ATTITUDE AND PRACTICE OF USING INSTRUCTIONAL MATERIALS BY HIGH SCHOOL HEALTH TEACHERS

By

Kabita Kumari Bhatt

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CENTRAL DEPARTMENT OF EDUCATION

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APRIL, 2021

DECLARATION

I, hereby, declare that to the best of my knowledge this thesis is my original work, and it has not been submitted for the candidature of research degree to any university, college or educational institution. The subject matter presented in this thesis report is the result of my own work.

Date: 25/03/2021 …….

Kabita Kumari Bhatt

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शिक्षाशास्त्र संकाय
स्वास्थ्य तथा जनसङ्ख्या शिक्षा विभाग

TRIBHUVAN UNIVERSITY
FACULTY OF EDUCATION
Health & Population Education Department

विश्वविद्यालय क्याम्पस
कीर्तिपुर, काठमाडौं, नेपाल
फोन नं. ४३३१३३७
UNIVERSITY CAMPUS
Kirtipur, Kathmandu
Tel: 4331337

पत्र संख्या/Ref.

मिति/Date: .....

RECOMMENDATION

This thesis work entitled "**Attitude & practice of using instructional materials by high school HPE teachers."** by Mrs. Kabita Kumari Bhatt has been prepared under my guidance and supervision in partial fulfillment of the requirement for Master's Degree in Health Education. I recommend this thesis for the final evaluation and viva voce.

Date: 12/3/2021

……..

Bishnu G. C.

(Supervisor)

Health and Population Department

Kirtipur, Kathmandu

त्रिभुवन विश्वविद्यालय
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Tel: 4331337

पत्र संख्या/Ref.

मिति/Date: .....

APPROVAL SHEET

This thesis work entitled "**Attitude & practice of using instructional materials by high school HPE teachers."** By Mrs. Kabita Kumari Bhatt in partial fulfillment for the requirements of Master's Degree in Health Education has been accepted and approved.

Thesis evaluation committee	**Signature**
Mr. Pitamber Acharya Head, Health and population Education department, Tribhuvan University, Kirtipur	……. (Chairperson)
Mr. Bishnu G. C. Health & Population Education Department Tribhuvan University, Kirtipur	……. (Supervisor)
Mr.Om Bahadur Rayamajhi,Associate Prof. Sanothimi Campus, Bhaktapur	……. (External)

Viva Date:25/03/2021

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Kabita Kumari Bhatt

T.U., Kirtipur

ABSTRACT

Instructional materials are print and non-print items that are rested to impact in formation to students in the educational process. Instructional materials include items such as: kits, textbooks, magazines, newspapers, pictures, recording videos, electronic materials & local available materials etc. Instructional materials refer to the human & non-human materials & facilities that can be used to encourage, improved and promote teaching & learning activities.

The study entitled **Attitude & practice of using instructional materials by high school HPE teachers.** The main objectives of this study were to identify attitude of high school HPE teachers towards using IMs in class, to analyze the situation of using instructional materials by HPE teachers and to find out the problem faced by HPE teachers with respect to using instructional materials. This study was based on community schools of Kathmandu metropolitan. This study was based on the survey descriptive type of research design. The design has been carried out quantitatively. It is the based on primary source of data. The HPE or HE subject teachers of Kathmandu metropolitan would be the population of the study. The teachers who teach HPE or HE subject in the class 9, 10, 11 & 12 would be the target group of study. The teacher was selected on the basis of census method. Attitude scale, questionnaire and observation check list tools used the data collection. The collected data were analyzed manually and finding of the study presented in percentages, figures and table. ADDIE instructional design and Gagne's instructional design were used in this study.

Researcher found that, 100 percent respondents showed their positive views toward using instructional materials. Hundred percent teachers said that they used instructional materials. Out of 100 teachers 34 percent teacher regular used , 48 percent teacher frequently used and 18 percent teacher was sometime used IMs in teaching HPE. Out of hundred teachers 96% of teachers used teacher made materials, 91% of teachers used printed materials, 89% of teachers used local materials & 83% of respondents used electronic materials. But during class observation I found that, most of teaches used daily usage materials. There were only 28% of schools have the classroom for the use of electronic materials. During the selecting IMs, the teacher gives main priority to the local materials. But my observation I found that only some

teachers were used local materials. In the same way the highest proportion of respondent was collects and constructs the materials by teachers which were 98 percent. Only 14 percent of respondents said that the available materials are sufficient for teaching HPE. In this study the teacher said that they were mostly used low cost materials in teaching HPE. The financial management for instructional materials provided by school, teacher, NGO/INGO & other sources. There were different kinds of problems related to the IMs such as using IMs related problems, collecting instructional materials related problems, lack of available materials, problem in manage & plan of instructional materials etc.

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ABBREVIATIONS/ACRCONYMS

NNEPC	:	Nepal National Education Planning Commission.
IMs	:	Instructional Materials.
NAAEE	:	North American Association for Environmental Education.
UNESCO	:	United Nations Education Scientific and Cultural Organization.
HPE	:	Health, Population and Environment
NGO	:	Non-Government Organization
OHP	:	Overhead Projector
DEO	:	District Educational Office

CHAPTER–I
INTRODUCTION

1.1 Background of the Study

Health education is a process of providing learning experiences for the purpose of influencing knowledge, attitude and conduct relating to individual and group health. In the same vain WHO 1988 “Health education is the part of health care that is concerned with promoting healthy behavior”. Health education must try to bring change in people’s health knowledge, attitudes and behaviors whose ultimate goal is to protect and promote individual, family and community health (Mudwari, 2071).

Teaching materials and media in health and physical education are those teacher made, locally available, printed and electronic aids which are used in course of teaching health education to meet the instructional objectives according to the nature of content. As Merriam Webster Dictionary defines “Teaching aid is an object (such as a book, picture or map) or device (such as DVD or computer) used by teacher to enhance classroom instruction. (As cited by Serchan & Upreti, 2074)

Enayati, et al. (2012), found that, teacher’s attitude toward the use of technology in education, was positive. As the change made by entering information and communication technology in Education system’s elements, traditional methods can’t help learner’s requirements in today’s society and it’s necessary that the main elements of education system particularly teachers subject to right alteration with global progresses and with positive attitude in this path, use this changes for upgrading their knowledge level and usage of them to improve education.

Zanguyi (2011) showed that, teachers’ attitudes towards the use of new educational technologies in teaching process were positive. Similarly Dogruer, Eyyam and Menevis (2010) found that, teachers agreed that the use of educational technology has a positive impact on their experience. In the same way, Ozdamlı, Hursen, Ozcinar (2009) observed that, teacher trainees believed in positive effects of educational technology. Similarly Kabadayi (2006) found that,75% of the teachers showed their positive views concerning the use of educational technology in classrooms. (As cited by, Enayati, et al. (2012)

Stephen, (2009), found that, 93% teachers expressed positive attitude, while only 7%had negative attitude over using the Age Khan Education Service materials.

Instructional materials are print and non-print items that are rested to impact information to students in the educational process. Instructional materials include items such as: kits, textbooks, magazines, newspapers, pictures, recording videos etc. Instructional materials help to clarify the lesion. They help to proceed from known to unknown and from simple to complex, they helpful in attracting attention, they offer opportunities to students to handle and manipulate things and aids are helpful to decorate classroom. (Ojiekpo, 2015)

The current trends for instructional technology in education are exciting. For instance, mobile and cloud computing have created a new platform which allows for unlimited computing resources. Today's world is characterized by digital technology and the need for resources to accommodate these types of technologies is increasing. Mobile devices have become popular in the U.S. and around the world. In many countries outside the U.S. students do not have access to computers, but they do have mobile devices such as cell phones and tablets (Ally & Samaka, 2013). These mobile devices present many opportunities to students for both formal and informal learning (Scharff, 2014). Mobile learning makes it easier for students to learn when they want to and is accommodating to different learning styles. (Keiser University, 2014)

Instructional materials play a very important role in the teaching and learning process. Teaching aids, however, are designed to help the teacher save time and effort. Many of them can be effectively used in large class. Some of them relieve the teacher from many routine works. All of them make the class lively and more interesting for the teachers and students.

According to Crow and Crow"Audio-visual aids give learners the opportunity to benefit from various experiences with people, events, objects and cause and effects relation." In the same vain F.W. Noel "Good education is the foundation of any educational programe, audio-visual training aids are the component parts of that programme." In support of these views, C.V.Good states that, "Audio-visual aids which help in completing the triangular process of learning i.e. motivation, classification and stimulation."(As cited by,Bhattari, et al.(2074), p. 139-140).

According to H.B. Pradhan, "Instructional aid is any device that assists an instructor to transmit to learner facts skills, attitudes, knowledge, understanding and appreciation. Media are the teaching aids by which knowledge, information and ideas are communicated. Media play important role in creating, awareness and enforcing learning." In the same vain, Hass and Packer says that, "The Instructional materials are most important thing to teach the student in a meaningful and effective way, in order to make health teaching meaningful and effective in the classroom."(As cited by, Kafle, 2067)

Instructional materials in teaching health education give special emphasis in boosting the confidence and enhancing the skill of the participants in making various teaching materials and using them effectively in actual classroom teaching. Such a prominent and integral element of teaching Health should not be ignored and its wide application is expected to increase the quality of our Health Education. The importance of teaching aids can be well described by old Chinese proverb i.e. "I hear I forget, I see I remember, I do I understand" (As cited by, Basnet, 2016 pp12).

It is, therefore, essential that learners should be involved, not only exposed, in the classroom activity simultaneously with the teaching materials. The use of aids to teach more meaning is obvious. They make teaching learning process easier and natural.

Instructional materials should can the work of to motivate, to make learning permanent to the students in teaching. There is the many difference using materials and not using materials in teaching:

The condition of using teaching materials	**The condition of not using teaching materials**
To help the clarify concept.	To spend more time to clarify the concept.
To teach in few/short time.	To spend more time to teach.
To make attractive teaching.	To despair teaching learning.
To make motivate and creative the students.	Con not be active and excitement.

(Adhikari, 2066, p. 134)

Health education materials should rely on instructional techniques that create an effective learning. According to Gagne's cognitive theory of teaching, "Teaching task is mainly concerned with helping the students in proper comprehension or meaningful learning of the content materials. They can have proper comprehension of this content materials is organized, arranged and presented in a proper way of cognitive learning." (Adhikari, 2066, p. 134).

"Instructional materials are the tools used in educational lessons, which includes active learning and assessment. Basically, any resource a teacher uses to help him teach his students is an instructional material." (https://study.com>academy>lesson>in retrieved on 2018-03-29).

In the teaching learning process, instructional materials serves functions of enhancing retention which makes learning more permanent. Equally, they stimulate and sustain interest in learning by providing first-hand experience with the realities of physical and social environment.

Instructional materials are defined as resources that organize and support instruction, such as textbooks, tasks and supplementary resources (adapted from Remillard and Heck, 2014). Instructional materials refer to the human and non-human materials and facilities that can be used to ease, encourage, improved and promote teaching and learning activities. They indicate a systematic way of designing, carrying out and employing the total process of learning and communication and employing human and non-human resources to bring out a more meaningful and effective instruction.(hhttps://www.igi.global.com>dictionary)

According to Obanya (2001), Instructional materials are didactic materials things which are supposed to make learning and teaching possible. While in views of Abdullahi (2001) they are materials or tools locally made or improved that could make tremendous improvement of a lesson if intelligently used. In the same vein, Isola (2010), referred instructional material as objects or devices, which help the teacher to make a lesson much clearer to the learner. In support of these views, Agina(2005), describe instructional material as concrete or physical objects which provide sound, visual or both to the sense organs during teaching. (as cited by Mwangi 2010)

Teaching materials help making the learning effective. The teacher can make his class lively, change usual situation of the class, motivate his students, make his teaching realistic by using materials, without materials the lesson lacks excitement, fun, life and color and the learners lose interest in it. They also help students remember the learnt thing for a long time. Thus, teaching aids should be chosen on the basis of subject matter to be taught. Some materials can be collected, some can be papered by the teacher and some are to be bought.

