

A Survey on

***Utility of Excel and power point in
Government Upper Primary Schools of
Nainital district***

Submitted by

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Various studies have corroborated that the use of technology in the classroom has made the teaching-learning process more effective, joyful and receptive for the students. It has paved the paths of creativity and exploration for scholars. Looking at the importance of technology in the field of Education, an effort was done in this direction to study the Utility of Excel and Power Point in Government Upper Primary Schools of Nainital district, which seems to have significant social & academic relevance as well as national importance.

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PREFACE

Education in different era has been defined in different ways according to the need of society of that time. From the various definitions of education we can conclude that Education is a continuous and lifelong process which aims at development of desirable habits, skills and attitudes to make an individual a good citizen, who can best serve his nation for its upliftment and wellbeing. In the process of education we try to shape the behaviour of young children in accordance with aims and goals of national life. Briefly we can define education as shaping of behaviour or modification of behaviour of an Individual for adequate adjustment in the society, so as to develop him as an asset for society.

When it comes on the education of children it becomes utmost important that they get it in a joyful manner so that it didn't become a burden on them. Several researches has revealed that in making education an enjoyable, interesting and long lasting activity the role of technology can't be denied. Today technology has evolved in each and every sphere of life and definitely education is one of it. Several technological applications have made education easy and loveable activity. Now a day's not only teachers but students and others related to the teaching – learning process are highly using technology in their day to day teaching and learning. There are several benefits of using technology in the field of education; besides making teaching an easy and enjoyable act it has also been helpful in resolving the barriers of access, quality and individualized pace of learning.

Looking at the aforesaid advantages of technological interventions in the field of education, it has become vital to know the existing status of technological use in our schools and the attitude of teachers regarding its utility for the purpose of teaching & learning. The present study is an effort in this direction as it deals to enquire about the utility of two technological applications viz., Power point and Excel from the suite of Microsoft office, among the teachers of Government Upper Primary Schools of district Nainital in Uttarakhand. The vitality of the study lies in taking required measures to fulfil the lacunas in the above mentioned areas so that the desired goals are met.

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PROBLEM: NEED AND SIGNIFICANCE

INTRODUCTION

In the past few years science and technology has rapidly influenced the field of education. The development, application and evaluation of new techniques and aids in the field of education have given birth to the concept of Education Technology. Among the various sophisticated techniques and aids, computers and their various applications has not only saved a lot of time and effort but also has brought remarkable improvement in the efficiency of teaching-learning process.

In **1955** the first computer **HEC-2M**, which was imported from **U.K.** was installed at **Indian Statistical Institute, Calcutta**. In course of time, the first indigenously designed computer system was installed at Jadavpur University, Calcutta in 1964. During the **Asian games (1982)** and **Non-Alignment meet (1983)** held in New Delhi computers were successfully employed. Since then computers have been installed at many places in our country. A number of regional computer centres have also been established in various cities.

At the academic level, a pilot project called computer literacy and studies in schools (**CLASS**) launched by **N.C.E.R.T. in June, 1984** was the first step in promoting the use of micro computers in Indian secondary schools. The objectives of the project were:-

1. That the student should be aware and unafraid of how computers work.
2. The teachers and students should have knowledge of the role of computers in contemporary society and;
3. They should know its application potential and use in Instruction.

In the first year of this project (1984-85) about 248 Government and Semi- Government schools of urban areas were selected. Besides this 42 resource centres were also selected to train schools teachers as well as to provide logistic support to these 248 schools. By 1987, the resource centres were increased to 50, whereas experimental schools up to 1250.

During 1984-87 about 3200 school teachers were provided training for 3-4 week at the selected resource centres (Shah, 1989). Since then, the micro

computer revolution has been rapidly gaining impetus in Indian schools through the **CLASS Project**.

At the Government level computerization in India was promoted through its “**National Policy on Education (N.P.E.) 1986 & Programme of Action (P.O.A.) 1992**”. The Policy laid emphasis on the role of computers in enhancing the efficiency of the teaching- learning processes in making children more creative and in providing them with an Individualised learning environment.

Further the Government on time to time has been launching its various programmes to promote digitalisation in the field of education like **I.C.T @ school scheme 2004 & its revised version with I.C.T award for teachers in 2010**. The **I.C.T. policy** was given by the Government in the year **2012** in which the importance and role of digitalisation in modern scenario was discussed in detail with its implementation process. National repository of open educational resources (**N.R.O.E.R.**) & **I.C.T curriculum** in **2013** were steps taken to increase the use and availability of digital resources as well as to incorporate it in the syllabus to provide it well structured format. In the year **2015** the **Digital India campaign** was launched by the Honourable Prime minister of India shri Narendra Damodar Das Modi ji to maximise the use of digitalization in every sphere of our life and programmes like, **e – pathshala & e - P.G. Pathshala** were launched to promote open online learning for teachers, students and various stakeholders in the field of teaching and learning. By the year **2017** the Government of India gave several open online learning programmes, courses and platforms like **SWAYAM, MOOCS & SWAYAM PRABHA – DTH Channel** to promote digital form of learning to make it in the reach of each and every person who desired to learn according to his pace, time and need.

NEED AND ORIGIN OF THE STUDY

At present there are many centres in India where computers have been installed for some specific purposes such as data processing for research, decision making and maintaining student’s records (Agarwal 1994). Computers are now a days being increasingly used in almost every sector of life as in Banking, Railways, Construction, Designing vehicles, Film making and of course very widely in our education system.

The computers play significant role in the teaching learning process especially at the elementary level. It has been seen that since the inception of technological innovations the Government has been running various technology related projects like CLASS, EDUSAT & ICT related programmes and policies in the field of education to make our teachers and students get maximum benefit of it and also get well acquainted with its knowledge and use.

In spite of this it is really disappointing that still our teachers and students are lagging far behind in its use. The need of the hour is to trace out the exact reasons lying behind it. It is not that the efforts have not been done in this direction, we have seen that several research studies have been done to know the status of various hardware educational technologies in our teaching institutions from primary to higher level and also to see the attitude of our teachers regarding its use in their day to day teaching learning process. We have also done similar study at the level of our D.I.E.T. last year to know the status, use and attitude of teachers regarding use of various hardware educational technologies and found that there were a lot of physical, technological, financial and attitudinal factors lying behind the low use of these technologies. These types of studies help us and the stakeholders to improve their efforts in this direction, so that the maximum utilisation of technological resources may get possible. We can understand it by an example that in many teacher education institutes where we shape our future teachers, it is seen that technology is only discussed as theory at the B.Ed. level and is extended with some more chapters at the M.Ed. level, but it is hardly used in a practical manner. This results in the form a teacher who is a good theoretician but a poor practitioner of any technology.

Operation of new technologies not only demands the knowledge of operation of hardware, but also requires planning and managerial skills in the use of devices i.e mapping of resources, allotment of tasks as per the abilities and requirements of the learner, monitoring of individual progress and so on. Until and unless the acquisition of these skills are not focused adequately in the teacher training courses it will simply end up as a waste of precious national resource.

