

Effectiveness of OPD on Teachers' Sense of Efficacy

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Abstract: The aim of the present study was to determine the effectiveness of OPD on teachers' Sense of Efficacy in relation to their attitude towards technology. The sample of 81 in-service school teachers were selected from the rural schools in-service rural area CBSE affiliated schools of Bathinda District in Punjab. The sample selected through simple random sampling technique. Teachers' Sense of Efficacy scale standardized by (Tschannen - Moran and Woolfolk Hoy 2001) and Attitude towards information technology for teachers developed by Dr Nasrin and Dr Fatima Islahi (2012) was administered to collect the data. The study was Experimental in nature. 2x2 Factorial Design was employed in the study to collect the data. Descriptive and inferential statistics was applied and collected data was analyzed by using mean, median, mode standard deviation and t-test. The results of the study indicated that the participant teachers attended five days online professional development had higher teachers' sense of efficacy than the teachers attended traditional professional development.

Keywords: OPD, Attitude towards Technology Teachers' Sense of Efficacy, In-service Teachers,

I. Introduction:

Education plays an important role in shaping, molding and reconstructing any progressive society from time to time. It is the foundation of the society. In Indian education system, teachers play a pivot and pervasive role in development of the new generation. Teachers have the potential to enhance the quality of education, to inspire the students, their commitment and ability to do work. Teachers' Sense of efficacy contributes to achievement as teacher with high efficacy are effective in teaching-learning process, use multiple strategies to meet the need of all types of students. Teachers efficacy constitutes a set of expectations that contribute to student- achievement (Ross & Regan, 1993; Ross, Bruce, & Hogaboam- Gray, 2006; Mascal, 2003; Muijs & Reynolds, 2001) (Bruce & Ross, 2008),

As teachers are the important factor of education system. Schools are needed to provide the facilities, resources and training to teachers. As the new education system according to new education policy 2020 creates the requirement of the teachers with high efficacy and ability to help the students in learning. Teachers who believe they will be successful, set higher goals for themselves and their students and try hard to achieve and persist through obstacles. (Ross & Bruce, 2007).

Teachers' sense of efficacy has been connected to many educational variables such as students achievement, teachers attitude towards teaching, willingness to implement innovation etc. Both Rotter's and Bandura's work expanded and enriched the concept of teacher efficacy. Tschannen - Moran and Hoy (2001) developed teachers' Sense of efficacy scale with two versions 24 items long version and 12 items short version instrument to assess the teachers' sense of efficacy at three dimensions instructional strategies, motivational strategies and behavioural management strategies. The concept of teachers' sense of efficacy is usually describes as "the extent to which the teacher believes he or she has the capability to affect students' performance and has close link between teacher efficacy and contextual variable (Bandura, 1977; Tschannen-Moran & Woolfolk Hoy, 2001) (Yoo, 2016), even for the students who are unmotivated or difficult (Armoretal. 1976; Guskey and Passaro, 1994).

The in-service teachers in 21st century are needed to be update their knowledge and skills. To meet the demand of changing world teachers needs to be aware of new methods, tools and techniques. so Professional development are provided to the in-service teachers to update their knowledge and skills at the

interval of time. . Professional Development programmes are the integral part of every educational institutes that helps the teachers to broaden their knowledge and skills to meet the challenges and face the problems and provide the opportunity(Kaur and Yadav,2021c). Professional Development is important in modern education and a critical and ongoing need for a school faculty (Tyner & Jenkins Henry, 2018).

The integration of information technology in the education is relatively new change in the education in teaching learning process. To enhance the teachers' sense of efficacy in schools including the other factors integration of technology by using various tools and techniques during teaching learning process enhance the efficacy of the in-service teacher.Globally there is a over whelming concerns over the quality of education.Today in-service teachers are facing new challenges as they are pushed towards the environment where not only the integration but usage of IT is required . Nowadays globally teaching learning process is totally based on IT utilization. In the current scenario the attitude of the in-service teachers towards technology is major factor that can contribute the impact in pedagogical aspects. Researches in the education done to know the attitude of teachers towards technology(Choudhary 2018) and use of computer in teaching learning process. It provides the help and support to in-service teachers and support highly effective teachers have right attitude towards technology and prvide opportunities for students to learn to operate in an information age (Habib 2018; Kaur and Yadav, 2021b), The training programs and workshops may have more impact on teachers' sense of efficacy (Bray-Clarks & Bates, 2003)(Jakhaia, 2018).