1.2 Statement of the Problem

Instructional materials play a vital role in participation in a health education lesson. Instructional materials refer to those materials which are used for teaching and learning purpose including textbooks, supplementary materials, audio visual materials and other related materials. This material is used to give impetus on the teaching and learning of health education. They from a focal point and attract attention, arouse interest and promote a desire to learn, supplement description and help to explain words and processes, give an accurate impression of the concept, illustrate relationships, promote retention and memory, help to consolidate what has been learned, help to save teaching time, make learner to have safe esteem, learners get motivated and have the idea of sharing in participation in health lesson (Kothari, 2001).

In health education teaching, aids are Health education is a multi-dimensional subject, is integrated in public health, demography, sanitation, environment, physical education etc. to teach these subject s, teachers must have sound knowledge, good understanding about subject matter and good command in teaching technology as well. With good aids, students can understand well what the teacher says during the learning process. As a result, students can receive the material delivered better and apply it in their daily life. (Koirala,2016)

The Commission recognizes this shortage of instructional materials as a major problem in developing national universal education. It must be attacked simultaneously with the other problems of training teachers, finance, buildings, and administration. The various suggestions that follow are intended to meet the problem

and eventually flood the schools with fine, modern, interesting, and effective aids of all sorts. (pp. 173, College of Education 1956)

In this context, the role of HPE teachers as well as instructional aids is highly demanded. Still many health education teachers think that only textbook is the key instructional materials to teach the students. Teachers come with the textbook and teach the class. Although, there are many supporting instructional materials (it is a science and technology period), teachers do not use them properly. Teaching aids are the most valuable to understand and comprehensive something clearly and easily.

Health education teachers are using teaching materials to deliver their classroom to the learners making the class interesting and contextualized, but how they use is problematic and what will be the effect is questionable. Though, it is very important to teach but very challenging task to apply in the classroom. The common challenges are: large classes, individuals differences and interest of student, lack of teachers training and no sense of professionalism etc. therefore the main cause of poor teaching and learning of Health education in our context may be the lack of teacher's awareness towards instructional materials in the classroom.

Instructional materials are not sufficient and available in all schools. Available aids are not useable or they are less used. What is the knowledge of IMs in health education teacher? What is the attitude of teachers toward using IMs in teaching HPE? What is the availability of health education materials in high level? What is the usage of IMs in teaching health education? What are the problems faced using IMs in teaching health education? That is one of the problems. What such condition comes? What may be the reality? It is a problematic question. So it is easier to choose the topic.

1.3 Objectives of the Study

Objective is a statement of a specific measurable or observable result desired from an activity. The main purpose of the study is to identify the attitude and use of instructional materials in teaching HPE at high school teachers in Kathmandu district. However the following are specific objectives of the study:

1.3.1 To identify attitude of high school HPE teachers towards using instructional materials in class.

1.3.2 To analyze the situation of using instructional materials by HPE teachers.

1.3.3 To find out the problem faced by HPE teachers with respect to using instructional materials.

1.4 Significance of the Study

Instructional materials play vital role in teaching learning activities. Teaching is not an easy task, so this study would be helpful to those teachers who are involved in teaching learning activities. A health education teacher must possess the knowledge of the appropriate use of teaching aids to make teaching more effective. In the context of Nepal, the people who belong to teaching need to gain and develop the ideas on the issue related with teaching materials to be a good teacher. This study would help the HPE teachers to know better about the knowledge and use of instructional materials in the classroom. The study result is a future guideline for the HPE teachers regarding the issue. In these circumstances, the major significances of this study can be listed as follow:

1.4.1 This study support to the teachers for the teaching learning activities.

1.4.2 This study helps to students for the study about instructional materials and it was provide basic information on instructional materials.

1.4.3 This study is helpful for follower researcher to conduct new related research.

1.4.4 The study can be used as guideline for planners, policy makers and social workers to improve the policies and facilities towards related policies.

1.4.5 It is also useful for curriculum makers of Health, Population and Education to make the curriculum more appropriate.

1.4.7 This study can helpful to identify the attitude and use of instructional materials in teaching HPE at high school teachers.

In overall, the study can be significant to all the stakeholders of teaching learning curriculum planning, producing and practicing health education.

1.5 Delimitations of the Study

The delimitations of this study were as follows:

1.5.1 The population of this study was delimited to the high school HPE teachers.

1.5.2 This study was delimited within the community based high school in Kathmandu Metropolitan.

1.5.3 This study was delimited within the almost more than 100 HPE teachers in Kathmandu Metropolitan.

1.5.4 The tools and techniques of data collection were attitude scale, questionnaire and observation check list.

1.5.5 This study was related with the Attitude and use of instructional materials for high level teachers of HPE.

1.6 Operational Definitions of the Key Terms

Attitude: An attitude is the degree of positive or negative affect associated with some psychological objects i.e. any institutions, ideal, symbol, phrase, slogan, job or idea etc.

Practice: The actual application or use of an idea, belief, or method, as opposed to theories relating to it.

Knowledge: A mental capacity to understand situation around, facts and figure and also analyze something.

HPE Teacher: The teacher who teaches Health Population & Environment Education and Health and Physical Education from grade 9^{th} to 12^{th}.

Community school: Supported by government for teacher salary as well as other purpose.

Instructional materials: Instructional materials refers to concrete objects like computer, television, projector, slide show, PC, smart phone, smart board, tape-records, OHP, rellay, newspapers, text books, chart, magnet board, whit board, magazines etc. This can be manipulated by both student and teachers during teaching, learning process.

CHAPTER-II
REVIEW OF THE RELATED LITERATURE

This chapter reviews the different features of article and finding of different researchers in order to explain the basic explore the trends of research in this field. Provide insight and direction find areas which are less explored. Instructional materials play a vital role in an instructional program as learning is based primarily on sensory experiences and teaching materials provides visual and sensory experiences for the students. Some of the related literatures to this study are reviewed as below.

2.1 Conceptual Literature Review

Instructional materials are the tools used in educational lessons, which includes active learning and assessment. Basically, any resource a teacher uses to help him teach his students is an instructional material. Instructional materials are print and non-print items that are rested to impact information to students in the educational process. Instructional materials include items such as: kits, textbooks, magazines, newspapers, pictures, cards cassette tape recorder, recording, videos etc. (Ojiekpo, 2015)

Instructional materials are most important in teaching learning process. It is necessary to note that IM are important catalysts of social re-engineering and change in learners. It is obvious that effective instructions cannot be well accomplished without the use of instructional materials. The reason is not farfetched: advances in technology have brought instructional materials especially the projected and electronic materials to the forefront as the most radical tools of globalization and social development which have affected the classroom teaching learning situation positively. Such technological breakthroughs as networked and non-networked; projected and non-projected; visual, auditory, audio-visual electronic materials are important landmarks in knowledge transfer. With them both teaching and learning become very pleasant experiences. (wambui, 2013)

The Nepal National Education Planning Commission (NNEPC) established in 1954. Prior to this only a few textbooks and blackboards were used as these main IMs. The

commission, among other things, realized the shortage of IMs in educational process and its report suggested the flowing viewpoints:

IMs are most important in teaching learning process. There is a vast group of man made, printed and otherwise manufactured materials. These include the following: Books- textbooks, encyclopedias, dictionaries, other reference books, supplementary reading books, laboratory manuals, workbooks, Magazines, newspapers, pamphlets, Maps, globes, charts, graphs, pictorial and other graphic material, pictures, motion picture films and slides (which require projection equipment), Records and recordings (which require equipment to play them). (p.174-175 College of Education, 1956)

The most serious handicap to good educational experiences in the schools of Nepal today is the almost total lack of instructional aids. In nearly every classroom below the high school level the only teaching aids found are a few paper-back, well-worn pamphlets, frequently not in the Nepali language, occasionally a map or two (usually obsolete!, and perhaps some slates, and a small chalkboard. In the high school classroom, some bound textbooks may be found, but rarely in Nepali. Libraries are seldom found in the schools, and encyclopedias, reference books, fiction, attractive and illustrated textbooks, modern maps and globes, and picture collections, simply do not exist. There are no data available on the extent of materials of this sort in the schools, but a visit to some of the best schools soon convinces the visitor that the situation is as described here, or worse. (College of Education, 1956, P.175)

The importance of instructional materials in teaching and learning is too obvious to be overemphasized. A lot has been written to show the indispensable role of materials in curricular implementation (Onyejemezi, Ogunranti, Afolaju). Generally, according to the classifications, we have audio-aids-those resources that appeal to the sense of hearing only; visual aids-those that appeal to the sense of sight only; and audio-visual aids-those that appeal to both senses of hearing and sight at the same time. While some of these materials are difficult to procure, on account of their cost and availability, many can be improvised by the resourceful leader. (Awolaju, 2016)

According to Thungu (2008), Instructional materials meet the needs of learners, fulfill the requirements of the subjects and facilitate the teaching and learning process.

Piaget (2009) states that, merely using IM does not guarantee effective teaching, to make teaching and participation effective the IM must be appropriately selected and used. “Instructional materials are made up of objects such as printed, audio, visual that aid in the successful delivery of lesson.”(Chuba, 2000)

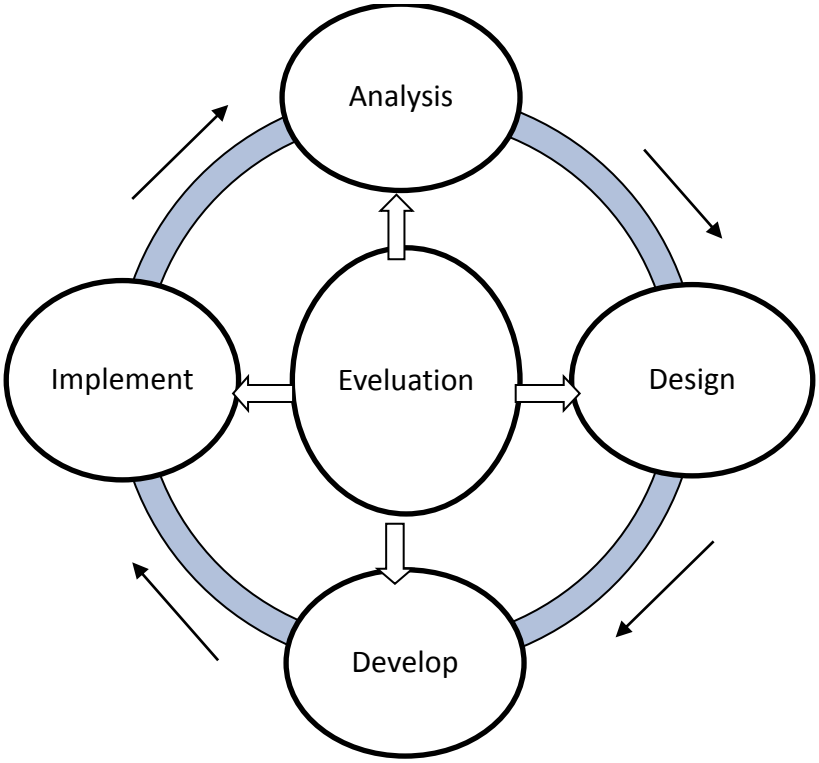
Ajayi (2006) opined that, “without the teacher who is knowledgeable, instructional materials cannot create change and progress, the only time it begins to make impact is when the teacher begins to make use of it and allows it to take over its values”. This portrays (Esther, 2009), states that, the professional attributes of the teacher and general knowledge or his creativity selecting, develop and use instructional materials effectively. (As cited by, Wambui, 2013)

Materials facilitate learner participation in planning and assessing learning. Materials promote learner reflection on the process and content of learning. Materials and activities are developmentally appropriate for the designated grade, yet sensitive to individual differences in educational experience and learning mode. Learners use various forms of technology that help them develop and apply their skill. These technologies might include computers and electronic communication networks, data gathering equipment, video equipment etc. (Education, 2003)

2.2 Theoretical Literature Review

Bruner mentions the four aspects as the process for this work. First aspect is predisposition to learn. Second aspect is structuring the knowledge. Third aspect is sequencing of the presented materials and last aspect is the providing due reinforcement. (Mangal, 2010)

Although many instructional design models exist, they all contain five generic phases. These are: Analyze, Design, Develop, Implement, and Evaluate. These phases provide dynamic and flexible guidelines which are used for effective and efficient instruction. This is also known as the ADDIE Model.