Looking at the importance of acquisition of practical skills to operate various technologies by the teachers, at the D.I.E.T. level the prime focus of in service teacher computer training programme is also to prepare the trainee teacher not only with the knowledge of technology but also to get well

equipped to use these technologies and software in their day to day classroom teachings.

The present study is an effort to see the impact of these computer trainings on the teachers of various Government upper primary schools, working in different blocks of Nainital district. The study especially focuses on the utility of two Microsoft office applications viz., power point and excel and the attitude of teachers regarding its utility in their actual classrooms.

STATEMENT OF THE PROBLEM

“Utility of Excel and power point in Government Upper Primary Schools of Nainital district.”

OPERATIONAL DEFINITION OF THE TECHNICAL TERMS

The operational definitions of the variables undertaken in the study are given below:-

UTILITY:

According to dictionary meaning Utility means “The usefulness of something, especially in a practical way” or “ability to satisfy a particular need”.

I.T. meaning reveals that “Utility is a computer program that is used to do a particular task”. In the present study Utility is considered mainly with Microsoft Power point and Excel applications and their ability to satisfy the teaching-learning needs of teachers and students in the field of education.

EXCEL:

Microsoft Excel is a spreadsheet program that is used to record and analyse numerical data. Think of a spreadsheet as a collection of columns and rows that form a table. A software program created by Microsoft that uses spreadsheets to organize numbers and data with formulas and functions. Excel analysis is ubiquitous around the world and used by businesses of all sizes to perform financial analysis. The main uses of Excel include:

- Data entry
- Data management
- Accounting

- Financial analysis
- Charting and graphing
- Programming
- Time management
- Task management
- Financial modeling
- Customer relationship management (CRM)
- Almost anything that needs to be organized.

POWER POINT (P.PT.):

PowerPoint is a presentation program developed by Microsoft. It is included in the standard Office suite along with Microsoft Word and Excel. The software allows users to create anything from basic slide shows to complex presentations.

PowerPoint is often used to create business presentations, but can also be used for educational or informal purposes. The presentations are comprised of slides, which may contain text, images, and other media, such as audio clips and movies. Sound effects and animated transitions can also be included to add extra appeal to the presentation. PowerPoint presentations are often displayed using a projector.

OBJECTIVES OF STUDY

The proposed study aims at the following objectives:

- (i) To identify the Utility of Excel and Power-point in Government upper primary schools of district Nainital of Uttarakhand.
- (ii) To identify the attitude of teachers belonging to Government upper primary schools of district Nainital regarding the Utility and conduciveness of using Power-point and Excel.
- (iii) To explain the advantages and benefits regarding Utility of Power-point and Excel in Government upper primary schools of district Nainital.
- (iv) To investigate the Utility of Power-point and Excel in the participation and learning of the students of Government upper primary schools of district Nainital.
- (v) To give suggestions regarding the appropriate Utility of Power-Point and Excel in Government Upper primary schools of district Nainital.

HYPOTHESIS

1. There exists no significant difference in the attitude of teachers belonging to Government Upper Primary Schools of district Nainital of Uttarakhand regarding their perception on Utility of Power-point and Excel with respect to their sex i.e. Male or Female.
2. There exists no significant difference in the attitude of teachers belonging to Government Upper Primary Schools of district Nainital of Uttarakhand regarding their perception on Utility of Power-point and Excel with respect to their locality i.e. Urban or Rural.
3. Sex wise there exists no significant difference in the attitude of teachers belonging to Government Upper Primary Schools of district Nainital of Uttarakhand regarding their perception on Utility of Power-point and Excel with respect to their locality i.e. Urban or Rural.
4. No significant difference exists in the attitude of overall teachers belonging to Government Upper Primary Schools of district Nainital of Uttarakhand regarding their perception on Utility of Power-point and Excel.

DELIMITATION OF THE STUDY:

The proposed study will be delimited only to the Government Upper primary schools of district Nainital of Uttarakhand.

SIGNIFICANCE OF THE STUDY:

Today due to the expansion of Information and communication technology (I.C.T) the information lying worldwide has become easier and accessible to be gathered. So far as education is concerned it is well linked with I.C.T. and it is I.C.T. that has the scope of educational expansion & applicability beyond our expectation. It is clear from several studies that I.C.T initiatives used by the government under its various projects like S.S.A., R.M.S.A. etc has been quite effective and product oriented. Efforts have been done for achieving the goal of Universalisation of elementary education, ensuring universal enrolment & retention and overall qualitative improvement of schools with the infusion and adoption of the vast field of I.C.T.

Under the qualitative improvement of schools and school teachers the government at the initial stage, among its various projects, has launched one of the project named computer assisted learning (C.A.L) programme under which each selected school was provided with four computers and essential infrastructure for running it. In the mean time the teachers of that school were also provided with required computer training to use these computers for sake of improving efficiency in teaching and learning process. Later on under the ICT @ school scheme and various other projects the technological enhancement and trainings related to its applicability were increased. For the proper functioning and implications of these technological trainings it became essential from time to time to monitor these trainings, so thus the required inputs could be given and necessary measures could be taken for its betterment.

The significance of the present study lies in the aforementioned efforts taken by the government to enhance the technological interventions in the field of teaching and learning. As the present study is also an endeavour to know the attitude of Government teachers regarding I.C.T. in the form of getting their opinion on the utility of two computer based Microsoft office program viz., Power point and Excel in the field of teaching and learning.

REVIEW OF RELATED LITERATURE:

Taking into consideration the importance of technological interventions in the field of teaching and learning and their use by teachers and to know the existing situation regarding utility of these technologies at various government teaching institutions, the following research findings may serve as the related literature.

Abdullah, (1995) determined the current status of the utilization of Educational Media and Technology and to investigate to implementation with regard to the frequency of its utilization relative to: (i) Training Instructors' teaching experience, (ii) Training Instructors' prior training in Educational Media, (iii) Training Managers', Instructors' attitude toward the educational media. (iv) the Training Instructors' perception with regard to training field of specialization, availability of media, and classroom physical set-up to and arrangement. Two questionnaires, one for the training Managers and the other for training Instructors, were designed tested and used to collect data from 26 Training Managers and 124 Training Instructors. This study used the

methodology of a descriptive survey. The findings of the study revealed that there has been a low rate of educational media utilization among the Training Instructors of SAUDI. It is clear that Training Instructors are not properly utilizing EMT and they are facing serious problems that limited such utilization.

Bailey, (1990) determined the perceptions of Virginia superintendents about instructional technology and the factors that are perceived by them as facilitating or hindering the implementation of technology. The data indicate that the instructional technologies and the necessary support as advocated by the Virginia Six-year Plan for Technology are highly useful and – in the case of student access to microcomputers, teacher training in technology, and local division funding for technology – essential. The most important factor having a positive impact on the implementation of technology, as indicated by a cumulative 71.6 percent of the respondents, were having trained teachers available and providing an in-service program. Lack of funds was the most frequently (94.9 per cent) indicated factor listed hindering the implementation of technology.

