

# An Assessment on the Disaster Risk Reduction Knowledge Among School Students: A study on Public Schools at Kathmandu

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## Abstract

Nepal faces a lot of natural disasters, like landslides and floods time and again. These disasters cause a big loss of property for the country each year. Many people also get physically hurt, and houses and other buildings and many other properties gets damaged. This has happened because people more often don't know how to stay safe during disasters. It seems that Nepal remains unprepared to prevent these disasters from happening or lessen their impact. Some programs and activities are conducted by the government to help people affected from disasters, but it is found largely insufficient and inappropriately implemented. Similarly it is found that different levels of the government doesn't cooperate to each other while working in situation.

In this study, researcher aims to study the understanding of school students about reducing the risks of disasters. Methodologically, this research has been based on qualitative in nature. Questionnaire method was executed as data collection tool. Total 30 students from different classes were selected as sampled respondents using purposive sampling method from two different government schools in Kathmandu-16. The results showed that majority, (more than 70 percent) of the students are well known about the safety rules set by the government for schools in Nepal. It shows that many students are enough aware and educated about how to stay safe during disasters. But still considerable number of students are found unaware about the disaster risk reduction knowledge. This research also found some problems about the teaching process of disaster risk reduction in schools. The findings may also help government agencies working on disaster risk reduction in Nepal to improve their programs for schools.

**Keywords:** *disaster, risk, school, management, assessment*

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## Introduction

Nepal, a country located with many mountains, steep hills and plain terai with its southern part, often faces many natural disasters. The land here is a mix of steep mountains in the north and flat areas in the south. There are strong rivers flowing from the mountains, and heavy rains come during certain times of the year. Because of all this, Nepal gets hit by different kinds of disasters like landslides, floods. Also due to the situation of tectonic plate lies under neat its physical existence, Nepal very often is termed as earthquake prone zone. (Government of Nepal).

When we talk about disaster risk, we mean how much harm these disasters can cause. It includes things like people died, getting hurt, damaging homes, and many properties. Disaster risk reduction (DRR) is a way to be prepared before the disaster happens so that we can be safe and remains less damaged or less harm and also can coup or be resilient after the disaster. It's like a plan to help communities stay safe and make sure they can keep going even after a disaster. The Sendai Framework for Action (SFA) is a big plan made in 2015 to help countries do this better. It says that countries need to learn, be creative, and teach others to be safe and strong against disasters (UNDRR, 2015). Recently, Nepal started teaching more about disaster risk reduction in higher levels of schooling too.

This study is carried out at public schools in Kathmandu. Researcher has selected two public schools at Balaju area, namely, Yubak Secondary School, Paknajol and Sitala Secondary School, Balaju, both lies at Ward No. 16 Kathmandu. The respondents are selected from the class nine and ten level.

This article aims to see how well these efforts are doing, especially in the Kathmandu. It wants to know whether students know or not about disasters, how ready they are if disaster happens all of sudden, and how well they can be safe and remains resilient from this. As Nepal is located where two major tectonic plates meet underneath, making it prone to more earthquakes. In the past, she has suffered from severe earthquakes more often, and experts predict more in the future. Unfortunately, factors like poverty, lack of education, and poor infrastructure make the country even more vulnerable to disasters like floods and landslides. Shockingly, Nepal ranks seventh in the world for deaths caused by these disasters. These alarming statistics emphasize the urgent need for disaster risk reduction (DRR) efforts in Nepal. Recognizing this, Nepal, along with 187 other countries, adopted the Sendai Framework for Disaster Risk Reduction (SFA) (United Nations Office, 2023). The Nepalese government has made DRR a priority and is integrating it into its programs. Responding to the SFA, international organizations, along with local NGOs, have

launched ambitious programs to reduce Nepal's vulnerability to disasters.

Very often we found that, Disaster risk is expressed in terms of the potential loss of lives, deterioration of health status and livelihoods, and potential damage to assets and services due to the impact of existing natural hazard. Disaster risk reduction (DRR) is a systematic approach to identifying, assessing, and reducing disaster risk, and it helps minimize the vulnerability of a society or community (Maxwell S, 1994).