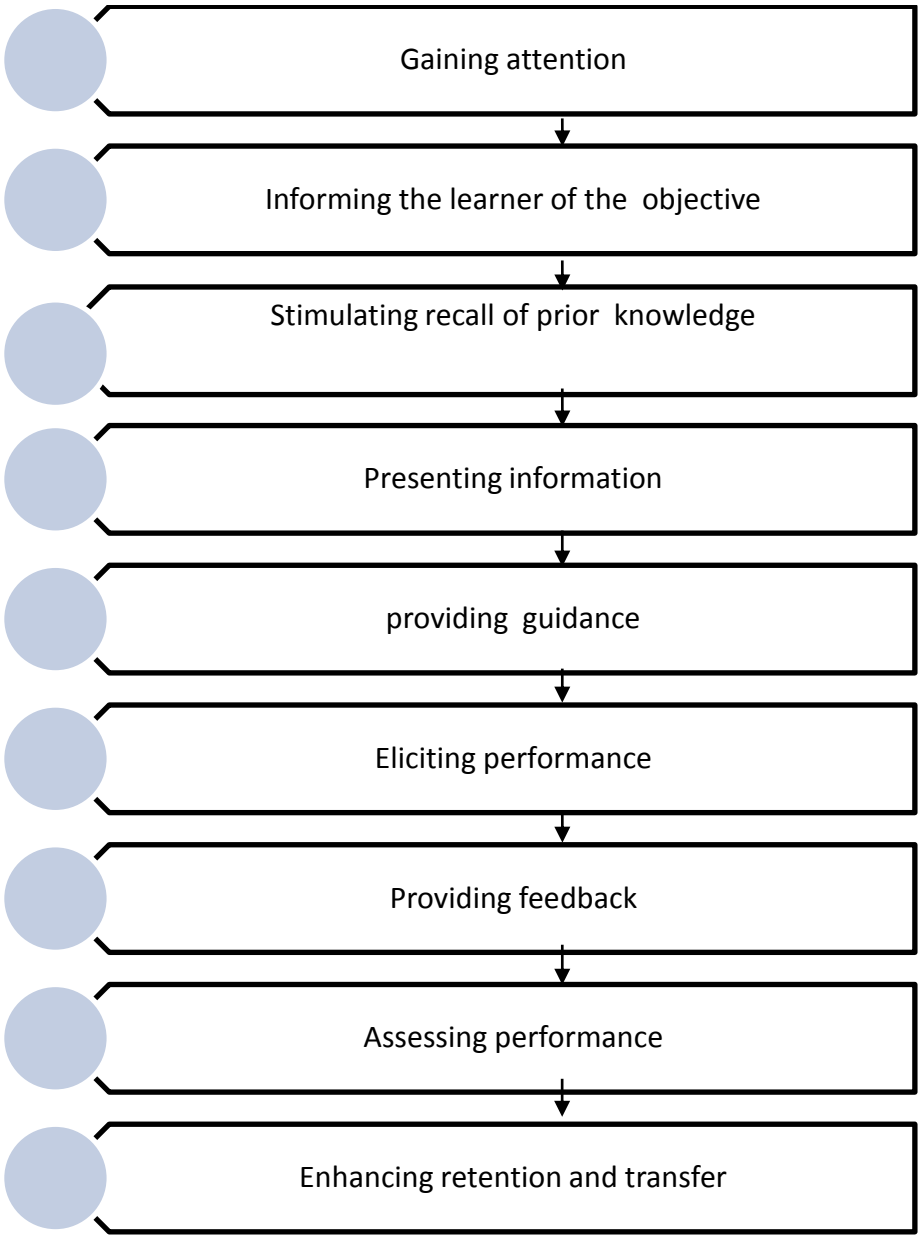
Analysis is the phase where the problem is identified, defined and solutions posed. The design phase includes development of instructional plans and strategies. During the develop phase, the lesson plans and materials are generated. Methods of instruction including all media are chosen. Implementation is the actual delivery of the instruction to the learners. During this phase, effective and efficient delivery of the material must support the learning outcomes and promote the transfer of knowledge and associated skills to the learner or participant. The final phase of the ADDIE involves evaluation. Evaluation measures the efficiency, effectiveness, value and worth of the instruction. (Taylor, 2004)

Gagne (2009) stated “Robert Gagne is considered to be one of the foremost contributors to the systematic approach to instructional design and his theory has provided a great number of valuable ideas for trainers and teachers. Gagne's model of instructional design is based on the information processing model of the mental events that occur when adults are presented with various stimuli and focuses on the learning outcomes and how to arrange specific instructional events to achieve those outcomes. Applying Gagne's nine-step model is an excellent way to ensure an effective and systematic learning program as it gives structure to the lesson plans and a holistic view to the teaching. Gagne's theories have been applied to the design of instruction

in several domains, such as the military, flying, leadership, engineering, education, and healthcare". (P12)

Robert Gagne created a nine-step process called the events of instruction, which correlate to and address the conditions of learning.

Gagne's Nine Events of Instruction



Adopted from Gagne

According to learning theory of Gaining, for the effective learning instructor should know learner's interest whether they are interested to learn or not .Then instructor guide them about what he/she is going to teach them which help them to know about what they have to learn. In other words they will be guided by the teacher about what

may be the objectives of the lessons. Then teacher will ask them about what they know about the lessons to know their knowledge about the topic which will help him to know the previous knowledge of students regarding the lessons .If they are well known about the topic they will be guided as their knowledge if they are not well known about lesson they will be engaged in the practice .After they that they are allowed to complete their tasks they practiced what they learnt earlier .Then teacher should evaluate them how much their students learnt .Finally class work should be given to them for their better understands based on topic which will help them to remember what they learnt and what they were taught by instructors . (Mangal, 2010)

2.3 Empirical Literature

Wambui (2013) found that out of 30 (100%) respondents, 5(16%) indicated that the reasons for not using the IMs effectively was the large number of learners per class, Lack of enough compound for the Centers 5(16%), Lack of learners confidence 2(7%), Language barrier 2(7%), Teacher's negative attitude 11(37%), Lack of professional skills 3(10%) and Domestic violence 2 (7%).

Chataut (2016) found that most of 70 percent teacher were using lecture method or 30 percent using both lecture and demonstration method and other remaining teachers were found adopting discussion and other methods most of the teacher were found facing problem in teaching materials in population classes and most of lower secondary level teachers were found having confident for running population classes.

Koirala (2016) Found that the respondents have a good knowledge about instructional materials as 100 percent teachers know about instructional materials and 90.47 percent of them said that IMs is means for effective classroom. 60 percent schools have availability of IMs and 40 percent schools till the date don’t have enough materials. Similarly, Sapkota (2017) found that the students who were taught using visual aids were found to have better result than the ones who were taught traditional way. On the other hand, Thapa (2069) found that the lack of manage of the lab, have not the support of NGO and local system/body in resource identify, prepare and collect IMs the school. There were teachers also lazy and lack of preparation in teaching learning materials. She found that the condition of dependency on low cost materials. She suggested that IMs should be attractive, effective, purposeful and enough.

Koirala (2072 found that use of printed materials in all schools. Office and materials are haphazard except having resource Centre school. There were71-85 percent printed materials used and 59- 82 percent visual materials used. As a whole 71 - 85 IMs were used in teaching learning process.

I reviewed many conceptual, theoretical and empirical literatures. During empirical literature review, I found effectiveness of teaching materials, availabilities and use of instructional materials, management of instructional materials, knowledge and use of instructional materials and effect of use of Instructional materials on learner participation in science classroom. But, the studies employing Gagne's and ADDIE instructional design have not been conducted so far I searched the literatures. Hence, this study attempts to identity the attitude and use of instructional materials in teaching HPE at high school teachers employing Gagne's and ADDIE instructional design.

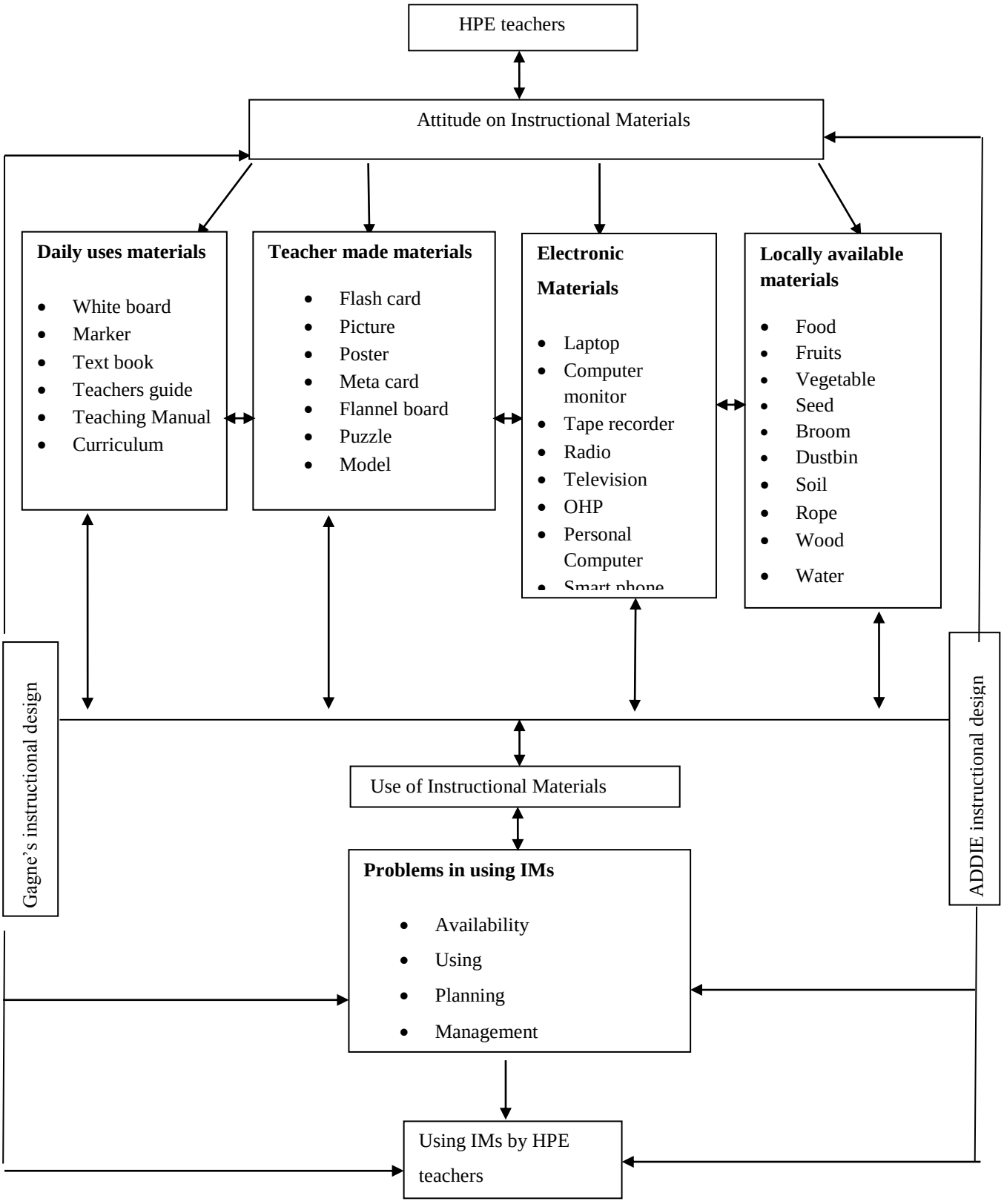
2.4 Conceptual Framework

A conceptual framework is used in research to outline possible courses of action or to present a preferred approach to an idea or thought. A conceptual framework is an analytical tool with several variations and contexts. It is used to make conceptual distinctions and organize ideas. Strong conceptual frameworks capture something real and do this in a way that is easy to remember and apply. (https://en.wikipedia.org/wiki/Conceptual_framework*)*

A conceptual framework is the representation of the understanding of the theories by the researches and her conceptualization of the relationship between different variables. In course of doing this research work, researcher also consulted different theories related to this as well as literature review and developed my concept/conceptual framework. Thus, the present study would be based on the following conceptual framework:

A wide variety of materials have been used to support the HPE teaching. For the good teaching skills, the HPE teachers should have proper knowledge of instructional aids and knowledge how to use them. Student motivation is the main aims of the teachers so he/she should have good skills about knowledge and use of instructional materials.

According to below conceptual framework, teaching skill of HPE studies teachers depend on knowledge and use of IMs such as daily uses materials, teacher made materials, electronic materials and locally available materials etc.