Franklin, (1991) defined the present status of pre-services teacher's attitudes toward selecting, utilizing and rating of instructional media after formal training or after student teaching. An attitude survey acquired the pre-post attitude of students enrolled in a course on the selection and utilization of instructional media and from student teachers. Data was obtained concerning how student teachers rate specific instructional media. Findings of the study showed that undergraduates entering a teacher-training program do not have developed skills in the selection and utilization of instructional media. Often media rated, this study indicates the most frequently used media during student teaching were the personal computer, overhead projector and television. It also concludes that a developed positive attitude toward the selection and utilization of instructional media is related to the positive affect toward the practice of systematic lesson planning by teachers.

Gafoor (1996) aimed to study the availability and utility of material facilities and resources of DIET's and to study the quality of pre-service and inservice training programmes of DIET's for primary school teachers. The study revealed that availability and utility of material facilities and DIET's resources were not satisfactory. A participatory democratic atmosphere was not-existent in a majority of DIET's. The quality of preservice and inservice

programmes of DIET's were also not totally satisfactory and DIET's were basically not competent to carryout action research and experimental works.

Kabli, (1986) explored and identified the major limitations to the utilization of instructional media in the elementary schools in Soudi Arabia. Some of the major findings of this study were: (i) Blackboard, geographic maps, models, and globes, audio tapes, flannel board, and tape recorder were found to be more likely available in elementary schools in AL Medina District. (ii) With respect to the use of instructional media materials, more teachers indicated that instructional photographs, overhead transparencies, 35 mm slides, and audio tapes were more likely to be used when darkroom and local production facilities, meeting rooms and display and storage areas were available (iii) Filmstrip projector, tape recorder, flannel board, magnetic board, 8 mm film projector, 16 mm film projector, and bulletin board were more likely to be used when darkroom, meeting room and display area facilities were available. (iv) There was a significant relationship between the availability of spare parts to repair faulty equipment and the use of instructional models and globes, filmstrip projector, and slide projector.

Golani (1982) in his study entitled "The use of Audio-Visual Aids in the secondary schools of District Thane" found that the teaching aids were essential and useful in developing clear concepts and in stimulating learning, but being expensive, the schools could not afford to purchase them. Sophisticated aids, like tape-recorder, radio, T.V. set and projectors were out of the question in many of the schools as they were exorbitantly costly. However, the use of A/V materials could be increased if teachers were allowed some free time for the location and preparation of requisite materials, because they had to perform many other duties in addition to teaching they did not usually find time. Some schools had projectors but few films and due to non-availability of technicians, the projectors were lying unused.

Jois (1982) in his study of the educational radio users in Karnataka laid emphases to find out the strengths and weaknesses of the educational media and to study the attitude of teachers towards school broadcast. The major findings were that. In all, 65.6 percent of the institutions possessed radio sets and were using them for educational purposes about 3 percent institutions were having radio-sets not in working condition. Reasons for non-utilization were:

- a) The head master was not allowing them to use.
- b) There was no separate time-table for this and

- c) There was lack of accommodation. The use of this medium was helpful to a classroom teacher. Teachers using the educational radio programmes agreed that the knowledge of the pupils had improved as a result of their listening to the radio broadcast.

Kaur (1981) aimed to develop educational materials for the skills of probing, questioning, explaining, and illustrating with examples and to examine the effect of self-educational audio-cassettes on the general teaching competence of teachers. The findings concluded that the self educational audio cassettes were effective for developing different teaching skills and the immediate, pin-pointed and self feed back through audio cassettes was an effective way of improving the performance of teachers in the use of different teaching skills.

Phutela (1980) investigated to determine the extent of utilization of school television (STV) programmes by the school and also to study the factors responsible for under utilization of the programmes. At the same emphasis was also laid to study teacher's attitude towards the school telecasts. The findings concluded that many teachers did not STV programmes useful as they were not different from classroom teaching or were not presented in such a manner as to sustain student's motivation. About 38 percent schools in the sample possessing T.V. sets were utilizing STV programmes. The reasons for not viewing were: T.V. sets being out of order, functions in the schools, exams etc. Most of the teachers from these schools accepted T.V. as a welcome help and agreed to the positive statements like teachers too learn about better methods of teaching.

Jagdish Singh and Shukla (1980) aimed to examine the extent of radio utilization in Delhi schools and to study teachers' attitude towards school broadcasts. The findings revealed that, of the schools having radio sets 14 percent did not utilize the radio programmes. 40 percent of the radio programmes were not related to the syllabus. Non availability of programme chart and lack of awareness of radio programmes were some of the difficulties in the utilization of school programmes.

Jeyachandram (1980) in his experimental study of the efficacy of programmed film strips as a method of teaching found that, programmed learning material (PLM) could be integrated with audio-visual materials

and the teacher had an important role when self-learning techniques were employed. Higher cognitive abilities could be developed through PLM. It was also found that retention of learning was more in the case of programmed film strips with teacher and programmed film strip without teacher in comparison with the conventional method.

Solachi (1991) conducted a study on availability and utilization of education Technology in the higher secondary schools of a district in Tamilnadu. The study revealed that the utilization rate was higher in urban schools as compared to rural schools. Government and aided schools also differed in their utilization rate. The aided schools did a better job. Between boys and girls schools, the boys schools utilized E.T. more. Science teachers as compared to humanities teacher's utilized more of non projected and projected visual aids.

The major objectives of the study ,on use of visual aids by teachers of university of agricultural sciences conducted by Ramachandra (1982)were (i) Evaluating the current use of visual aids by the teacher of a Agricultural University (ii) Identifying the factors governing the use of Visual aids. The major findings of the study revealed that the visual aids use level index values were low in basic science and humanities and were high in other agricultural colleges, veterinary colleges and fisheries colleges. The association between the visual aids use indices and teacher's qualification, experience, training status was significant. Other factors like the number of students per class, training on visual aids, attitude towards visual aids, budget allotment on visual aids, did not have significant association with the visual aids use level.

However, knowledge of visual aids, availability of material resources to develop and use them inside the classroom, administrative encouragement and follow up evaluation were highly significant in their association with visual aid use.

A question that constantly plagues teacher educators and others who work with teachers in service training programmes is whether the training actually produces changes in the classroom behaviour. In a survey questionnaire study conducted by C. Edward streeter (1968) was concerned with the question whether specific media competencies (and which other) can be demonstrated to have a significant positive correlation to actual use of media in the classroom.

The sample used for the study consisted of 436 teachers working in two schools in which equipment, materials and supporting personnel were available to facilitate the teacher's use of a variety of educational media. Questionnaire data provided the basis for media competency scores; a total media frequency of use-score was derived for each teacher. Correlation coefficients were then computed in an attempt to test whether or not a positive relationship existed between this media competency scores and a teacher's quantitative use of media in the classroom. A positive correlation of 0.41 was found between the teachers total media competency and their frequency of use scores.

Ramsey (1961) concluded that the population attitudes towards audio-visual instruction were not influenced by the amounts of audio-visual equipment which their schools owned, as long as that equipment was accessible when it was needed. On the other hand, the population attached great significance to the amount of audio-visual materials their schools owned as well as to the accessibility of those materials.

