



# Analyzing Teachers' Attitude towards Integrating Technology in Teaching and Learning

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**Author's contribution**

*The sole author designed, analyzed, interpreted and prepared the manuscript.*

**Article Information**

DOI: 10.9734/AJESS/2024/v50i41333

**Open Peer Review History:**

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/109799>

**Short Research Article**

**Received: 14/12/2023**

**Accepted: 19/02/2024**

**Published: 15/03/2024**

## ABSTRACT

An attempt has been made to investigate the technology acceptance in teaching in relation to attitude of school teachers'. The focus of the research is to-evaluate the school teachers' attitude towards technology acceptance in teaching; find the difference in female and male school teachers' attitude towards technology acceptance in teaching. Method used for data collection was descriptive survey. A sample of three hundred and four school teachers (comprising of 151 female and 153 male school teachers) was drawn from eighteen government school (six districts namely Samdrup Jongkhar, Pema Gatshel, Tashi Gang, Tashi Yangtse, Mongar and Lhuntse of Bhutan) of Eastern Bhutan through convenience sampling. The objective and hypotheses of the study have been tested by using mean, standard deviation, frequencies, percentages and z'-test. Results revealed that 1) majority of school teachers have positive (highly favorable and favorable) attitude towards the technology acceptance in teaching; and 2) Attitude of female and male school teachers towards technology acceptance in teaching do not differ significantly from each other. Female and male school teachers have favorable attitude, to equal extent or degree, towards the technology acceptance in teaching.

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*Keywords: Attitude; school teachers'; technology; teaching.*

## 1. INTRODUCTION

Teachers' technology acceptance in teaching can be defined as teachers' readiness to utilize technology during instruction process it is intended to carry out.

According to Ertmer PA. [1]. Teacher pedagogical beliefs: The final frontier in our quest for technology integration? Educational Technology Research and Development, 53(4), 25-39. This article discusses the importance of teachers' pedagogical beliefs in shaping their attitudes towards technology integration and highlights the need for further research in this area. The perspectives and beliefs of people generally and family specifically of the pupil influence by the way teaching and learning is organized. These perspectives and beliefs vary from culture to culture. If teaching and learning strategy are adapted, from one social setup into another, without taking into considerations the requirement of local conditions, then definitely those teaching and learning strategies are not successful in that social setup.

In present times, numbers of different types of technology gadgets like smart boards, LCD projectors, tablets, computers etc. are available which can be used in teaching learning process. Teachers can use these technology gadgets for giving instructions to students during teaching inside and outside classroom. These technology gadgets make students' learning more interesting, effective and enjoyable.

As mentioned by Ottenbreit-Leftwich, AT et al. [2]. Teacher value beliefs associated with using technology: Addressing professional and student needs. *Computers & Education*, 55(3), 1321-1335. This study explores teachers' value beliefs associated with technology use and emphasizes the importance of addressing both professional and student needs to promote positive attitudes towards technology integration.

The teaching profession faces speedily dynamic demands that need a replacement, broader and a lot of subtle set of competencies than before. Technological innovation and understanding about technology life cycle is foster by an efficient technological leader. Innovation in technological and understands about technology provide us the vision for devising effective ways teaching and learning. ICT tools help the twenty-first-century learners

in acquiring the skills like digital ability, personal and social responsibility, vital thinking etc. in the same way as collaboration and communication.

## 2. REVIEWS OF RELATED LITERATURE

Aypay, Çelik, Aypay and Sever [3] predicts the level of technology acceptance and explored the association among various factors which influenced acceptance of pre-service teachers for technology on the basis of a model. Investigators found that proposed model is a valid and self-efficacy of pre-service teachers not very effectively associated with their levels of technology acceptance.

Cakirs [4] conducted a study on technology integration and technology leadership in colleges as learning organizations. Findings unconcealed that the perceptions of institutional leaders on Technology were primarily optimistic which lecturers square measure within the power of net a pair of.0 abundant a minute low variety of lecturers keep in mind to form use of such technologies in their teaching and learning method in their lecture rooms.

Nair and Das [5] investigate the mathematics teachers' attitude towards the usage of technology while imparting instruction in mathematics with the help of technology acceptance model framework. Results of the research are- technology acceptance model framework is found to be an effective model; teachers' attitude of found to be favorable but teachers are not familiar with the use of instructional technology as tools of teaching; and teachers' attitude towards the use of instructional technology in teaching and perception about usefulness are subjected to perceived ease of use.