Instructional materials are any device with instructional content or function that use of teaching purpose, including daily uses materials, teacher made material, locally available materials and electronic materials etc. IM help[s to enhance & promote teaching learning process. Conceptual framework studies about different concepts and variables in investigation; furthermore it clears the interrelationship between concept ant variables through pictures & table. It provides clear operational map. This conceptual framework tries to show attitude of teacher use of teaching materials, its condition and problems occur during its use. In this framework Gagne's instructional theory and ADDIE instructional design is used which relates with teaching learning process.

2.5 Implication of Review for the Study

Researcher reviewed different previous research works related to my research work to some extent. After reviewing these research works, I would be get information on HPE teaching, background information of instructional materials and use of these materials in HPE classroom. Hence, I would get ideas about the process of research design through reviewing them. Literature reviewed on the above paragraphs would be useful for different way. Reviewed literature on the above paragraphs would be helpful in writing background of study, formulating objectives, to design and develop tools and instrument and to write bibliography.

CHAPTER-III
METHODS AND PROCEDURES

3.1 Research Design

Kothari posits that, "A research design constitutes the decisions regarding what, where, how much, by what means concerning an inquiry or a research study" (As cited by Devkota 2070 pp198).This study was based on the survey descriptive type of research design.

3.2 Study Area

The research area of this study was Kathmandu metropolitan. Geographically, Kathmandu is located in naturally beautified hilly region of Nepal. The main study area of my research was the capital Kathmandu metropolitan city of Nepal. This was situated in the province number three. Community schools were selected for this study.

3.3 Population

This study was based on the community based high schools of Kathmandu metropolitan city of Kathmandu district. The HPE or HE subject teachers of Kathmandu metropolitan were the population of the study. The teachers who were teaching HPE or HE subject in the class 9, 10, 11 and 12 were target group of study. The study population was 100 HPE teachers of 39 high schools.

3.4 Sampling Procedure and Sample Size

Sampling is a process or technique of choosing a sub-group from a population to participate in the study; it is the process of selecting a number of individuals for a study in such a way that the individuals selected represent the large group from which

they were selected. There are two major sampling procedures in research. These include probability and non probability sampling. Probability samples include simple random, systematic, stratified and cluster sampling. And non probability sampling includes purposive, convenience and quota sampling procedures. This study was based on census method. Census gathers information about every member of the population. The teacher was selected on the basis of census method.

3.5 Sources of Data

This study was based on primary sources of data. Attitude scale, Questionnaire and observation check list were used for primary source of data. Kathmandu metropolitan's community high schools HPE teachers were my primary source of data.

3.6 Research Tools

The questionnaire was the major tools for data collection. Besides this, the observation checklist and attitude scale were also used in this study for data collection.

3.6.1 Questionnaire

According to Barr, Davis and Johnson "Questionnaire is a systematic compilation of questions that are administered a sample of population form which information is desired" (Khanal, 2072). Researcher used questionnaire as the main tool for data collection in the study. Attitude scale & questionnaires were provided the teacher to fill up self-administration.

3.6.2 Observation Check List

Observation is a systematic and deliberate study though the eyes of the spontaneous occurrence at the time they occur (Wan, 2071). Researcher used observation check list tool for data collection in this study.

3.7 Standardization of the Tools

The attitude scale, questionnaires and observation check list were submitted to the supervisor in HPE department for correction and guidance. Then research tools were

based on pre-tested in 2 community based high school of Kathmandu Metropolitan in order to determine the validity, practicability and objectivity. On the basis of pre-test result these tools were re-corrected and finalized.

3.8 Data Collection Procedure

At first, we got permission from Health and Population Education department of Tribhuwan University to fulfill our purpose. And we went to the selected school and got permission from that school. And then I met HPE subject teacher and after meeting subject teacher, I explained the purpose and nature of the study in brief, and distribute the prepared questionnaire to the selected teachers and provide guideline to them to fill up the questionnaire. After completing questionnaire the class was observed through observation check list. After completing data collection the researcher came back and described everything in details in research report.

3.9 Data Analysis Procedure

After collecting data, it checked and kept in sequential order according to the need of the study. The data was verified manually to reduce possible errors and categorized in different relevant heading and subheading for tabulation. Moreover, after collecting data it was analyzed and interpreted in table, pie chart, bar-diagram and other graphical

Symbols are used to make the presentation more clear and effective. Thus, finally it shows the findings and conclusion with drawn recommendations.

3.10 Ethical Consideration

Ethical consideration in research is very important ethics. It is a one more principal or beliefs about what are right and wrong, I was careful about moral issues that may occur in the school. Besides this, I was careful to avoid any harm to the harmony and relation among the information, to maintain the secrecy and keep the information free from any kind of harm. I replaced the name of the resource center respondents by pseudo name in my writing in the research.

CHAPTER-IV

ANALYSIS AND INTERPRETATION OF THE DATA

This chapter deals with the presentation, analysis and interpretation of collected data in detail. It is most important chapter of this study. To analyze the data, it mainly used statistical methods like, frequency and percentage. Table, chart and graph were also employed to present the data to make clear and meaningful. Data were interpreted based on descriptive way. This information is organized under different titles, socio-demographic profile, attitude towards instructional materials, use of instructional materials, problems faced by teachers using instructional materials. Analysis and interpretation are categorized as follows:

4.1 Socio-demographic Profile of Respondents

This section, analysis the background or characteristics of respondents which is related to overall school teacher's characteristics. Such background includes: type of school, age, gender, caste/ethnicity, religion, educational status.

Table 1: Socio-demographic profile of respondents

Statement	**Description**	**Frequency**	**Percentage (%)**
Type of school	community	100	100.0
	Private	0	.0
Age	20-30 years	24	24.0
	30-40 years	47	47.0
	40-50 years	18	18.0
	Above 50 years	11	11.0
Sex	Female	42	42.0
	Male	58	58.0
Caste/ ethinicity	Chettri	44	44.0
	Brahmin	26	26.0
	Aadibasi/ janajati	8	8.0
	Dalit	7	7.0
	Madhesi	9	9.0
	Muslims	6	6.0
Religion	Hindu	73	73.0
	Buddha	10	10.0
	Muslims	9	9.0
	Muslims	8	8.0
	Others	0	.0
Educational status	Bachelor	22	22.0
	Masters	74	74.0
	M.Phil/ P.hD	4	4.0

The table no.1 shows the type of school, age, sex/gender, caste/ethnicity, religion and educational status of the respondent. The study was accomplished in the attitude and practice of using IMs by high school HPE teachers in Kathmandu metropolitan. Community based (100) schools were selected for this study. The highest number of respondents in 30-40 years aged group is 47 percent. Others aged group of respondent were as 20-30 years is 24 percent, 40-50 years is 18 percent and above 50 years is 11 percent respectively. In this study 58 percent of the total respondents were found male and 42 percent were female were respectively.

In caste/ethnicity group the highest proportion of respondents is Chettri is 44 percent, Brahmin is 26 percent, Madhesi is 9 percent, Aadibasi/Janjati is 8 percent, Dalit is 7 percent and Muslim is 6 percent respectively. Likewise in religion group, the highest proportion of respondents is Hindu is 73 percent, Buddha is 10 percent, Christian is 9 percent and Muslim is 8 percent respectively. In the case of educational status highest number of 74 percent respondents were master holders, 22 percent bachelor holders and 4 percent were M. Phil/Ph. D respectively.

4.2 Attitude towards Using Instructional Materials

Enayati, et al. (2012), found that, teacher's attitude toward the use of technology in education, was positive. As the change made by entering information and communication technology in Education system's elements, traditional methods can't help learner's requirements in today's society and it's necessary that the main elements of education system particularly teachers subject to right alteration with global progresses and with positive attitude in this path, use this changes for upgrading their knowledge level and usage of them to improve education. Attitude of high school HPE teachers towards using instructional materials in class shows as given table:

Table 2: Attitude of teachers toward using IMs

Statements	Descriptions	Frequency	Percentage (%)
Instructional materials are most important in teaching HPE.	Agree	100	100.0
	Undecided	0	.0
	Disagree	0	.0
Instructional materials provide the concrete concept.	Agree	100	100.0
	Undecided	0	.0
	Disagree	0	.0
It brings simplicity and clarity in communication of subject matter.	Agree	100	100.0
	Undecided	0	.0
	Disagree	0	.0
IMs provide first-hand knowledge and experiences to the students.	Agree	100	100.0
	Undecided	0	.0
	Disagree	0	.0
It play vital role to make meaningful and effective learning.	Agree	100	100.0
	Undecided	0	.0
	Disagree	0	.0
IMs help to provide practical and behavioral knowledge.	Agree	100	100.0
	Undecided	0	.0
	Disagree	0	.0
It helps to increase the interest and participation of students.	Agree	100	100.0
	Undecided	0	.0
	Disagree	0	.0
IMs materials increase the achievement of the students in teaching learning process.	Agree	100	100.0
	Undecided	0	.0
	Disagree	0	.0
It helps to the teacher for the student's evaluation.	Agree	100	100.0
	Undecided	0	.0
	Disagree	0	.0
IMs help to rigid the relation between students and teacher.	Agree	100	100.0
	Undecided	0	.0
	Disagree	0	.0

Table no.2 shows that, 100 percent of the teachers showed their positive view using instructional materials in classrooms. Instructional materials are most important in teaching HPE. It provides the concrete concept. It brings simplicity and clarity in communication of subject matters, provide firsthand knowledge and experiences to the students, play vital role to make meaningful and effective learning, help to provide practical and behavioral knowledge. It helps to increase the interest and participation of students. It increases the achievement of the students in teaching learning process. It helps to the teacher for the student's evaluation and to rigid the relation between students and teachers. The attitude scale's statements are related to ADDIE model and Gagne's instructional design. The final phase of the ADDIE involves evaluation. Evaluation measures the efficiency, effectiveness, value and worth of the instruction. (Taylor, 2004)

4.3 Situation of Using Instructional Materials

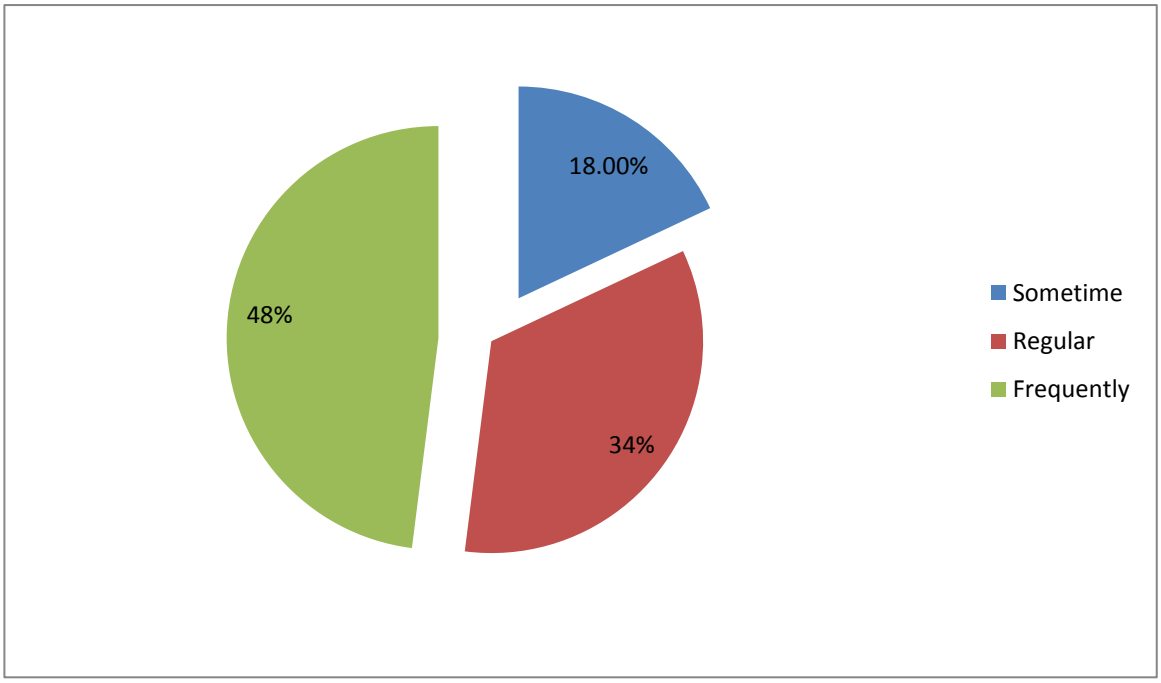
Use of instructional materials in HPE teaching is useful because it broadens students memory power, it can be concluded that the use of instructional materials in the HPE classroom are necessary and very important. Instructional materials make HPE class more realistic and lively, since it creates more curiosity among students and makes active participation. The main objective of this study was to analyze the situation of using IMs by HPE teachers. In order to accomplish these objectives the data regarding the use of IMs were collected through us of instructional materials questionnaire and observation. The current trends for instructional technology in education are exciting. For instance, mobile and cloud computing have created a new platform which allows for unlimited computing resources. Today's world is characterized by digital technology and the need for resources to accommodate these types of technologies is increasing.