Grant and White (1970) studied a population of secondary school teachers who had experienced a specific audio-visual education demonstration unit and related various personality characteristics to changes in attitude toward newer media.

Teacher perceptions of environment conditions within schools which influence utilization of educational media were investigated by miller (1970) who concluded that organized audio-visual programs supervised by audio-visual coordinators were related to significantly superior audio-visual educational climates.

Lewis (1970) tested 15 questions in an effort to determine teacher perceptions relative to educational media. Among his findings were conclusions that teachers perceive educational media as being readily available and that they perceive formal training in the area of audio-visual instruction as being necessary.

Ibrahim, (1997) examined the changes in pre-service and in-service teachers attitudes toward computers following the participation in an educational computing class, and explored the factors that contributed to changes in attitudes. Teacher reported that having a home computer, professor's willingness to teach and the current utilization of technology

in the schools at which they work also had influence on their attitude toward computers

Tobias (1966,1968) investigated educational media factors and terminology which threaten teachers and concluded that threats of automation influence teacher attitudes towards educational media.

Finch, Gustilo and Wiersteiner (1970) reported findings indicating that availability of educational resources leads to increased utilization of such media, but that teacher attitudes have little influence upon availability use relationship.

Guba and Snyder (1964) found users of media within their population to possess more favourable attitudes towards newer media than did not users of those media.

Increased utilization of audio-visual material was identified by Eboch (1966) as being related to increased availability of such material.

Godfrey(1965) reporting upon availability of educational media in schools, identified teacher requests as being among the more influential channels for having school authorities provide greater amounts of A/V equipment and materials.

Knowlton and Hawes (1962, 1963) concluded that negative teacher attitudes toward educational media are related to utilization barriers, and that increased utilization of educational media by teachers following their participation in an A/V education course is the result of improved information rather than improved attitudes.

Robin, (1998) in his descriptive study investigated teacher's perceptions of the role, computers play in their workplace performance. Teachers in the study generally perceived computers as having a positive impact on their work. A majority felt they were more professional, more creative, better informed and generally better educators as a result of their computer use. Creating more effective materials and saving time were rated as the most important reasons for using the computer. A majority currently used the computer to create instructional materials, while few used to communicate with colleagues, a use that might potentially ease

the isolation of the profession and foster continuing professional development.

Russel, (1983) experienced the effectiveness of computer literacy training workshop efforts in modifying teacher attitudes toward computers. The experimental design includes four computer literacy workshops that were conducted at a major university in Texas. This study has a two fold purpose. The first is to determine if an increase in computer literacy among teachers is associated with changes in their attitudes toward computers. The second is to determine the kinds of computer literacy experiences among teachers that are associated with the greatest degree of attitudinal change. The major conclusions are that (a) computer literacy workshops can be an important factor in bringing about significant, positive change in both teacher attitudes toward computers and cognitive levels about computers, and (b) workshops that stress computer programming appear to incorporate a favourable environment in which to bring about a change in teacher attitude toward computers.

Loipha, (1992) proposed to create a base of descriptive information about computer applications in the elementary and secondary classrooms of Thailand. The studies revealed the following findings: (i) Teachers viewed computers as having a positive impact on education. They agreed that computers should be integrated into the teaching and learning of any school subject. In order to fully integrate computers into teaching and learning, however, teachers agreed that the curriculum should be revised. (ii) Teachers were interested in many computer-related subjects. Regardless of the application type, teachers were interested in learning how computer could be utilized for instructional purposes.

Phutela (1980) investigated utilization and comprehensibility of school television programme in Delhi at middle and secondary level. The finding revealed that most common problems for not using T.V. were found to be related with poor working conditions of T. V. Sets.

Thus from the corpus of aforesaid studies it can be deduced that though much work have been done at the primary and secondary level teaching institutes, but still there are very less studies done regarding Utility of Excel and Power point in Government Upper Primary Schools .Therefore the present investigation is an effort to fulfil the gap of knowledge in this significant area of Education Technology.

RESEARCH DESIGN:

- (a) **Population:** All the teachers of Government Upper Primary Schools of district Nainital of Uttarakhand will constitute as the population of the present study.
- (b) **Sample and Sampling technique:** In the present study keeping in view the adequacy and representative qualities of the sample, 50 teachers will be selected for the study from the different Government Upper Primary Schools of district Nainital of Uttarakhand.
- (c) **Tools:** To achieve the objectives of the study, the following measurements will be used:-
- (i) Personal data schedule.
 - (ii) Questionnaire on Utility of Excel and power-point in teaching-learning.
- (d) **Statistical treatment:** Analysis of data will be carried out with the help of percentile and other appropriate statistical devices.

ANALYSIS AND INTERPRETATION OF DATA

This part of the study deals with the analysis and interpretation of the collected data obtained to assess the utility of Excel and power point in Government Upper Primary Schools of district Nainital of Uttarakhand and the attitude of teachers teaching out there. For the sake of convenience, data analysis for each aspect has been carried out separately. In the first phase Utility of excel and power point was seen whereas in the second phase the opinion or attitude of teachers was carried out for the study. In the analysis variables like type of schools i.e Rural or Urban, Sex i.e male or female etc were controlled individually to obtain more meaningful conclusions and findings.

Table-01

Scores of Male and Female teachers belonging to Government Upper Primary Schools of district Nainital on different dimensions of Utility regarding Microsoft Power point and Excel

Sr. No.	Dimensions/Statement No.	Male (N=25)		Female (N=25)	
		Score	%	Score	%
1.	Utility of Power point / Statement no. 1, 2, 4	308	82.2%	297	79.2%
2.	Implementation of Power point /Statement no.3, 5, 6	188	50.2%	99	26.4%
3.	Utility of Excel/Statement no.8, 9	153	61.2%	133	53.2%
4.	Implementation of Excel /Statement no. 7, 10, 11, 12	283	56.6%	295	59%

The data shown in Table-01 depicts the Scores of Male and Female teachers belonging to Government Upper Primary Schools of district Nainital on different dimensions of Utility regarding Microsoft Power point and Excel. It is clear from the above data that the male teachers were having better scores on all the dimensions of utility of power point and excel in comparison to their female counterparts. As far as the dimensions of implementation of power point and excel were concerned, the male teachers were found to be having better scores on the implementation of power point and the female teachers on the implementation of excel. It is therefore clear from the scores that the male teachers were having more favourable attitude on the utility of power point and excel in comparison to their female counterparts, whereas on the implementational level the male teachers found power point and the female teachers found excel to be more implicable in their respective classrooms.