The covid -19 pandemic has hastened the construction of, participationin, and need for online courses and programs (Hartshorne et al., 2020)(Lay, Allman, Cutri, & Kimmons, 2020).The in-service teachers find new ways to teach the students using technology and progress significantly with the online professional development programme depending upon their own availability of time and interest. As online professional development has become a source to enhance the efficacy of in-service teachers as a new way to update themselves professionally.

II.Significance of the study:

In the 21st century world is changing very fast. Due to globalization life has become more international, interconnected and multicultural. There is a demand of the hour and push from the society to prepare the students that are able to face the challenges of life and enable to survive in life. In Indian education system teachers play a pivot role in achieving the desired aim of education . Teachers are responsible to impart the knowledge skills, attitude and values to the students. Due to globalizarion the potential of the in-service teachers is increased. The opportunities teachers avail in the form of online training sessions, workshop and professional development programmes has revolutionized the old education model.Researchers in the education showed that teachers' sense of efficacy is very important and teachers with high efficacy has belief andcapability to affect students (Tschannen-Moran & Woolfolk Hoy, 2001)(Yoo, 2016),, need for online courses and programs (Hartshorne et al., 2020)(Lay, Allman, Cutri, & Kimmons, 2020).To bring the quality in education system , there is need for online professional development programme to increase the efficacy of the teachers.Therefore, the investigator choose to develop an online professional development programme to incease the spirit of teachers' sense of efficacy .

III.Statement of the problem:

“Effectiveness of Online Professional Development Programme on Teachers' Sense of Efficacy in relation to their Attitude towards Technology ”.

IV.Operational Definition of Variables:

- 1) **Online professional Development:** refers to short duration virtual course on website prepared by investigator containing various modules including videos, practice exercises and quiz.
- 2) **In-service Teachers:**Refers to the teachers teaching in CBSE affiliated English medium schools
- 3) **Teachers' Sense of Efficacy:** refers to teachers belief that he or she has the ability to affect student performance.
- 4) **Attitude towards Technology:** refers to teachers behaviour and dependencefor using technology in classroom in teaching process.

V. Objectives of Study:

The objectives of the present study are:

1. To assess the levels of attitude towards information technology of in-service school teachers of experimental and control group.
2. The study the significant difference in the mean gain scores on teachers' sense of efficacy of group trained through online professional development programme and traditional professional development programme.

VI. Hypotheses:

The hypothesis of the present study is:

1. There is significant difference in the mean gain score of teachers' sense of efficacy of group trained through online professional development and traditional professional development programme.

VII. Delimitations of the study:

The present study was delimited to the following aspects:

- 1)The study was delimited to CBSE affiliated schools of Bathinda district in Punjab.
- 2)The study was delimited to in-service rural school teachers.
- 3) The analysis of data was delimited to teachers having high and low attitude towards technology.

VIII. Research Methodology:

8.1 Design:

The study was Experimental in nature. In this present study 2x2 factorial design was employed. The teachers were randomly assigned in Experimental and control group.

8.2 Sample

A simple random sampling technique was employed by the researcher to select a sample of in-service teachers teaching in CBSE affiliated English medium schools of Bathinda district in Punjab. The pre-test and post-test was employed to 144 in-service teachers i.e. 72 each in experimental and control groups. The pre-test on attitude scale towards information technology for teachers by Dr Nasreen and Dr. Fatima Islehi 2012 was administered as classifying variable to select the teachers on the basis of their level of attitude towards technology i.e. high and low attitude. The sample of 81 teachers were selected for the study.

8.3 Procedure of the study:

The Experiment was conducted in following phases stated below:

Phase I: Development of instructional material for online professional development programme .

Phase II: Administration of pre- test : Attitude scale towards information technology, Teachers' sense of efficacy scale administered as pre –test

Phase III: Implementation of professional development training programmes: Experimental group trained through online professional development and control group trained through traditional professional development programme.

Phase IV: Administration of post –test: Teachers' Sense of efficacy were administered as post-test.

Phase V: Scoring

8.4 Tools Used:

The tools used for data collection in present study are listed below:

- 1) Teachers' Sense of Efficacy scale (TSES) developed by Tschannen Moran and Woolfolk Hoy (2001)
- 2) Attitude Scale towards Information Technology for Teachers (ASTITT-NI) developed by Dr. Nasrin and Dr. Fatima Islehi (2012)

8.5 Data Analysis and Interpretation:

To analyse the data descriptive statistic percentage ,mean,median,mode were used to ascertain the normality of distribution of the scores .

t-test was employed to find out the significance of the difference between mean related to different groups. .