Qasem and Viswanathappa [6] explored the perception of in-service science lecturers towards integration of ICT in tutorial planning of content through an intermingled learning approach. A quasi-experimental style (pre-test/post-test style was employed) was utilized to conduct the analysis. A form was utilized to gather the knowledge from a sample of sixty science lecturers in the Asian country.

The results of the study reveal that cluster of science lecturers who were trained through the

intermingled learning approach take issue considerably in their perception towards the integration of ICT in tutorial planning of content from the management cluster. Tenzin and Dorji [7] explored the factors moving Bhutanese school teachers' perspective towards acceptance of technology in teaching. Results unconcealed that ICT is one in all the tools accessible to reinforce teaching and learning in colleges. However, in several developing countries, ICT is simply being introduced and its integration is restricted to colleges. So, that they have studied about the factors that affect the perspective of Bhutanese lecturers towards the usage of ICT in teaching. Four factors namely, Facilitating Conditions (FC) Perceived easy Use (PEOU), Social Influence (SI) and Perceived utility (PU) are studied. Result reveals that two factors i.e. perceived utility (PU) and perceived easy use (PEOU) have better and significant influence on perspectives of Bhutanese lecturers towards the usage of ICT in teaching than other two factors i.e. social influence (SI) and facilitating condition (FC).

Eickelmann and Vennemann [8] studied the angle and beliefs of academics relating to ICT in teaching and learning with relevance European countries. A sample of academics was collected from 3 countries- Norway, the European nation and the Federal Republic of Germany. Results reveal that academics possess a positive angle and beliefs of academics relating to ICT in learning and teaching.

## 2.1 Statement of the Problem

An attempt has been made to investigate the technology acceptance in teaching in relation to attitude of school teachers.

## 2.2 Objectives

1. To evaluate the attitude of school teachers towards technology acceptance in teaching.
2. To find out the difference in the attitude of female and male school teachers towards technology acceptance in teaching.

## 2.3 Hypotheses

There exists no significant difference in the attitude of female and male school teachers' towards technology acceptance in teaching.

## 2.4 Delimitations

School teachers' of eighteen schools situated in six districts namely Samdrup Jongkhar, Pema Gatshel, Tashi Gang, Tashi Yangtse, Mongar and Lhuntse of Bhutan.

## 2.5 Design

Method used for data collection was descriptive method i.e. descriptive survey. The sampling frame of research comprised of school teachers of different school of six districts namely Samdrup Jongkhar, Pema Gatshel, Tashi Gang, Tashi Yangtse, Mongar and Lhuntse of Bhutan Convenience sampling technique was used to draw samples from different schools of six districts of Bhutan. In total, the sample was restricted to 304 school teachers' (comprising of 151 female and 153 male school teachers'). Interpretation.

**Tool:** Teachers' attitude for acceptance of technology in teaching by Sherab Tenzin and Rinzin Dorji [9]

## 2.6 Statistical Techniques

- To evaluate the acceptance of school teachers towards technology in Teaching mean, standard deviation, frequency and percentage has been used.
- z'-test has been applied for finding difference in attitude of female and male school teachers' for technology acceptance in teaching.

## 3. RESULTS AND DISCUSSION

Analysis of data, result and interpretation of findings has been done keeping in view the objectives and hypotheses of the study.

### 3.1 Result Pertaining to Attitude of School Teachers' towards Technology Acceptance in Teaching

The attitude towards technology acceptance in teaching of the sample population was examined through the statistical techniques of mean, standard deviation and percentage [10-12].

After administering the school teachers' attitude towards technology acceptance in teaching scale, the mean and standard deviation of the population were calculated.

On the basis of the type of attitude school teachers have towards technology acceptance in teaching, they were categorized as school teachers with unfavorable, favorable and highly favorable attitude for technology acceptance in teaching respectively. Percentage was calculated corresponding to the obtained frequency of school teachers in each category of attitude for technology acceptance in teaching.