Table-02

Graphical representation of Scores of Male and Female teachers belonging to Government Upper Primary Schools of district Nainital on different dimensions of Utility regarding Microsoft Power point and Excel

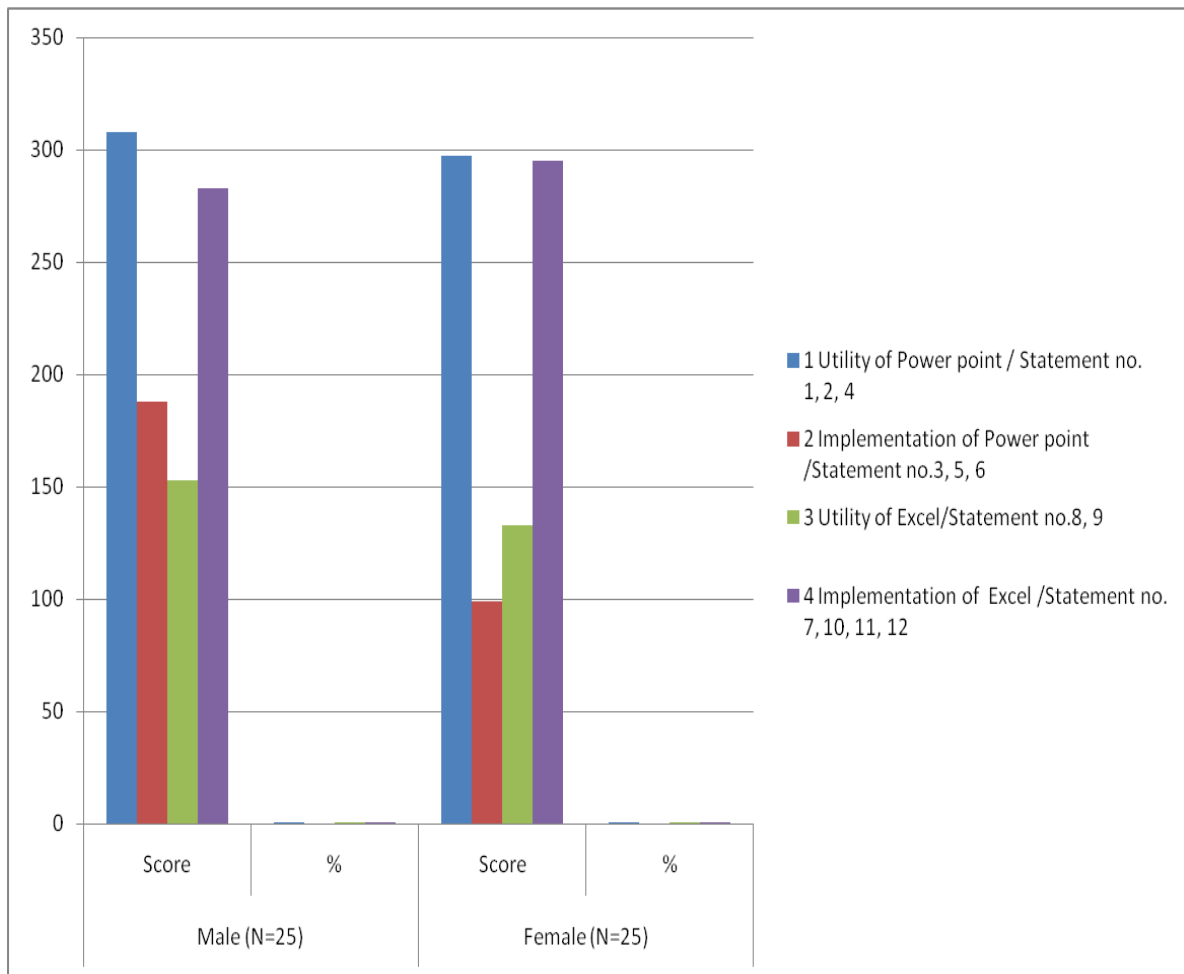


Table-03

Scores of Urban and Rural teachers belonging to Government Upper Primary Schools of district Nainital on different dimensions of Utility regarding Microsoft Power point and Excel

Sr. No.	Dimensions/Statement No.	Urban Teachers (N=9)		Rural Teachers (N=41)	
		Score	%	Score	%
1.	Utility of Power point / Statement no.1, 2, 4	107	79.2%	498	80.9%
2.	Implementation of Power point /Statement no.3, 5, 6	67	49.7%	320	52%
3.	Utility of Excel/Statement no.8, 9	56	63%	233	56.8%
4.	Implementation of Excel /Statement no.7, 10, 11, 12	101	56.1%	457	55.7%

Table-03 reveals the Scores of Urban and Rural teachers belonging to Government Upper Primary Schools of district Nainital on different dimensions of Utility regarding Microsoft Power point and Excel. It is clear from the data that the teachers belonging to the rural areas were having better scores on utility and implementation of power point than their counterparts belonging to the urban areas. Whereas the teachers belonging to the urban areas were found to be having better scores on utility and implementation of excel than their counterparts belonging to the rural areas. This shows that the teachers belonging rural areas carry more favourable attitude towards utility and implementation of power point in comparison to their urban counterparts whereas the teachers belonging to urban areas were found to be having more favourable attitude towards utility and implementation of excel than their counterparts belonging to rural areas.

Table-04

**Graphical representation of Scores of Urban and Rural teachers
belonging to Government Upper Primary Schools of district
Nainital on different dimensions of Utility regarding Microsoft
Power point and Excel**