The strategic recovery vision of education sector of Nepal is to confirm that all the Children, adolescents and youth, along with those with special needs, can access safe Learning environments. Considering continuity of education during the recovery Period, comprehensive school safety and disaster risk reduction, strengthened disaster Management, child-friendly, multi-hazard disaster resilience, quality education, Environmental sustainability, gender-friendly hygienic and private sanitation facilities, Attention to special needs, gender and ethnic considerations, strengthening Preparedness and risk reduction capacity of the education system. (AIT, 2017)

Schools are a key focus on DRR initiative. One effective strategy in Nepal's disaster risk reduction initiatives is raising awareness within school communities. This involves various activities such as training teachers, organizing quizzes, and promoting disaster safety. Additionally, there is a focus on prevention, with NGOs developing educational materials, integrating DRR into national education systems, and retrofitting or building earthquake-resistant schools (*GEOENVIRON DISASTERS*, 2015). Progress in these initiatives is well-documented, and Nepal is increasingly incorporating DRR into its education system. Through these efforts, the hope is to create a generation better prepared to face natural disasters and mitigate their impacts. However, it is not definite that how much positive impact that has happened to school students. Therefore this research is intended to carry out real assessment of school students regarding the disaster risk reduction knowledges.

So the study attempted to fulfill the central research question of:

What assessments did the students make about the disaster risk reduction knowledge?

### **The concepts of Disaster and Disaster Risk Management**

Disaster refers to a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to

cope using its own resources. (UNISDR, 2009). Similarly, disaster risk refers to the potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period.

More specifically, Disaster Risk Reduction refers to the systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster (ibid).

Risk assessment/analysis is a methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend.(ibid)

### **Disaster Risk Management Concepts**

Disaster risk managements refers to the preparedness to be safe during and after the disaster conditions. Disaster is a sudden adverse or unfortunate extreme event which causes great damage to human beings as well as plants and animals. Disasters occur rapidly, instantaneously and indiscriminately. These extreme events either natural or man-induced exceed the tolerable magnitude within or beyond certain time limits, make adjustment difficult, result in catastrophic losses of property and income and life is paralyzed. These events which occur aggravate natural environmental processes to cause disasters to human society such as sudden tectonic movements leading to the earthquake and volcanic eruptions, continued dry conditions leading to prolonged droughts, floods, atmospheric disturbances, the collision of celestial bodies, etc.

Disasters have always co-existed with civilizations. With technological advancement, development initiatives resulted in the creation of a lot of infrastructure and permanent assets. Gradually material development detached man from nature on one hand, and increased vulnerability of the human population, on the other. The progressive increase in loss of life, property and deleterious effect on the environment due to disasters moved the international community to look at disaster management in a new perspective, which transcends international barriers, anticipates possible threats and enables tackling of disasters from the pre-stage. The last decade (1990-1999) was observed by the International Community as the “International Decade for natural disaster reduction“, a decade dedicated to promoting solutions to reduce risks from natural hazards. The international dimension of disasters was realized

and a protocol sought to be established so that when it comes to the suffering of humanity, help from the International community flow in right earnest. Almost every day, newspapers, radio and television channels carry reports on disaster striking several parts of the world. But what is a disaster? The term disaster owes its origin to the French word “Disaster” which is a combination of two words ‘des’ meaning bad and ‘aster’ meaning star. Thus the term refers to ‘Bad or Evil star’. The United Nations defined Disasters as ‘A serious disruption of the functioning of a community or a society causing widespread human, material, economic and environmental losses which exceed the ability of the affected community/society to cope using its own resources’ (UNDP, ND). A disaster is a result of the combination of hazard, vulnerability and insufficient capacity or measures to reduce the potential chances of risk. A disaster happens when a hazard impacts on the vulnerable population and causes damage, casualties and disruption.

The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster. This term is an extension of the more general term “risk management” to address the specific issue of disaster risks. Disaster risk management aims to avoid, lessen or transfer the adverse effects of hazards through activities and measures for prevention, mitigation and preparedness.

Hence, poverty is both a cause and consequence of disasters in under-developed or developing countries. Disaster risk reduction is particularly essential for sustaining the achievements of all kinds of development goals since it provides a safety net for the hard-earned development gains of developing country (Holloway, 2003).