4.3.1 Use of Instructional Materials

Health education is behavioral subject. So, we should use regular IMs during the teaching HPE, which makes teaching learning sustainable and effective. According to Gagne's instructional design, during teaching learning process at first teacher should informing learner of the objectives and then make the students attend presented learning materials after that to assimilate new learning materials and to provide

sufficient learning guidance for learning and memorizing the presented materials and subject matter. How often do you use IMs in teaching HPE? This question asked and result was like the following:

Figure 1 : Use of instructional materials



This figure 1 shows that the use of IMs for teaching HPE. 48 percent respondent said used IMs frequently, 18 percent of respondent used sometime and 34 percent of respondents said regular used instructional materials.

Instructional materials are most important in teaching HPE. It helps to provide practical and behavioral knowledge. Instructional materials provide the concrete concept. It provides firsthand knowledge and experiences to the students. It increases the achievement of the students in teaching learning process and it helps to the teacher for the student's evaluation. 100 percent teachers view was positive toward using instructional materials but only 34 percent teachers said that they are regular used teaching materials. The importance of teaching aids can be well described by old Chinese proverb i.e. "I hear I forget, I see I remember, I do I understand" (As cited by, Basnet, 2016 pp12).

4.3.2 Types of Instructional Materials

Instructional materials refers to those materials which are used for teaching and learning purpose including printed, teacher made, electronic, local materials and other related materials.

Table 3: Types of instructional materials

Types of IMs	Frequency	Percentage
Printed	91	91.0
Teacher made	96	96.0
Electronic	83	83.0
Local	89	89.0

From the above table 3 it shows that the 96 percentage, 91 percentages, 89 percent and 87 percent respondents' responses they said that, used teacher made materials printed, local and electronic materials respectively.

Instructional materials provide first-hand knowledge and experiences to the students. It helps to the teacher for the student's evaluation. According to the data 91percent teachers used printed materials, 96 percent teachers used teacher-made materials, 87percent teachers used electronic materials and 89 percent teachers used local materials but according my observation most of teachers were used printed & daily usage materials.

4.3.3 Using printed materials

Printed materials means any publication, document or record including, but not limited to the following: newspapers, magazines, books, photographs, drawing, pre-recorded magnetic audio tape, curriculum, instructional table, teacher's guide, etc. Most students are very comfortable using printed materials to learn.

Table 4: Using printed materials

Printed materials	Frequency	Percent
Book	100	100.0
Curriculum	77	77.0
Instructional table	73	73.0
Teacher guide	85	85.0

Table no. 4 shows that, the used of printed materials the 100 percent, 85 percent, 77 percent and 73 percent had responded, book, teacher's guide, curriculum and instructional table respectively.

The respondents view was positive in using materials. 77 percent teachers said that they were used curriculum but, according my class observation only 26 percent teachers used it. Above the table 85 percent teacher said that they used teacher's guide but, while my class observation only 30 percent teachers used teacher's guide. The highest proportion of use of teaching materials in printed materials was book.

4.3.4 Using Teacher Made Materials

Teacher made materials are those materials which made by teacher like: Meta card, poster, chart, Flatten board, puzzle and picture etc. The below table shows the using teacher made materials of the respondents.

Table 5: Using Teacher Made Materials

Teacher made materials	Frequency	Percentage
Meta card	82	82.0
Poster	86	86.0
Chart	83	83.0
Flatten board	79	79.0
Puzzle	40	40.0
Picture	84	84.0

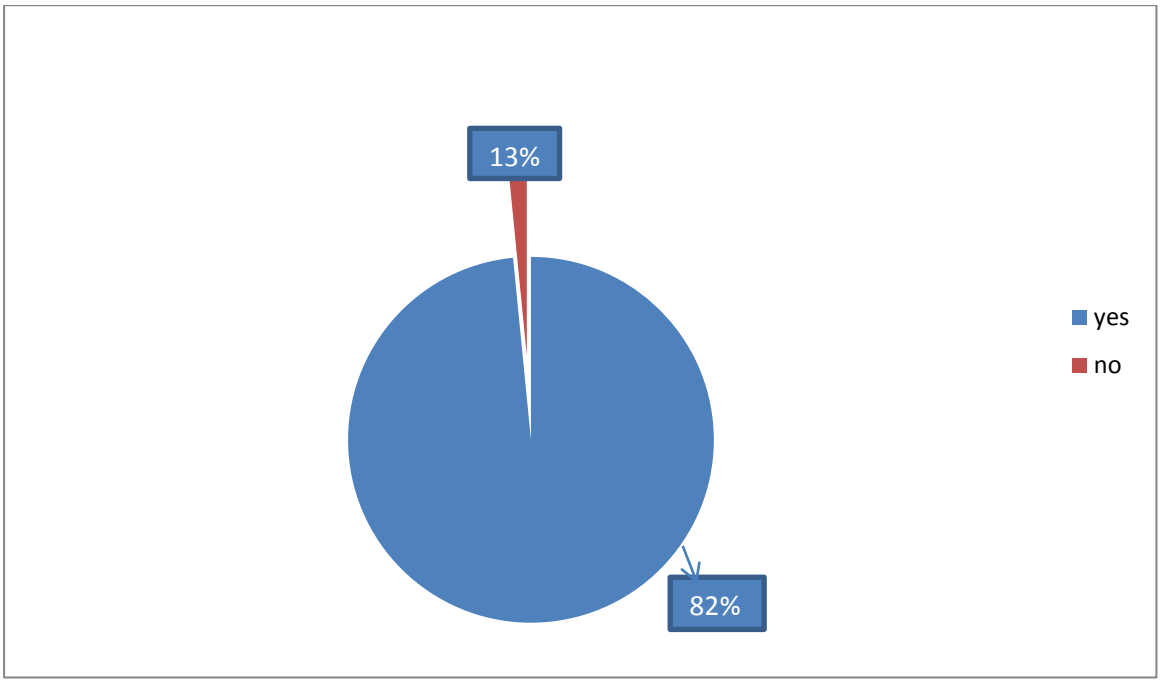
From the above table 5 shows that the case of using teacher made materials 86 percent, 84 percent, 83 percent, 82 percent, 79 percent and 40 percent had responded poster, picture, chart, meta card, flatten board and puzzle respectively.

The highest proportion of respondents said that they were used poster, which was 86 percent. But my class observation only 38 percent teachers were used poster. While my class observation the highest proportion of respondents were used picture, which was 57 percent.

4.3.5 Using electronic materials

Electronic materials are most important in teaching learning process. It brings simplicity and celerity in communication of subject matter.

Figure 2: Using electronic materials



From the above figure 2 shows that, the 87 percent of respondent used electronic materials and 13 percent of respondent did not use electronic materials in teaching HPE.

Electronic materials are most important in teaching learning process. It brings simplicity and celerity in communication of subject matter. It play vital role to make meaningful and effective learning.

4.3.6 Classroom for the Use of Electronic Materials

Do you have the classroom for the use of electronic materials? This question asked and result given below:

Table 6: Classroom for the use of electronic materials

Classroom for electronic materials	Frequency	Percentage
Yes	28	30.1
No	65	69.9

Table no. 6 shows that, the 65 percent of respondents' responses don't have the classroom and 28 percent respondent has the classroom for the use of electronic materials.

The 100 percent respondents view was positive in using teaching materials, 87 percent teachers said that they used IMs but only 28 percent teachers said they had classroom for using electronic materials. The main problem was lack of classroom for using electronic materials.

4.3.7 Use of Electronic Materials in HPE teaching

Electronic materials are the type of materials which are typically used as core elements in a variety of device applications. These elements can be, for example memories, displays, LEDs and could be easily seen in daily electronic such as, mobile phones, computer, laptop, tables, GPS devices, LED bulbs, TVs and monitors.

Table 7: Use of electronic materials in HPE teaching

Use of electronic materials	Frequency	Percentage
Computer	64	64.0
Laptop	47	47.0
Smart phone	62	62.0
OHP	66	66.0
Smart board	23	23.0
Television	25	25.0
Radio	25	25.0
Tape recorder	56	56.0

From the above table 7 shows that the 66 percent, 64 percent, 62 percent, 56 percent, 47 percent, 25 percent, 25 percent and 23 percent had responded OHP, computer, smart phone, tape recorder, laptop, television, radio and smart board respectively. The highest proportion of respondents used OHP and the lowest proportion was used smart board but, while class observation the highest proportion of teachers used smart phone, which was 48 percent. Only 5percent was used smart board.

Materials promote learner reflection on the process and content of learning. Learners use various forms of technology that help them develop and apply their skill. These technologies might include computers and electronic communication networks, data gathering equipment, video equipment etc. (Education, 2003)

4.3.8 Types of Materials Used for a Week

Instructional materials are those printed and non-printed materials which are used in teaching learning process. There are many kinds of teaching materials. Like: printed materials, teacher-made materials, electronic and local materials. What type of materials have you been used for a week? This question asked and result was like the following:

Table 8: Types of materials used for a week

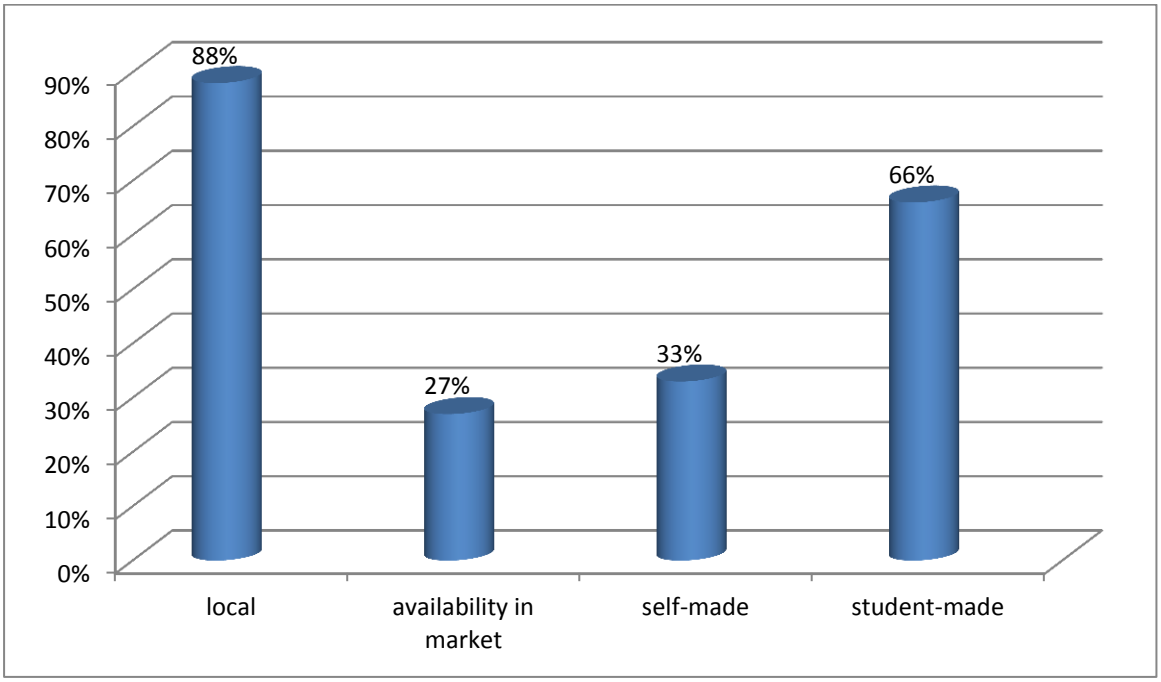
Weekly used materials	Frequency	Percentage
Book	100	100.0
Teacher guide	86	86.0
Meta card	74	74.0
Flatten board	72	72.0
Poster	71	71.0
Computer	60	60.0
Smart phone	59	59.0
Smart board	27	27.0
Local materials	90	90.0

Table no.8 shows that the use of instructional materials for a week, the highest proportion of respondent used book is 100 percent, 90 percent used local materials, 86 percent used teacher's guide 74 percent used meta card, 72 percent used flatten board, 71 percent used posters, 60 percent used computer, 59 percent used smart board.