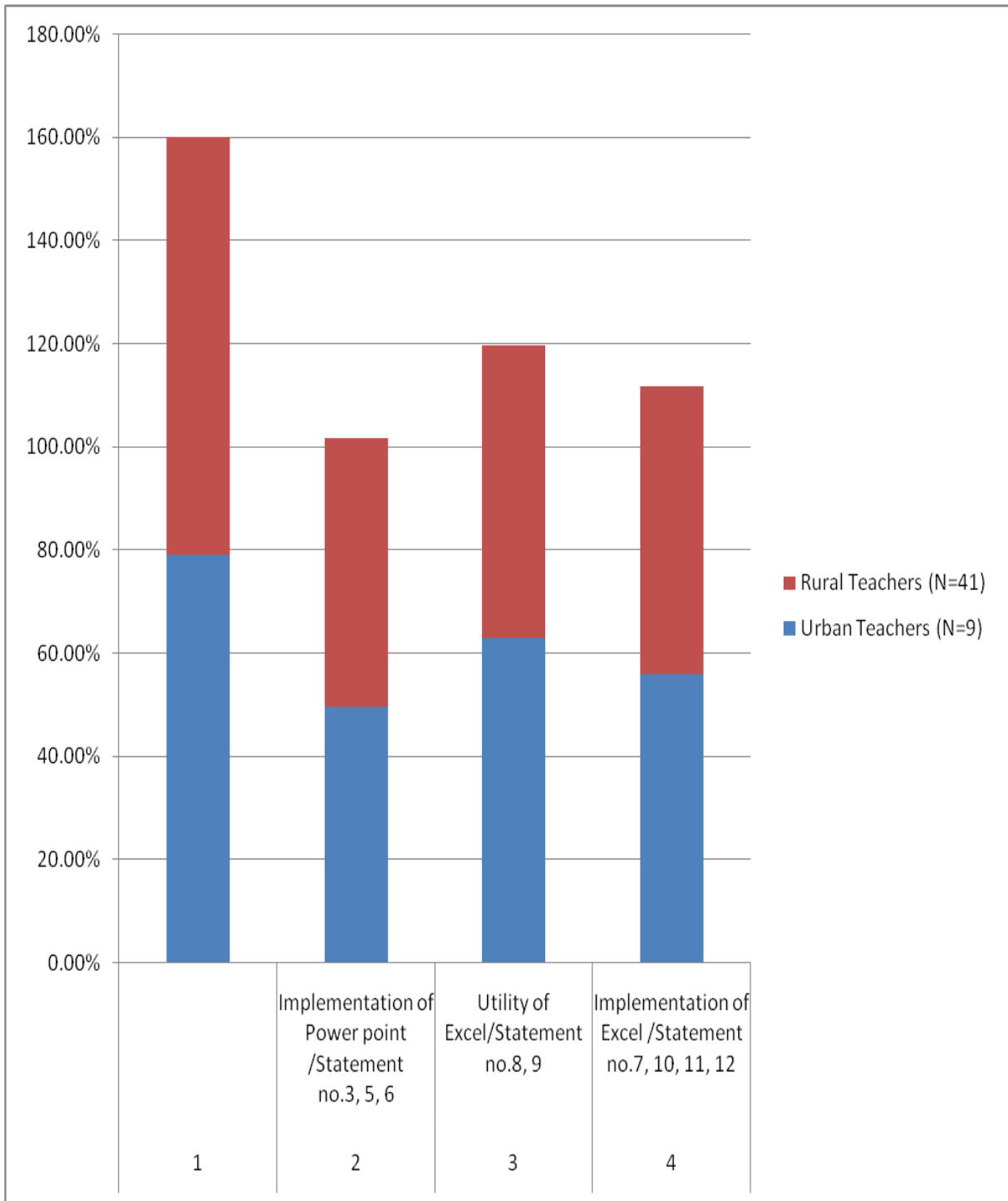


Table-05

Sex wise Scores of Urban and Rural teachers belonging to Government Upper Primary Schools of district Nainital on different dimensions of Utility regarding Microsoft Power point and Excel

Sr. No.	Dimensions/ Statement No.	Urban (N=09)				Rural (N=41)			
		Male (N=04)		Female (05)		Male (N=21)		Female (N=20)	
		Score	%	Score	%	Score	%	Score	%
1.	Utility of Power point / Statement no. 1, 2, 4	46	76.6%	56	74%	262	83%	236	78.7%
2.	Implementation of Power point /Statement no. 3, 5, 6	31	51.6%	36	48%	157	50%	163	54.3%
3.	Utility of Excel /Statement no.8, 9	26	65%	30	60%	127	60.5%	106	53%
4.	Implementation of Excel/ Statement no.7, 10, 11, 12	50	62%	51	51%	233	55.4%	244	61%

The data reflected in Table-05 shows the Sex wise Scores of Urban and Rural teachers belonging to Government Upper Primary Schools of district Nainital on different dimensions of Utility regarding Microsoft Power point and Excel. It is clear from the perusal of the table that the urban male teachers were having better scores in all the dimensions of utility and implementation of power point and excel in comparison to their female counterparts. Whereas the teachers belonging to the rural areas show that the male teachers were having better scores in the dimensions of utility of power point and excel but were lagging far behind in the dimensions of implementation of power point and excel in comparison to their female counterparts. It can therefore be said that the urban male teachers possess a more favourable attitude towards the utility and implication of power point and excel in their classrooms in comparison to their female counterparts whereas when considered in rural areas the attitude of male teachers was found more favourable only in the dimensions of utility of power point and excel than their female counterparts but at the implementational level the female teachers of rural areas were having more favourable attitude than their male counterparts .

Table-06

Sr.No.	S.A.	A	Page 27 of 19	D	S.D.
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1.	15 30%	28 56%	07 14%	-	-
2.	09 18%	35 75%	04 08%	02 04%	-
3.	-	03 06%	09 18%	28 56%	10 20%
4.	09 18%	28 56%	13 26%	-	-
5.	01 02%	10 20%	08 16%	23 46%	08 16%
6.	07 14%	11 22%	21 42%	11 22%	- -
7.	-	12 24%	14 28%	18 36%	06 12%
8.	-	15 30%	12 24%	21 42%	02 04%
9.	05 10%	11 22%	14 28%	19 38%	01 02%
10.	10 20%	31 62%	06 12%	03 06%	- -
11.	-	06 12%	11 22%	31 62%	02 04%
12.	01 02%	10 20%	10 20%	24 48%	05 10%

Overall Score on likert Scale Questionnaire regarding Utility of Power point and Excel by teachers belonging to various Government Upper Primary School of District Nainital (N=50)

The perusal of Table-06 reveals the Overall Score on likert Scale Questionnaire regarding Utility of Power point and Excel by teachers belonging to various Government Upper Primary School of District Nainital. It is clear from the study of the table that the teachers' perception was found to be high on the positive statements (1, 2, 4, 6, 10 & 12) and low on the negative statements (3, 5, 7,8 9 &11) regarding utility and implementation of power point and excel. As far as statement no.6 & 12 were concerned they dealt with the perception of teachers regarding practically applying power point and excel by them in their classrooms, where on statement no.6, regarding preferring to teach through power point, 42% teachers out of the total sampled teachers were found to be undecided and on statement no.12, 48% teachers out of the total sampled teachers disagreed regarding using excel for maintaining their record of marks and preparing annual report cards. This infers the lack of skill among the

teachers regarding using these software programmes by them in their respective classrooms.

SUMMARY OF FINDINGS, EDUCATIONAL IMPLICATIONS AND SUGGESTIONS FOR FUTURE RESEARCHES

In this study an attempt was made to study the perception of teachers belonging to Government Upper Primary Schools of Nainital district regarding Utility of Microsoft power point and Excel. To fulfil this purpose data from the teachers was collected with the help of various data collecting tools. The main data collecting tools were (i) Personal data schedule and (ii) Questionnaire on Utility of Excel and power-point in teaching-learning. The data obtained from these tools was analysed with the help of appropriate statistical techniques.

The present section deals with the findings got through the application of these tools and their educational implications. Further it is also emphasised to draw suggestions for the future researches in this field.

MAJOR FINDINGS

1. The first null hypothesis that there exists no significant difference in the attitude of teachers belonging to Government Upper Primary Schools of district Nainital of Uttarakhand regarding their perception on Utility of Power-point and Excel with respect to their sex i.e. Male or Female is totally rejected. The data presented in Table-01 clearly reveals that the male teachers were having better scores on all the dimensions of utility of power point and excel in comparison to their female counterparts. As far as the dimensions of implementation of power point and excel were concerned, the male teachers were found to be having better scores on the implementation of power point and the female teachers on the implementation of excel. It is therefore clear from the scores that the male teachers were having more favourable attitude on the utility of power point and excel in comparison to their female counterparts, whereas on the implementational level the male teachers found power point and the female teachers found excel to be more implicable in their respective classrooms.