### **Comprehensive School Safety Framework**

The Comprehensive School Safety framework aims to reduce the risks of all hazards to the education sector. There are Three Pillars of Comprehensive School Safety generally categorized as;

- Safe Learning Facilities
- School Disaster Management
- Risk Reduction and Resilience Education

The foundation of planning for Comprehensive School Safety is a multi-hazard risk assessment. Ideally, this planning should be part of Educational Management Information Systems at national, sub-national, and local levels. It is part of the

broader analysis of education sector policy and management that provides the evidence base for planning and action. (WCDRR, 2015).

### **Methods and Materials**

This research is intended to explore the DRR knowledge of students in study area. This study is also helpful to explore risk perceptions, emotion-focused components, (e.g, disaster-related fear in students) and knowledge on available safety system in the event of a disaster, disaster preparedness of the schools, and the disaster adaptations up until today.

This study was conducted at Kathmandu ward no 16. Total two public schools were selected as a sample study population in which total 30 students from class nine and ten were chosen as main respondents. 15 students from each school were included. Among total respondents, 20 respondents are boys and 10 respondents are from girls. Since it is purely a qualitative research, purposive sampling method is used under non- probability sampling technique, to identify required respondents.

For this research, the researcher has applied the qualitative modes of data since the central purpose of the study is to know the understanding capacity and safety preparedness of the students regarding the natural hazards and its subsequence disasters. While collecting data the researcher has used the questionnaire technique.

### **Result and Discussion**

In Nepal, people have been working on reducing disaster risks since 2006-2007 with the World Disaster Reduction Campaign. They changed school lessons to teach about disasters, made plans in villages to handle disasters, and planned what to do in case of disasters in larger areas. Schools have been doing a lot to help too. They teach students and teachers about disasters, hold fun activities like quizzes, and teach people in the community how to stay safe. They've been keeping track of how well these efforts are working.

According to UNDRR 2019, Disaster risk management involves activities related to:

- **Prevention:** Doing things to stop bad things from happening before they even start is usually cheaper than fixing them after they happen. Like moving people and valuable things away from places where bad things might happen.
- **Mitigation:** Making bad things that might happen not as bad, or making sure they don't happen as often. Like building walls to stop floods, planting trees to keep hills from falling, and having rules about where and how buildings

can be built.

- **Transfer:** Sharing the costs of bad things happening with someone else. For example, if something bad happens, like a disaster, one group might get help from another group in exchange for ongoing support or money.
- **Preparedness:** Knowing what to do when something bad might happen, being ready to act, and getting back to normal after it's over. Like setting up alarms to warn people early, figuring out the best ways to leave quickly, and making sure there are enough supplies for emergencies.

### Safe Learning facilities

The study provides insights on knowledge, attitude and practice about safe learning facility. Based on the indicators of safe learning facility of CSSF, the section explores KAP infrastructural requirement for safe learning facilities

**Table: 1**

#### **Understanding of hazard and disaster**

Hazard and disaster may understood by different ways. It is argued that some may understand it as a natural phenomenon whereas some others understand as an act of god. Similarly, it is also said that disaster and hazard in itself not the act of god nor it can be termed as natural phenomena rather it is dependent with how human encounter with such natural incident.

The table below shows that how the study population have understood about hazard and disaster.

<b>Options</b>	<b>Number of Respondents</b>	<b>Percentage</b>
Act of God	3	10
Any natural event	15	50
Any natural/ human event	10	33.33
Don't know	2	6.67
Total	30	100.00

*Field Visit, 2024*

Out of the people surveyed, 10 per cent think disasters and hazards are acts of God, 50per cent see them as any natural event, and 33.33per cent consider them as any human or natural event, while the rest make up 6.67per cent.

The study discovered that only a small number of people really know what disasters and hazards mean. In group discussions, it was observed that students understand

this concepts well, thanks to awareness events held after the 2015 earthquake. However, there are still some who believe disasters are acts of God or things beyond human control. This suggests that students, should be taught the basics of disasters and hazards.

**Figure: 1**  
**Student's understanding about disaster risk reduction**

Strong school building is synonymous to safe school for the respondents and most SMC/PTA members indicating their understanding of safe learning facility are incomplete. The following table indicated that whether students are better aware about disaster risk reduction or not.

The above table demonstrated that students are aware about the natural disaster. Maximum students (70%) said that they are well known about disaster 20% students said that they are still unknown about it very few number of students were unwilling to answer regarding this issue.