### 3.2 Interpretation

Table 1 shows that out of the 304 school teachers that constituted the sample population, 220 exhibit favorable attitude for technology acceptance in teaching. The number of school teachers with highly favorable and unfavorable attitude for technology acceptance in teaching is 42 and 42 respectively. The maximum number of school teachers exhibit favorable attitude for technology acceptance in teaching, while highly favorable and unfavorable attitude for technology acceptance in teaching is shown by the equal number of school teachers from the selected sample. The percentage of school

teachers falling in favorable attitude for technology acceptance in teaching is 72.37%, while that in highly favorable and unfavorable attitude for technology acceptance in teaching are 13.82% and 13.82% respectively. Fig 1 shows the percentage of school teachers in various categories of attitude towards acceptance of technology in teaching respectively.

The objective was to find out the difference in the attitude of school teachers towards technology acceptance in teaching with respect to gender. After administering the school teachers attitude towards technology acceptance in teaching scale, mean, standard deviation, standard error of difference and z'-value of the attitude of female and male school teachers towards technology acceptance in teaching were computed and the results have been presented in Table 2.

**H<sub>0</sub>:** There exists no significant difference in attitude of female and male school teachers' towards technology acceptance in teaching.

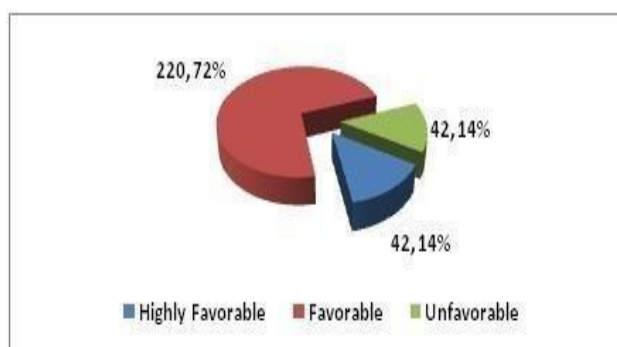
**Table 1. Respondent's attitude towards technology**

Attitude towards Technology	Number of School	Percentage of School
Highly Favorable	42 Teachers	13.82 Teachers
Favorable	220	72.37
Unfavorable	42	13.82
Overall	304	100.00

**Table 2. Data statistics result**

Gender	N	Mean	SD	SED	z'-value	Remark
Female	151	104.22	10.60			
Male	153	103.38	11.92	1.29	0.65	P>0.05

Table values of z' (df=302) at 0.05 and 0.01 level of confidence are 1.97 and 2.59 respectively



**Fig. 1. Percentage of school teachers in various categories of attitude towards acceptance of technology in teaching result pertaining to difference in attitude of school teachers' towards technology acceptance in teaching with respect to gender**

### 3.2 Interpretation

Table 2 shows the mean scores, standard deviation, standard error of difference and z'-value of attitude of female and male school teachers towards technology acceptance in teaching. The table reveals that the mean attitude scores of female and male school teachers towards technology acceptance in teaching are 104.22 and 103.80 respectively. It may be concluded that the mean attitude scores of female schools' teachers towards technology acceptance in teaching is almost same as the mean attitude scores of male schools' teachers towards technology acceptance in teaching. The value of standard deviation in case of female school teachers towards technology acceptance in teaching is 10.60 and in case of male school teachers towards technology acceptance in teaching it is 11.92. The z'-value of female and male school teachers' attitude towards technology acceptance in teaching comes out to be 0.65 which is insignificant at 0.05 level of confidence. It shows that School teachers of both the gender do not differ significantly from each other on the basis of their attitude towards technology acceptance in teaching. So, school teachers of both the gender possess same degree of favorable attitude towards technology acceptance in teaching. Therefore, the stated hypothesis that there exists no significant difference in attitude of female and male school teachers towards technology acceptance in teaching is accepted at 0.05 level of confidence.

### 4. CONCLUSIONS

- The percentage of school teachers falling in average level of technology integration in teaching is 71.36%, while that in high and low levels of level of technology integration in teaching are 13.07% and 15.57% respectively. Therefore majority of school teachers have positive (highly favorable and favorable) attitude towards the technology acceptance in teaching.
- Attitude of female and male school teachers towards technology acceptance in teaching do not differ significantly from each other. Female and male school teachers have favorable attitude, to equal extent or degree, towards the technology acceptance in teaching.

### COMPETING INTERESTS

Author has declared that no competing interests exist.

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