4.3.9 Priority of select IMs

While you are deciding to design instructional materials, how can you select the materials and how you conform they would be beneficial for teaching HPE on the basis of those questions, questions asked to the teachers and their answer were like the following:

Figure 3: Priority of select instructional materials



From the above figure 3 shows that the 88 percent, 66 percent, 33 percent and 27 percent respondents' responses local, student made, self- made available in market respectively.

According to the National policy we should select those materials, which are available in the local area, which is related to the subject matter, which is easy to communication of subject matter & easy to understanding. Teacher should be, aware of learners need, interest, level of ability, background, maturity level & their different learning styles. (College of Education, 1956)

According to the data, teachers have good knowledge about the selection of IMs. Most of teachers said that they were selecting the local & students-made materials. In the community schools due to their irresponsible behavior they were not using such materials but they had knowledge about the materials, which were important for teaching HPE at high level school.

4.3.10 Using local materials in teaching HPE

Local materials are those materials which are easily available in local area. Such as, seed, food grain, fruits, vegetable, soil, rope wood etc.

Table 9: Using local materials in teaching HPE

Using local materials	Frequency	Percentage
Seed and food grain	96	96.0
Fruits	96	96.0
Vegetable	81	81.0
Soil	73	73.0
Wood	81	81.0
Rope	85	85.0

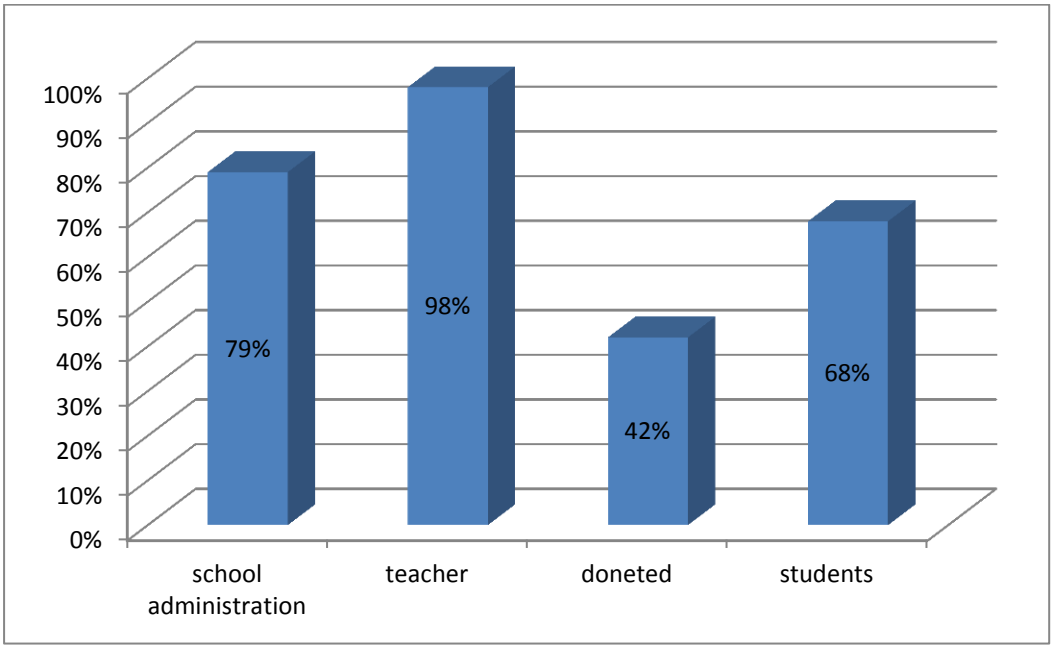
Table no.9 shows that the 96percent was respondent used seed & food grain, 96 percent was used fruits, 85percent was used rope, 81percent was used vegetable, 81percent was used wood and 73percent was respondent used soil in local materials.

The 100percent of teachers showed positive view using teaching materials in teaching HPE. The highest number of teachers said that they were used seed & food grain and fruits. This was 96 percent. The lowest number of teacher said that they were used soil, which was 73 percent. But while observing the classroom only 35percent teachers used real materials & only 21percent used seed and food and 33percent were used fruits.

4.3.11 Collection and Construction of IMs

Teacher, students, school and many kinds of agencies are play vital role in collect & construct of teaching aids. Instructional materials are collected and constructed through the school administration, teacher, NGO/INGOs and students. Who construct & collect the materials for teaching? This question asked and result was like the following:

Figure 4: Collection and construction of Instructional materials



From the above figure 4 shows that, the collection and construction of instructional materials was 98 percentage collected by teachers, 79percent by school administration, 68percent by students and 42percent by donated. The highest proportion of respondents was collect & constructs the materials by teachers.

According to ADDIE model "during the develop phase, the lesson plans and materials are generated. Methods of instruction including all media are chosen.

4.3.12 Available of Teaching Materials

Teaching materials plays the vital role on effective teaching. Teaching materials are available by teacher, students DEO and other sources.

Table 10: Available of teaching materials by different sources

Source of available IMs	Frequency	Percentage
Teacher	92	92.0
School	92	92.0
District educational office	52	52.0
Others	8	8.0

Above table 10 shows that the 92 percent of IMs were available by the teachers, 92 percent of IMs by school, 52 percent by DEO and 8 percent were available by other sources. The highest number of respondents was available the materials by school and teachers.

Instructional materials are needed for student to provide clear concept about subject matter. The effectiveness of the HPE teaching depends upon the availability and the use of instructional materials in the classroom.

4.3.13 Sufficiency of Available Materials

Available materials should be sufficient for teaching HPE in the school. Is, available materials sufficient or not? This question asked and result was like the following:

Table 11: Sufficiency of available materials

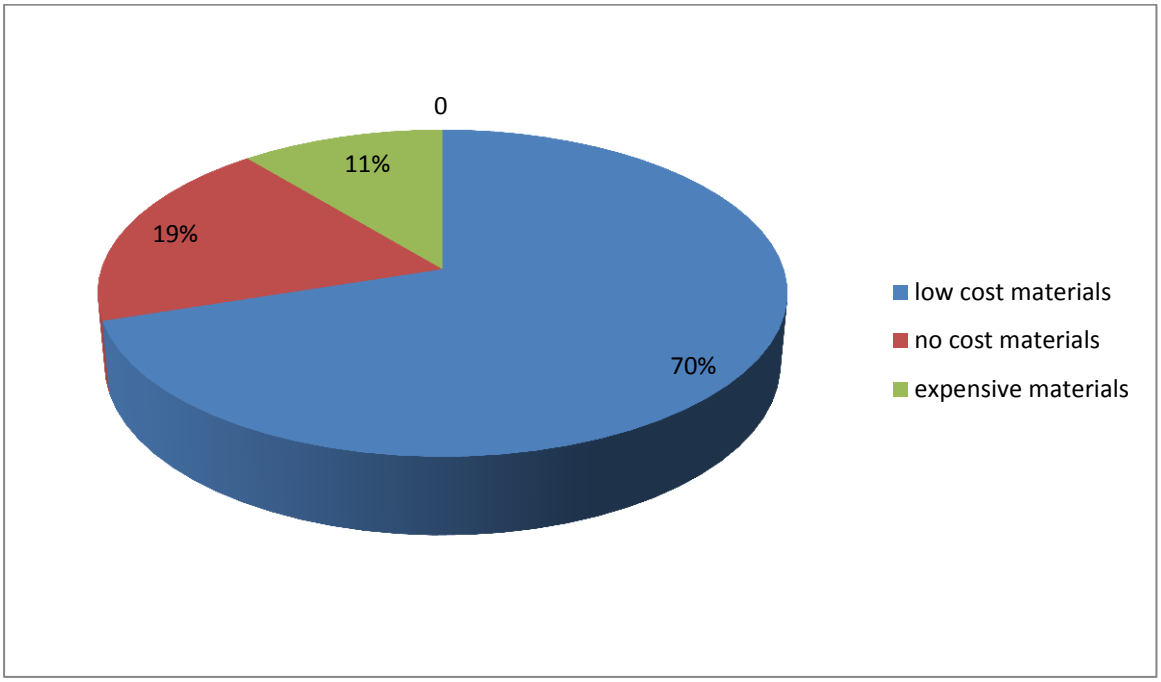
Sufficiency of available materials	Frequency	Percentage
Yes	14	14.0
Not	86	86.0

Table no. 11 shows that, the 86 percent of respondents said that the available materials are not sufficient and 14 percent of respondents said that the available materials are sufficient for teaching HPE. Available materials should be sufficient for teaching HPE in the school but there was the main problem was lack of sufficiency of available materials.

4.3.14 Mostly used Teaching Materials

On the basis of cost, instructional materials are low cost materials, no cost materials and expensive materials. Situation of using those materials were following:

Figure 5: Mostly used teaching materias



From the above figure 5 shows that the mostly used materials were 70 percentage were low cost materials, 19 percent were no cost materials and 11 percent were expensive materials used in teaching HPE. Mostly teachers were used low cost materials while teaching HPE.

4.3.15 Financial Management of IMs

Finance management by different sources for instructional materials. Teacher and school should co-ordinate with stakeholders for financial management the teaching materials.

Table 12: Financial management of IMs

Financial management of IMs	**Frequency**	**Percentage**
School	96	96.0
Self-made	47	47.0
NGO/INGO	48	48.0
Others	8	8.8

Table 12 show**s** the financial management of instructional materials. From this table it can concluded that 96 percent financial support for the materials was provided by the school, 47 percent was provided by teacher, 48 percent was provided by the NGO or INGO and 8 percent was provided by other sources. In this way financial part for the study was managed from different sources.

Class Observation

Instructional materials refer to the human & non-human materials & facilities that can be used to encourage, improved and promote teaching & learning activities. Instructional materials include: daily uses materials, teacher-made materials, electronic materials and locally available materials.

4.3.16 Daily uses materials

Daily uses materials are those materials, which is daily used in the classroom during teaching learning process. Daily uses materials are white board, marker, text book, teacher's guide, teaching manual, syllabus and curriculum etc.

Table 13: Daily uses materials

S.N.	Daily uses materials	Yes		No	
		Frequency	Percentage	Frequency	Percentage
1.	White board	95	95.0	5	5.0
2.	Marker	95	95.0	5	5.0
3.	Text book	100	100.0	0	0.0
4.	Teacher's guide	30	30.0	70	70.0
5.	Teaching manual	22	22.0	78	78.0
6.	Curriculum	26	26.0	74	74.0

From the above table 13 shows the situation of using instructional materials, which used daily in teaching HPE classroom. Out of hundred teachers 95percent teacher used white board. Similarly 95percent teacher was used marker, 100 percent teacher was used textbook, 30 percent teacher was used teacher's guide, 22 percent was used teaching manual and 26 percent teacher was used curriculum. According to the data most of teachers were used book, white board and marker and only 22 percent teacher used teaching manual in daily uses materials.

4.3.17 Teacher-made materials

Teacher-made materials are those materials which made by teacher like: Meta card, poster, chart, Flatten board, model, puzzle and picture etc. The below table shows the using teacher made materials.

Table 14: Teacher-made materials

S.N.	Teacher-made material	Yes		No	
		Frequency	Percentage	Frequency	Percentage
1.	Flash card	31	31.0	69	69.0
2.	Picture	57	57.0	43	43.0
3.	Ralley	35	35.0	65	65.0
4.	Poster	38	38.0	62	62.0
5.	Meta card	43	43.0	57	57.0
6.	Flatten board	46	46.0	54	54.0
7.	Puzzle	10	10.0	90	90.0
8.	Model	13	13.0	87	87.0

From the above table 14 shows that, during the class observation the highest number of teacher were used picture in teaching HPE classroom, which was 57percent. In the same vain, 46 percent teacher was used flatten board, which was second highest. Similarly, 31 percent teacher was used flash card, 35 percent was used ralley, 38 percent used poster, 43 percent used Meta card, 13 percent used model and only 10

percent teacher was used puzzle in teaching learning process. This was lowest number of teacher, who used puzzle in teacher-made materials.