2. The second null hypothesis that there exists no significant difference in the attitude of teachers belonging to Government Upper Primary Schools of district Nainital of Uttarakhand regarding their perception on Utility of Power-point and Excel with respect to their locality i.e. Urban or Rural is also rejected. The data shown on Table-03 clearly depicts that the teachers belonging to the rural areas were having better scores on utility and implementation of power point than their counterparts belonging to the urban areas. Whereas the teachers belonging to the urban areas were found to be having better scores on utility and implementation of excel than their counterparts belonging to the rural areas. This shows that the teachers belonging rural areas carry more favourable attitude towards utility and implementation of power point in comparison to their urban counterparts whereas the teachers belonging to urban areas were found to be having more favourable attitude towards utility and implementation of excel than their counterparts belonging to rural areas.

3. The third null hypothesis that sex wise there exists no significant difference in the attitude of teachers belonging to Government Upper Primary Schools of district Nainital of Uttarakhand regarding their perception on Utility of Power-point and Excel with respect to their locality i.e. Urban or Rural is also rejected. The data revealed in Table-05 clearly shows that the urban male teachers were having better scores in all the dimensions of utility and implementation of power point and excel in comparison to their female counterparts. Whereas the teachers belonging to the rural areas show that the male teachers were having better scores in the dimensions of utility of power point and excel but were lagging far behind in the dimensions of implementation of power point and excel in comparison to their female counterparts. It can therefore be said that the urban male teachers possess a more favourable attitude towards the utility and implication of power point and excel in their classrooms in comparison to their female counterparts whereas when considered in rural areas the attitude of male teachers was found more favourable only in the dimensions of utility of power point and excel than their female counterparts but at the implementational level the female teachers of rural areas were having more favourable attitude than their male counterparts.

4. The fourth null hypothesis that no significant difference exists in the attitude of overall teachers belonging to Government Upper Primary Schools of district Nainital of Uttarakhand regarding their perception on Utility of Power-point and Excel is also rejected. The data presented in Table-06 shows that the

teachers' perception was found to be high on the positive statements (1, 2, 4, 6, 10 & 12) and low on the negative statements (3, 5, 7,8 9 &11) regarding utility of power point and excel. As far as statement no.6 & 12 were concerned they dealt with the perception of teachers regarding practically applying power point and excel by them in their classrooms, where on statement no.6, regarding preferring to teach through power point, 42% teachers out of the total sampled teachers were found to be undecided and on statement no.12, 48% teachers out of the total sampled teachers disagreed regarding using excel for maintaining their record of marks and preparing annual report cards. This infers the lack of skill among the teachers regarding using these software programmes by them in their respective classrooms. From the above data we can easily interpret that the teachers badly requires training on workshop mode instead of theoretical mode.

EDUCATIONAL IMPLICATIONS OF THE STUDY

The present study was conducted to know the attitude or perception of teachers of Government Upper Primary Schools of Nainital district in Uttarakhand regarding Utility of Microsoft power point and Excel in the process of teaching and learning. It was found that the perception of teachers varied a lot according to their sex and area of service. Further it was also tried to find out the reasons behind their varied perceptions. Therefore on the basis of the result obtained from the present study, following recommendations and educational implications can be made:-

1. It was found from the analysis of data that statement no.06 & 12 of the questionnaire were which dealt with the perception of teachers regarding practically applying power point and excel by them in their classrooms, where on statement no.6, regarding preferring to teach through power point, 42% teachers out of the total sampled teachers were found to be undecided and on statement no.12, 48% teachers out of the total sampled teachers disagreed regarding using excel for maintaining their record of marks and preparing annual report cards. This clearly infers the lack of skill among the teachers regarding using these software programmes by them in their respective classrooms and day to day activities. From the above data we can easily interpret that the teachers badly requires training on workshop mode instead of theoretical mode. Therefore it is recommended to make policies and arrangements in such a manner that the teacher should get maximum workshop based and skill based trainings to use these types of technologies.

2. It was found that the male teachers were having better scores on all the dimensions of utility of power point and excel in comparison to their female counterparts. It infers that the male teachers were having more favourable attitude on the utility of power point and excel in comparison to their female counterparts; this may be due to more outer exposure to trainings and workshops than to their female counterparts. It is therefore recommended to organise more skill based workshops for the female teachers on the comfort of their timings and place of training as they have to bear both the load of official as well as family related issues.
3. It was observed that the teachers belonging to different areas viz., urban and rural were having different perceptions regarding utility of power point and excel. It is a matter of study that why such type of differences are there in their perceptions and to eradicate this, there could be a possibility to have the joint training sessions where it should be taken in consideration that the teachers from both the areas could be called together for the trainings and workshops.
4. It was also seen that even having the same location there was sex wise difference found in the perception of male and female teachers regarding the utility of technologies. The urban male teachers were having better scores in all the dimensions of utility and implementation of power point and excel in comparison to their female counterparts. Whereas the teachers belonging to the rural areas showed that the male teachers were having better scores in the dimensions of utility of power point and excel but were lagging far behind in the dimensions of implementation of power point and excel in comparison to their female counterparts. It can therefore be said that the urban male teachers possess a more favourable attitude towards the utility and implication of power point and excel in their classrooms in comparison to their female counterparts whereas when considered in rural areas the attitude of male teachers was found more favourable only in the dimensions of utility of power point and excel than their female counterparts but at the implementational level the female teachers of rural areas were having more favourable attitude than their male counterparts. It must be seen that

what factors lie behind such type of sex wise comparison and necessary arrangements should be taken to counter the problem.

Overall it can be concluded that if proper arrangements of workshop mode trainings could be done, the gap of sex, area and other factors can be minimised and the perception and attitude of teachers can be uplifted regarding the utility of such type of technologies. It is also concluded that proper availability of instruments and physical facilities like labs and availability of electricity, trained staff and technical assistance also play a vital role in the perception of teachers regarding utility of such type of software technologies. Therefore the government, eminent educators and policy makers should keep an eye on these suggested facts for bringing improvement in the perception of teachers and thus bringing quality and efficiency in the teaching-learning process.

SUGGESTIONS FOR FUTURE RESEARCHES

No research work is complete in itself because in between the study, several times the researcher experiences some new ideas and methodologies to be implemented in his study but due to the inability to change set pattern he feels himself unable to do so. For this he can give suggestions for future researches to be conducted on those lines. As the present study was carried out over the government teachers of district Nainital of Uttarakhand to investigate their perceptions regarding utility of software programmes like power point and excel. In the same line it will be useful to conduct further researches on the following pattern.

1. Similar type of researches to access the perceptions of teachers regarding utility of software programmes like power point and excel can be carried out on broader scale/regions, with much larger sample to increase the comprehensibility of the study.
2. This study is limited up to the government schools. It can be done on other teaching learning institutes like HTC, BTC and other Special School training Centres.
3. Further more studies can be done on some other vocational and professional training institutes with more or less variables on the same pattern.

