the schools area. The collected information is presented in the following table.

Table 7: Availability of Dustbin in the Schools' Complex

Dustbins	Government schools		Private schools	
	No. of schools	Percent	No. of schools	Percent
Available	3	42.86	4	57.14
Non available	4	57.14	3	42.86

Above table 7, indicates that 42.86 percent of the government and 57.14 percent of the private schools had availability of dustbins in the schools areas. It meant that about the half of the both government and private schools lacked the management of dustbins in the schools. Researcher also found that the 57.14 percent of the government schools had permanent management of sweepers whereas 42.86 percent of them had only temporary. On the other hand, all of the private schools had permanent management of sweepers. However, only one of the government schools cleaned in joint efforts of students and sweepers whereas none of the private schools had included the student to clean the schools.

### Availability of Drainage Facility in the Schools

Management of drainage facility plays a vital role to establish the healthful environment in the schools. If it is not managed properly, it makes the school environment dirty and unhygienic. Therefore, attempts were made to collect information on availability of drainage facility in the school. It was found that only one of the private schools had drainage facility available with in close as tunnel system. Rest of all private and government schools had not available of drainage facility. The collected information about the drainage system for used water in the schools is shown in figure 6.

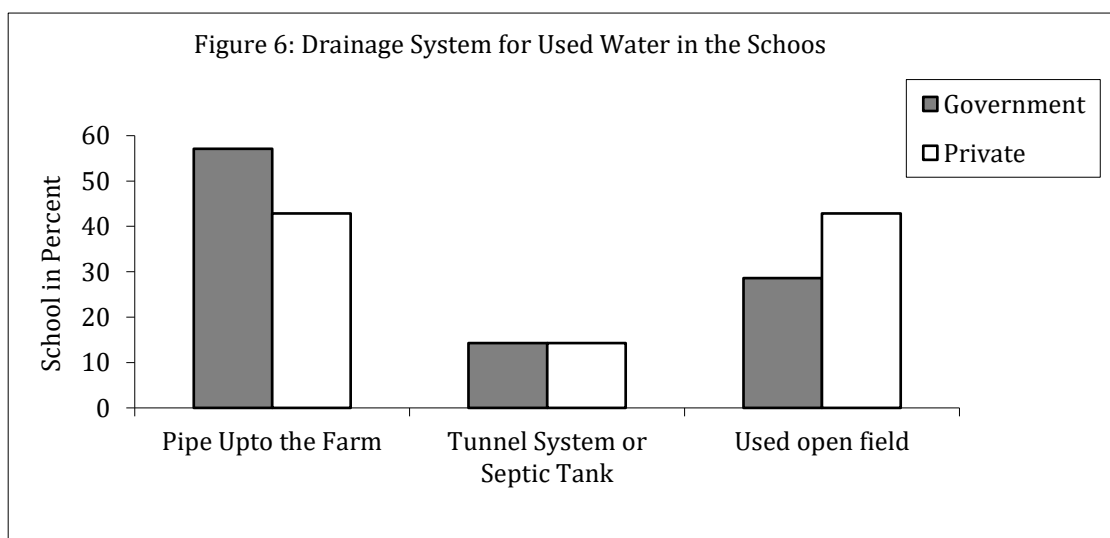


Figure 6, clearly indicates that 57.14 percent of the government and 42.86 percent of the privates schools used pipe up to the farm. Similarly, one of the government and private schools used as

tunnel system or store in septic tank. On the other hand, 42.86 percent of the private and 28.57 percent of the government schools used open field to throw used water.

It can be concluded from above information that the majority of both schools of Nepalgunj Sub-metropolitan City did not properly manage the drainage system of water. They did not care the water after school whether it followed anywhere. Though the drainage anywhere was harmful, the farmers did not refuse it to their fields.

## CONCLUSIONS

The respondents feel the necessity & relevance of sanitary facilities and proper management in the school. Headmasters of all schools (Including Govt. & Pvt. Schools) have positive attitude regarding the proper management of all sanitary facilities. Private schools were found to have better management of handling process of drinking water than government ones. As researcher, I found majority of the government schools had followed directly tap system for drinking whereas private schools used jug and glasses. But both government and private schools use same type of tanks like zinc, metal, plastic etc. to store drinking water. Most of the government schools had not had good management of sanitation in toilets that they lacked cleanliness and water supply. The systems of sanitation in private schools were better because they used chemical substances to clean the toilets but majority of the government schools used only brush and water to clean it. The average toilet rooms of both government and private schools were found adequate in proportion to the strength of the students. The toilets were found more adequate in private schools than government ones for the students. It was found that most of the both schools had not been following scientific methods for disposing wastes. They had been incinerating and throwing the wastes haphazardly in public areas. The cleanliness in the classrooms were found satisfactory in both of schools, comparatively private schools were found better. Every school of both had not properly managed the drainage system for used water except one government and one private because they had been using septic tank and tunnel system respectively. Rest of the schools used pipe up to the farm and open field. The schools had not managed and conducted any schedule for sanitation programs except only one public school because it had conducted the programs with the cooperation of local clubs on the special occasions. It was clear that no communities and schools had made coordination for this purpose.

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