4.3.18 Electronic Materials

Electronic materials are most important in teaching learning process. It brings simplicity and celerity in communication of subject matter. Electronic materials are the type of materials which are typically used as core elements in a variety of device applications. These elements can be, for example memories, displays, LEDs and could be easily seen in daily electronic such as, mobile phones, computer, laptop, tables, GPS devices, LED bulbs, TVs and monitors.

Table 15: Electronic materials

S.N.	Electronic materials	Yes		No	
		Frequency	Percentage	Frequency	Percentage
1.	Laptop	25	25.0	75	75.0
2.	Personal computer	30	30.0	70	70.0
3.	Smart phone	48	48.0	52	52.0
4.	OHP	31	31.0	69	69.0
5.	Television	14	14.0	86	86.0
6.	Radio	13	13.0	87	87.0
7.	Computer monitor	28	28.0	72	72.0
8.	Tape recorder	21	21.0	79	79.0
9.	Smart board	5	5.0	95	95.0

From this table 15 shows that, during the class observation I found that 25 percent teacher used laptop, 30 percent teacher used computer, 48 percent teacher used smart phone, 31 percent used OHP, 14 percent was used television, 13 percent was used radio, 28 percent was used computer monitor, 21 percent teacher used tape recorder and only 5 percent teacher was used smart phone.

4.3.19 Locally Available Materials

Local materials are those materials which are easily available in local area. Such as, seed, food grain, fruits, vegetable, soil, rope, wood, broom, dustbin, water etc.

Table 16: Locally available materials

S.N.	Locally available materials	Yes		No	
		Frequency	Percentage	Frequency	Percentage
1.	Food	21	21.0	79	79.0
2.	Fruits	33	33.0	77	77.0
3.	Vegetable	29	29.0	71	71.0
4.	Seed	16	16.0	84	84.0
5.	Broom	25	25.0	75	75.0
6.	Dustbin	51	51.0	49	49.0
7.	Soil	13	13.0	87	87.0
8.	Rope	41	41.0	59	59.0
9.	Wood	46	46.0	64	64.0
10.	Water	40	40.0	60	60.0

The 100 percent of teachers showed positive view using teaching materials in teaching HPE. The highest number of teachers said that they were used seed & food grain and fruits. This was 96 percent. The lowest number of teacher said that they were used soil, which was 73 percent.

While class observation, from the above table we can concluded that, the highest numbers of teachers were used dustbin, which was 51 percent. Similarly, 21 percent used food, 33percent used fruits, 29 percent used vegetable, 16 percent was used seed, 25 percent used broom, 13 percent was used soil, 41 percent used rope, 46 percent used wood and 40 percent teacher was used water in teaching HPE class.

4.4 Problem Faced by HPE Teachers While Using IMs

There are many problems in using teaching materials. Such as, using IMs related problems, collecting IMs related problems, using electronic materials related

problems, availability of teaching materials related problems, problems in manage the teaching materials, problems in planning of IMs and problems in financial management etc. Teachers faced many problems while using instructional materials like: lack of training, lack of skill, lack of materials etc. In this section, analyze and interpret the problem faced by HPE teachers while using IMs. Which is given the below:

4.4.1 Problems Faced by the Teacher in Availability IMs

Teaching materials plays the vital role on effective teaching. Teaching materials are available by teacher, students DEO and other sources. The problems in availability of instructional materials are: lack of budget, lack of co-ordination with stakeholders etc.

Table 17: Problems faced by the teacher in availability IMs

Problems	Frequency	Percentage
Lake of budget	82	82.0
No more co-ordination with stakeholder	86	86.0
Others	2	2.0

This table 17 shows the percentage of different problems faced by the teacher in availability the instructional materials. The main problem in availability of IMs was no more coordination with stakeholder which was 86 percent. Similarly another problem was lake of budget which was 82 percent and 2 percent was other problem.

The highest problems faced by the teacher in availability IMs were no more co-ordination with stakeholders and second were lake of budget.

4.4.2 Problems in Collecting IMs

Instructional materials make teaching and learning interesting, easy and amusing. For the teaching of HPE to be effective, it is necessary for teachers to make and use of different types of instructional materials. But there are many problems in collecting instructional materials.

Table 18: Problems in collecting IMs

Problems in collecting IMs	Frequency	Percentage
Lake of co-ordination	88	88.0
Lake of budget	84	84.0

Above table 18 shows the result of problems in collecting IMs in percentage. Mainly there were two problems. The first problem was lake of coordination which was about 88 percent and second problem was lake of budget which was about 84 percent. The main problem in collecting instructional materials was lake of co-ordination and second was lake of budget.

4.4.3 Problems in using IMs

Teaching materials play vital role in teaching learning process. The problems in using instructional materials are: shortage of materials, laziness amongst the teachers, lack of fund for the purchase of instructional materials, lack of appropriate materials, time, lack of training, lack of skill etc.

Table 19: Problems in using IMs

Problems in using IMs	Frequency	Percentage
Lake of training	49	49.0
Spend more time	9	9.0
Large number of students	8	8.0
Lake of skill	59	59.0
Lake of materials in school	84	84.0

Above table 19 shows the percentage of problems in using IMs. Lake of training was49 percent, spending more time 9 percent and large number of student was 8 percent, lack of skill was 59 percent and main problem was lack of materials in school was 84 percent. It was concluded that the major problem was lake of materials in school and the problem having lowest percentage was large number of students.

According to the ADDIE instructional design, Implementation is the actual delivery of the instruction to the learners. During this phase, effective and efficient delivery of the material must support the learning outcomes and promote the transfer of knowledge and associated skills to the learner or participant. But there were many problems in using instructional materials.

4.4.4 Problems in using electronic IMs

Electronic materials are most important in teaching learning process. It brings simplicity and celerity in communication of subject matter. Electronic materials are the type of materials which are typically used as core elements in a variety of device applications. These elements can be, for example memories, mobile phones, computer, laptop, tables etc. Given table shows the problems in using electronic materials.

Table 20: Problems in using electronic IMs

Problems in using electronic materials	Frequency	Percentage
Lack of trained teacher	48	48.0
Lack of classroom	65	65.0
Lack of electronic materials	42	42.0
Lack of knowledge & skills	59	59.0

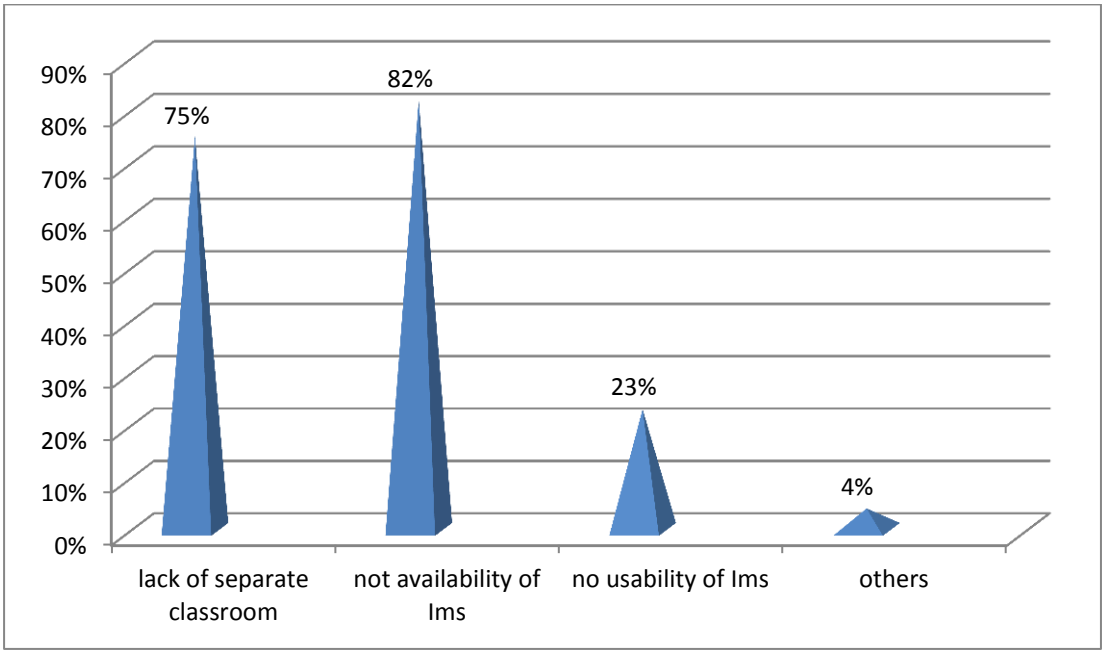
Above table 20 shows the percentage of problems in using electronic IMs. Lake of trained teacher was 48 percent, lack of electronic materials was 42 percent, lack of knowledge and skill was 59 percent and main problem was lack of classroom was 65 percent. It was concluded that the major problem was lake of classroom in school and the problem having lowest percentage was lack of electronic materials.

4.4.5 Problems in management of IMs

There are many problems faced by teachers in using instructional materials. One of them is problems in management of instructional materials. Teachers faced many

problems in manage the instructional materials like: lack of separate classroom, not availability of instructional materials & not usability of instructional materials etc.

Figure 6: Problems in management of IMs



The percentage of different problems of management of IMs is shown in figure 6.The problem of lake of separate classroom was 75 percent which was second highest problem. Similarly percentage of lake of availability of IMs was 82 percent which was major problem. Out of hundred teacher 23 percent did not use IMs and the percentage of other problem was 4 percent.

The major problem was not availability of instructional materials and the lowest percentage was no usability of materials.

4.4.6 Problems in planning IMs

According to the ADDIE instructional design first phase is analysis. Analysis is the phase where the problem is identified, defined and solutions posed. The design phase includes development of instructional plans and strategies.

Table 21: Problems in planning IMs

Problems in planning IMs	Frequency	Percentage
Lake of supervision and evaluation	88	88.0
Not attraction of teaching profession	70	70.0
No analysis of the usability of teacher attitude	53	53.0
No plan	94	94.0

The percentage of different problems in planning of IMs is shown in table 21. From this result we can concluded that the percentage of lake of supervision and evaluation was 88 percent, 70 percent had no attraction on teaching profession. Similarly the percentage of lake of analysis of the usability of teacher's attitude was 53 percent and the percentage of lake of plan was 94 percent which occupied highest percentage so was the major problem.

4.4.7 Sufficient materials to teach HPE

The extent of availability of instructional materials for teaching and learning of HPE in high schools effect quality of education. Schools should sufficient materials to teach HPE in high school. But there was lack of sufficient materials in teaching HPE at high school.

Table 22: Sufficient materials to teach HPE

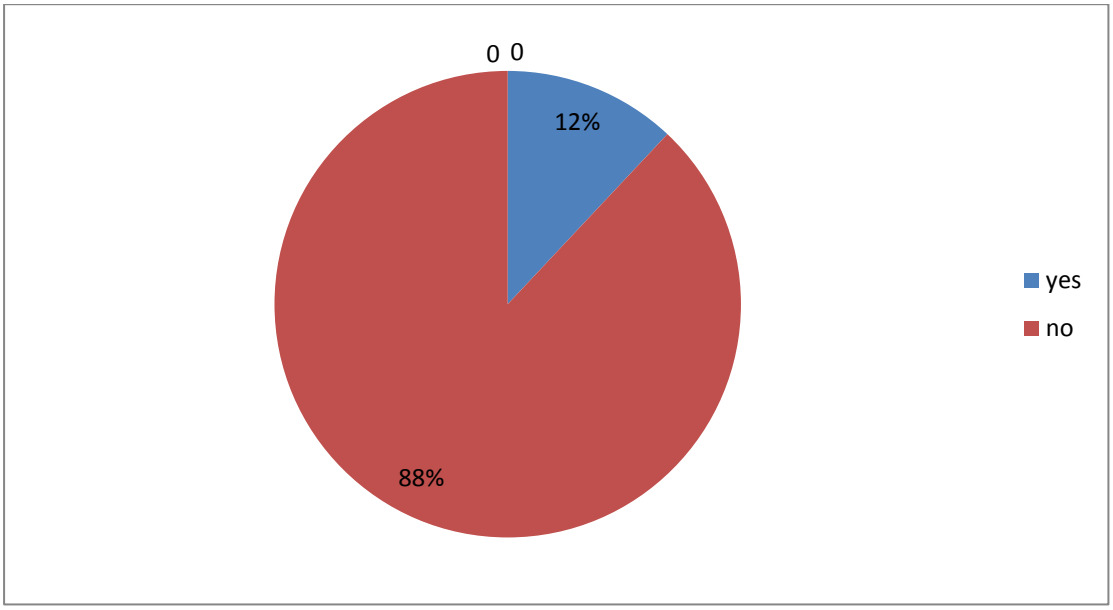
Sufficient materials to teach HPE	Frequency	Percentage
Yes	16	16.0
No	84	84.0

The percentage of sufficient materials to teach HPE is shown in table 22. From this result it was concluded that only 16 percent teachers had sufficient materials to teach HPE whereas 84 percent teachers had not sufficient materials to teach HPE. Therefore there was lake of sufficient materials to teach HPE.