4. The problem can be studied through better designed experiments using sophisticated plan experiments. As it was an explorative study and data were analyzed with the help of percentage, the later researches can be conducted by using chi-square, t-test and factorial design in which an account of interaction effect of several variables can be studied. This will lead to more meaningful and conclusive findings.
5. A comprehensive study can also be conducted to assess the attitude of parents, students, educationists, policy planners and employers towards different aspects of other hardware educational technologies.

Finally it is hoped that the study may generate more useful follow up work and further research in this area. However, there is not an exhaustive list of research projects possible in this field only those topics have been suggested which are the direct outcomes of the present investigation.



APPENDIX

QUESTIONNAIRE REGARDING UTILITY OF EXCEL AND POWER POINT IN TEACHING–LEARNING PROCESS

Sr. No. ()

Code No. ()

Please mark the sign of tick (√) in the bracket relevant to the information related to you.

1. Name of school –
2. Name of Block –
3. Location - (a) Urban () (b) Rural ()
4. Name of the teacher -
(If don't want to disclose then leave vacant)
5. Post-
6. Sex- (a) Male () (b) Female ()
7. Education Qualification-
8. Teaching subject- (a) Science () (b) Humanities () (c) Language ()
9. Teaching Experience in years-
10. Age in years-

Directions

The present Questionnaire consists of information regarding use of excel and power point for teaching. It is expected to provide the correct response in concern to you & your School/Institution. Please fill the Questionnaire carefully by marking the sign of tick (√) in the bracket relevant to the information related to you, providing response on each and every statement is compulsory. Information provided by you will be kept confidential and will only be used for research purpose. We are highly thankful to you for your kind co-operation.

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QUESTIONNAIRE REGARDING UTILITY OF EXCEL AND POWER POINT IN TEACHING - LEARNING PROCESS

S. No.	Statements	*S.A.	A	U	D	S.D.
1	Teaching content with the help of power point make it interesting.					
2	Effect of teaching through power point presentation is long lasting.					
3	It requires tough skill to prepare a power point presentation.					
4	Use of power point presentation helps to revise the key points during the teaching of content.					
5	Use of power point presentation in class teaching is a long and time taking process.					
6	I usually prefer to teach through power point presentation.					
7	Acquiring skill to use excel is a very tough task.					
8	There is no use of Excel in the process of teaching and learning.					
9	Excel can be used in the teaching of only some selected subjects.					
10	It is easy to maintain the record of marks in Excel sheet.					
11	Keeping record in ledger-folio is better than using Excel for it.					
12	I use Excel to maintain the record of marks and prepare the Annual result.					

* S.A. - Strongly Agree

A- Agree

U- Undecided

D- Disagree

S.D.- Strongly Disagree

REFERENCES:

- Abdullah, M., "Analysis of the utilization of educational media and technology in Saudi Arabian training programs", Ed. D., Boston University, 285p., 1995.
- Bailey, T.D., "The superintendent's perception of the benefit of instructional technology in Virginia school divisions", Ed.D., University of Virginia, 1988.
- C.Edward Streeter,Extracted from administering education media: Educational Technology and library services,p.p.347.
- Eboch,S"Implementation of research strategies and tactics for demonstration, Ohio state University,Columbus, Ohio,1966.
- Finch, C., Gustilo, T., and Wiersteiner, "Educational resources for vocational-technical education: teacher attitude, resource availability and resources utilization."Pennsylvania state University, University Park, 1970.
- Gafoor A., "A critical study of the functioning and work efficiency of the District Institute of Education and Training", Ph.D., Education, University of Calicut, 1996
- Godfrey, E, Audio-visual media in the public schools, 1961-64. Washington, D.C.: Bureau of Social Science Research, 1965.
- Golani, T.P.: The use of audio-visual aids in the secondary schools of district thane Ph.D. Edu., Poona Univ., 1982.
- Grant, A and White, F.Ä study of the personality characteristics of the acceptor and rejector of the newer educational media among secondary teachers of Wisconsin."Stanford, Calif: ERIC Research Abstract for AECT Convention, 1970.
- Guba, E., and Snyder, C."Educational television and the classroom teacher"Ohio state University, Columbus, Ohio, 1964.
- Ibrahim, M. B., "Attitudes toward computers among teachers: Relationship with field dependence field independence and computer experience", Ph.D., Ohio University, 1997.

- Jagdish singh and Shukla, S. A case study of school broadcasts in Delhi, Centre for educational technology, NCERT, New Delhi, 1980.
- Jeyachandran, J. An experimental study of the efficacy of programmed filmstrips as a method of teaching history in the secondary schools, Ph.D.Edu.,MSU,1980.
- Jois, S. A study of the educational radio users in Karnataka(A case study of School broadcast in Karnataka) Educational Technology Cell, Deptt. Of State Educational Research and Training, Bangalore, 1982.
- Kabli, T.H., "Selected factors influencing the use of instructional media by elementary school male teachers in Al-Medina district in Saudi Arabia", Ph.D., Michigan State University, 210p., 1986.
- Kaur, R. An inquiry into the effectiveness of self educational audio cassettes in developing teaching skills among student teachers in a three phased study, Ph.D.Edu.,Pan U.,1981.
- Knowlton,J."Studies of patterns in influence in the school situation as they affect the use of audio-visual materials".Indiana University, Bloomington, Ind., 1963.
- Knowlton,J., and Hawes, E. "Attitude: Helpful predictor of audio-visual usage?"AV Communication Review, 1962, 10(3), 147-157.
- Lewis,E."A study to determine teacher perceptions in relation to educational media"Standfor, Calif : ERIC Research Abstract for AECT Convention,1970.
- Loipha, S., "Teachers' perceptions of computer use in elementary and secondary classrooms in Thailand", Ph. D., University of North Texas, 192p., 1992.
- Miller,P."The relationship of teacher perceptions of a schools audiovisual climate to the organizational structure of its media programme"Stanford, Calif ERIC Research Abstract for AECT Convention, 1970.

- Phutela, R.L. A study into utilization and comprehensibility of school television programmes in Delhi, Centre for Education Technology, NCERT, New Delhi, 1980.
- Ramachandra, K.T. A study on use of audio visual aids by teacher of university of agricultural sciences, Bangalore, Ph.D. Edu. (Agr.) Sc.U., Bangalore, 1982.
- Russel, Jack P., Modifying attitudes of public school teachers toward computers and their use in the classroom through computer literacy workshops“, Ph. D., North Texas State University, 144p., 1983.
- Solachi, T., “A study of the availability and Utilization of educational technology in higher secondary schools in Pasumpon Thevar Thirumagan District”, M. Phil., Education, Alagappa University, 1991.
- Munger, P., Myers, R., and Brown, D. “Guidance and the persistence of attitudes” Personnel and Guidance Journal, 1963, 41, 415-419.
- Tobias, S. “Dimensions of teacher’s attitudes toward educational media”. American Educational Research Journal, 1968, 5(1), 91-98.
- Tobias, S. “Lack of knowledge and fear of automation as factors in teacher’s attitudes toward programmed instruction and other media.” AV Communication Review, 1966, 14, 99-109.