**Figure: 2**  
**Understanding of vulnerable group**

Disaster may impact differently to different people. It might makes some people severely vulnerable whereas some people may easily rescue themselves. It is necessary to know who might effects vulnerably in society during disaster so that different measures can be applied to them for their safety. The table shows that whether respondents are aware about the different vulnerable groups or not.

The above table indicated that the respondents are better aware about who are the vulnerable groups. Majority of them said that the old age or senior citizens and the children are main vulnerable to disaster. Similarly, people who lives in more hazard prone area are also termed as vulnerable. Few respondents said that the disable people are more vulnerable. Hence, we can conclude that the old age as well as the children are basically termed as vulnerable during disaster situation

**Figure: 3**  
**School Disaster Management**

The section elaborates about whether students are better trained or not about safety measures for disaster period. Many people think about disaster risk reduction in their own way, like knowing where it's safe or unsafe in school. They also believe having health facilities nearby is important for dealing with disasters. The figure below shows how to develop school disaster management plan.



The above figure represented that the respondents are aware on ways of reducing disaster in school is inadequate among respondents. 70 per cent of the respondents know how to develop school disaster management plan whereas 27 per cent do not have any ideas on ways of reducing disaster risk at school. And the number of respondents who did not response about it were 3 per cent.

#### **Figure: 4**

##### **Activities carried out in school to know safe learning skills.**

Schools may train students differently to make them aware about hazards and disasters. The following table shows that what kinds of training and learning skill that the school has taught to respondents.

Most of the respondents are better trained with early warning system in school. Similarly respondents are also found that they are trained with how to safe evacuate themselves during disaster situation. Even they are somehow trained with drilling and stimulation skills that is useful for disaster safety.

#### **Conclusion**

The students have gained a clearer understanding of disasters and hazards, as well as a better understanding of Disaster Risk Reduction (DRR). Much of what they know about DRR comes from experiencing earthquakes and the various activities and counseling sessions that followed. This shows that having strong school buildings is important for a safe learning environment, and the students are positive about ensuring safety in their schools. However, they haven't explored ideas beyond just having strong buildings and basic school facilities. Their readiness to handle disasters is average, but they are teaching students about disasters as per the curriculum, although they could pay more attention to using different teaching methods. They still prefer traditional activities like street dramas and oratory competitions to teach about DRR, but it's important for everyone in the school to have a deeper understanding of disasters and safety.

similarly, it is also found that, to improve preparedness, it's essential to broaden everyone's knowledge about disasters and their capacity to deal with them. Setting up a School Disaster Management (SDM) should be a priority, followed by strengthening it and implementing plans. With everyone's positive attitude, the project activities are likely to be well received, but strategic efforts are needed to involve the community effectively. School management should be oriented on safe site selection for school construction. They should be emphasized on constructing new schools based on guidelines and making it inclusive. Also, along with building

the surrounding location should also be protected. Likewise, light search and rescue materials, safety materials and first aid should be made available at school. Installation of early warning system and its orientation should be done. Student's task force of respective theme should be formed.

## Reference

- AIT. (2017). *School Reconstruction Strategy* :Kathmandu: Ministry of Education, Central Level Program Implementation Unit.
- Government of Nepal. (2008). *National Strategy for Disaster Risk Management*. Lalitpur: UNDP.
- Holloway, A. (2003). *Disaster Risk Reduction in Southern Africa*. Cape Town: South Africa.
- Mizutori, M. (2023). Special Representative of the Secretary-General for Disaster Risk Reduction and Head of the United Nations Office for Disaster Risk Reduction.
- Tuladhar, G., Yatabe, R., Dahal, R.K., et al. (2015). *Disaster Risk Reduction Knowledge of Local People in Nepal*. GEOENVIRON DISASTERS, 2(1), 5. <https://doi.org/10.1186/s40677-014-0011-4>
- UNDRR. (2015). *Sendai Framework for Disaster Risk Reduction 2015-2030*: Retrieved from <https://reliefweb.int/report/world/sendai-framework-disaster-risk-reduction-2015-2030>
- UNDRR. (2019). *Simulation exercises: (SIMEX) UNDP. (2004). Disaster Risk Management in Nepal*. Lalitpur: UNDP.
- UNISDR. (2010). *Disaster Risk Reduction: An Instrument for Achieving the Millennium Development Goals: Advocacy Kit for Parliamentarians* Geneva, Switzerland.