4.4.8 Sufficiency of Available Materials for Every Lesson

All schools have instructional materials but not sufficient for every lesson in teaching HPE at high schools. Teaching HPE in high schools are not available sufficiently teaching materials and less use of instructional materials in classroom.

Figure 7: Sufficiency of available materials for every lesson



The figure no. 7 shows that the percentage of sufficiency of available materials for every lesson of HPE. Only 12 percent respondents said that available materials were sufficient for every lesson but 88 percent respondents said that available materials were not sufficient for every lesion while teaching HPE. It means some materials were available and there were no sufficient teaching materials for every lesson to teach HPE.

4.4.9 Types of Participation of Students in Using IMs

Instructional material helps to increase the interest & participation of students. Teaching materials increase the achievement of the students in teaching learning process. It helps to rigid the relation between students and teachers.

Table 23: Types of participation of students in using IMs

participation of students	Frequency	Percentage
Dispensable	0	.0
Partial	64	64.0
Completely	36	36.0

The percentage of types of participation of students in using teaching materials is shown in table 23. From this result we can concluded that 64 percent of the students were participated partially and 36 percent of the students were participated completely in the use of teaching materials. There were no any students which were not participated in using teaching materials. Such participation of the students was helpful for the teacher while teaching. 100 percent of teachers showed their positive views about those statements but teacher said that only 36 percent students completely participated in using IMs**.**

CHAPTER-V
SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary of the study, major findings, conclusions and recommendations.

5.1 Summary

Teaching materials and media in health and physical education are those teacher made, locally available, printed and electronic aids which are used in course of teaching health education to meet the instructional objectives according to the nature of content. In this modern age it is better to use innovative teaching materials for better understanding to the students and it should be more practical then explanatory or descriptive. Instructional materials are the main devices to make teaching effective, which are also generally defined as the backbones of teaching learning process. Instructional materials are print and non-print items that are rested to impact information to students in the educational process.

This study has been entitled Attitude and practice of using instructional materials by high school HPE teachers in Kathmandu metropolitan. Community schools were selected in this study. This study was based on the survey descriptive type of research design. The target group of this study was high level HPE teachers. This study was based on primary source of data. The research tools were used attitude scale, questionnaire and observation checklist for data collection. After collecting data, it would be checked and analyzed with SPSS method. After analyzing data it was interpreted in table, pie-chart and other graphical.

5.2 Major Findings

5.2.1 Finding Related to Socio-demographic

a. Highest number of teachers was from 31-40 years aged group, which was 47 percent. Similarly, 21-30 years aged group of respondents were 24 percent,

41-50 years aged group of respondents were 18 percent and above 50 years aged group of respondents were 11 percent respectively.

b. This study found that 58 percent of male respondents and 42 percent were female respondents.
c. In caste/ethnicity group the highest proportion of respondents were Chettri, which were 44 percentage, in the same way Brahmin were 26 percentage, Madhesi were 9 percent, Aadibasi/Janjati were 8 percent, Dalit were 7 percent and Muslims were 6 percent respectively.
d. Likewise in religion group, the highest proportion of respondents was Hindu which were 73 percentage and Buddha were 10 percent, Christian was 9 percent and Muslims were 8 percent.
e. In the case of educational status the highest number of respondents were Master holders, which was 74 percent, 22 percent were Bachelor holders and 4 percent were M.Phil/Ph.D.

5.2.2 Finding Related to Attitude of Teachers Towards Using Instructional Materials

a. This study was found that, the 100% of the teachers showed their positive views using instructional materials in teaching HPE classrooms.

5.2.3 Finding Related to Use of Instructional Materials

a. The study was found that, the 34 percent of respondents were regular used IMs, 18 percent were sometime used and 48 percent of respondents were frequently used instructional materials.
b. It was that the 96 percentage, 91 percentages, 89 percent and 83 percent respondents' responses used teacher made materials, printed, local and electronic materials used respectively.
c. Similarly, the use of printed materials the 100 percent, 85 percent, 77 percent and 73 percent had responded, book, teacher's guide, curriculum and instructional table used respectively. But my observation only 26% teachers were used curriculum.
d. Likewise, the case of using teacher made materials 86 percent, 84 percent, 83 percent, 82 percent, 79 percent and 40 percent had responded poster, picture,

chart, meta card, flatten board and puzzle respectively. But according my class observation most of respondents used picture, which was 57 percent.

e. It was found that 87 percent of respondent used electronic materials and 13 percent of respondent did not use electronic materials in teaching HPE.
f. In the same way, 65 percent of respondents' responses don't have the classroom and 28 percent respondent has the classroom for the use of electronic materials.
g. It found that, the 66 percent, 64 percent, 62 percent, 56 percent, 47 percent, 25 percent, 25 percent and 23 percent had responded used OHP, computer, smart phone, tape recorder, laptop, television, radio and smart board used in teaching HPE respectively. But my class observation only 31% used OHP, 48 percent were used smart phone, 30 percent used computer, 21% used tape recorder, 25% used laptop, 14% were used television, 13 % used radio and only 5% were used smart phone.
h. Researcher found that, the 88 percent, 66 percent, 33 percent and 27 percent respondents' responses local, student made, self- made available in market respectively.
i. This study showed that, the 96% was respondent used seed & food grain, 96 % was used fruits, 85% was used rope, 81% was used vegetable, 81% was used wood and 73% was respondent used soil in local materials. But my observation only some teachers were used local materials.
j. The collection and construction of instructional materials was 98 percentage collected by teachers, 79% by school administration, 68% by students and 42% by donated. The highest proportion of respondents was collect & constructs the materials by teachers.
k. We can concluded that, the 92% of IMs were available by the teachers, 92% of IMs by school, 52% by DEO and 8% were available by other sources. The highest number of materials available by school and teachers.
l. Similarly, 86 percent of respondents said that the available materials are not sufficient and 14 percent of respondents said that the available materials are sufficient for teaching HPE.
m. We can concluded that, the mostly used materials were 70 percentage were low cost materials, 19 percent were no cost materials and 11 percent were expensive materials used in teaching HPE.

n. The financial management of instructional materials. it can concluded that 96 % financial support for the materials was provided by the school, 47 % was provided by teacher, 48 % was provided by the NGO or INGO and 8 % was provided by other sources.

5.2.4 Problem Faced by Teacher Using IMs

a. The main problem in availability of IMs was no more coordination with stakeholder which was 86 %. Similarly another problem was lake of budget which was 82 % and 2 % was other problem.
b. Mainly there were two problems. The first problem was lake of coordination which was about 88 % and second problem was lake of budget which was about 84 percent.
c. It was found that, the lake of training was49 %, spending more time 9%, large number of student was 8 %, lack of skill was 59 % and main problem was lack of materials in school was 84 %.It was concluded that the major problem was lake of materials in school and the problem having lowest percentage was large number of students.
d. It was found that, the percentage of problems in using electronic IMs. Lake of trained teacher was 48 %, lack of electronic materials was 42%, lack of knowledge and skill was 59 % and main problem was lack of classroom was 65 %.
e. The problem of lake of separate classroom was 75 % which was second highest problem. Similarly percentage of lake of availability of IMs was 82 % which was major problem. Out of 100 teacher 23 percent said that not use IMs and the percentage of other problem was 4 percent.
f. We can concluded that, the percentage of lake of supervision and evaluation was 88%, 70 % had no attraction on teaching profession. Similarly the percentage of lake of analysis of the usability of teacher's attitude was 53 % and the percentage of lake of plan was 94 % which occupied highest percentage so was the major problem.
g. It was concluded that only 16 % teachers had sufficient materials to teach HPE whereas 84 % teachers had not sufficient materials to teach HPE.

h. Likewise, Only 12 % respondents said that available materials were sufficient for every lesson but 88 % respondents said that available materials were not sufficient for every lesson while teaching HPE.
i. We can concluded that, 64 % of the students were participated partially and 36 % of the students were participated completely in the use of teaching materials.

5.3 Conclusion

Instructional materials are the tools used in educational lessons, which includes active learning and assessment. Instructional materials in teaching health education give special emphasis in boosting the confidence and enhancing the skill of the participants in making various teaching materials and using them effectively in actual classroom teaching. This study has described the attitude & practice of using instructional materials by high school HPE teachers. The main objective of this study was to identify the attitude & use of IMs in teaching HPE at high school teachers' in Kathmandu metropolitan. There were three types of research tools used in this study. They were attitude scale, questionnaire & observation checklist.

The first objective of this study was to identify attitude of high school HPE teachers towards using instructional materials in class and researcher found that the 100% of the teachers showed their positive views towards using instructional materials in classroom. The second objective was to analyze the situation of using IMs by HPE teachers. According to this objective the researcher can concluded that the 34 percent of teachers' regular used IMs. Similarly, 48 Percent was frequently used & 18 percent of respondent was sometime used instructional materials. Out of hundred teachers 96% of teachers used teacher made materials, 91% of teachers used printed materials, 89% of teachers used local materials & 83% of respondents used electronic materials. But during class observation I found that, most of teaches used daily usage materials. There were only 28% of schools have the classroom for the use of electronic materials. During the selecting IMs, the teacher gives main priority to the local materials. But my observation I found that only some teachers were used local materials. In the same way the highest proportion of respondent was collects and constructs the materials by teachers which were 98 percent. Only 14 percent of respondents said that the available materials are sufficient for teaching HPE. In this

study the teacher said that they were mostly used low cost materials in teaching HPE. The financial management for instructional materials provided by school, teacher, NGO/INGO & other sources.

The third objective was to find out the problem faced by HPE teachers with respect to using instructional materials, concluded that, there were different kinds of problems related to the IMs such as using IMs related problems, collecting instructional materials related problems, lack of available materials, problem in manage & plan of instructional materials.

5.4 Recommendations

Recommendations are the backbone of research work to initiate the problem to launch in the study area. The analysis of the data obtained from the field study and the conclusions, the researcher suggests the following recommendations for the better improvement to teach HPE by using animated and interactive instructional materials in HPE teaching at high level.

5.4.1 Recommendation for Improvement

On the basis of the study the following recommendations are suggested in the practice.

a. Teacher should use new innovation & electronic materials in the classroom so that students can learn in an effective way.
b. It would be better using instructional materials while teaching HPE.
c. This study found that the lack of availability of IMs, so the school should manage the enough materials.
d. There were lack of separate classroom to use & manage IMs, so the teacher, school & administrations should manage the separate classroom for effective teaching & learning.
e. Teachers can carry out action research for better learning and teaching of HPE according to the nature of students and focus on the instructional materials & content delivery.

f. Teacher should to increase the participation of students in teaching learning process.

5.4.2 Local Policy Related Recommendations

a. High level HPE teachers should be given different types of short-term & practical based teaching training by the concerned authority regarding the use of different IMs in the classroom. So, that they can make the effective use of these materials.
b. Policy makers should focus on the low cost or no cost IMs such as tape recorder textbook/reference books and their use in the classroom.
c. The local government should increase the number of technician in the field of ICT based education implementation. In addition, curriculum planners should encourage the use of electronic materials by including them in the educational syllabus of all levels of education.
d. The book preparing committee or textbook writers should prepare a list of IMs in the appendix box for teaching the subject concerned, so the teachers will know what types of materials are necessary to be used in teaching HPE.

5.4.3 Recommendation for Further Study

After analyzing finding and conclusion, the following possibilities for further studies and recommendations for further studies have been presented:

a. Able to check the knowledge on modern instructional technology with secondary level teacher who are teaching HPE.
b. Comparison between private and community school in connection with the use of instructional materials.

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