The statistical analysis of the details present in the followingtables:

IX. Results of the study:

9.1:To assess the levels of attitude towards the information technology of in-service school teachers

In order to find out the levels of attitude of in-service rural school teachers towards information technology, their scores on the attitude scale towards information technology for teachers were divided into three groups using the norms from the manuals of the scale. Random sampling technique was employed to divide the 144 in-service teachers into experimental and control group. 72 teachers allotted in experimental group and 72 in-service teachers were in control group. Further, The groups comprising of the in-service teachers having:i) High attitude towards technology ii) Moderate attitude towards technologyiii) Low attitude towards technology.Distribution of in-service teachers in experimental group is shown in Table 1 and control group in Table 2.

Table 1

Percentage distribution of in-service school teachers in three different groups on the variable attitude towards information technology (ASTIT) in Experimental group

Levels of attitude towards information technology	Score limit	Number of Teachers	Percentage
High attitude towards technology	109 and above	25	34.72%
Moderate attitude towards technology	85-108	30	41.66%
Low attitude towards technology	84 and below	17	23.61%

Table 1 showed that in experimental group (34.72%) in-service teachers are having high attitude towards technology and 41.66% teachers are having moderate attitude towards technology maximum percentage. The in-service teachers having low attitude towards technology is 23.61%.

Further the percentage distribution of in-service teachers as per their levels of attitude towards information technology in experimental group is depicted in Figure 1.

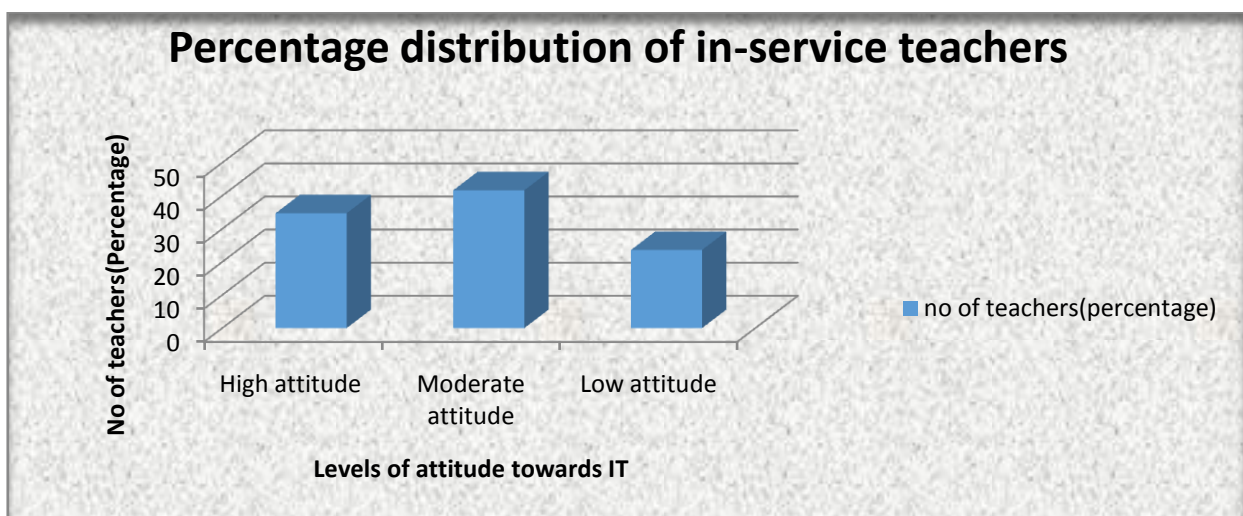


Figure 1:Percentage wise distribution of in-service teachers as per their level of attitude towards technology in experimental group

Table 2

Percentage distribution of in-service teachers in three different groups on the variable attitude towards information technology(ATIT) in control group

Levels of attitude towards information technology	Score limit	Number of teachers	Percentage
High attitude towards technology	109 and above	23	31.94%
Moderate attitude towards technology	85-108	33	45.83%
Low attitude towards technology	84 and below	16	22.22%

Further the percentage distribution of in-service teachers as per their levels of attitude towards information technology is depicted in figure 2

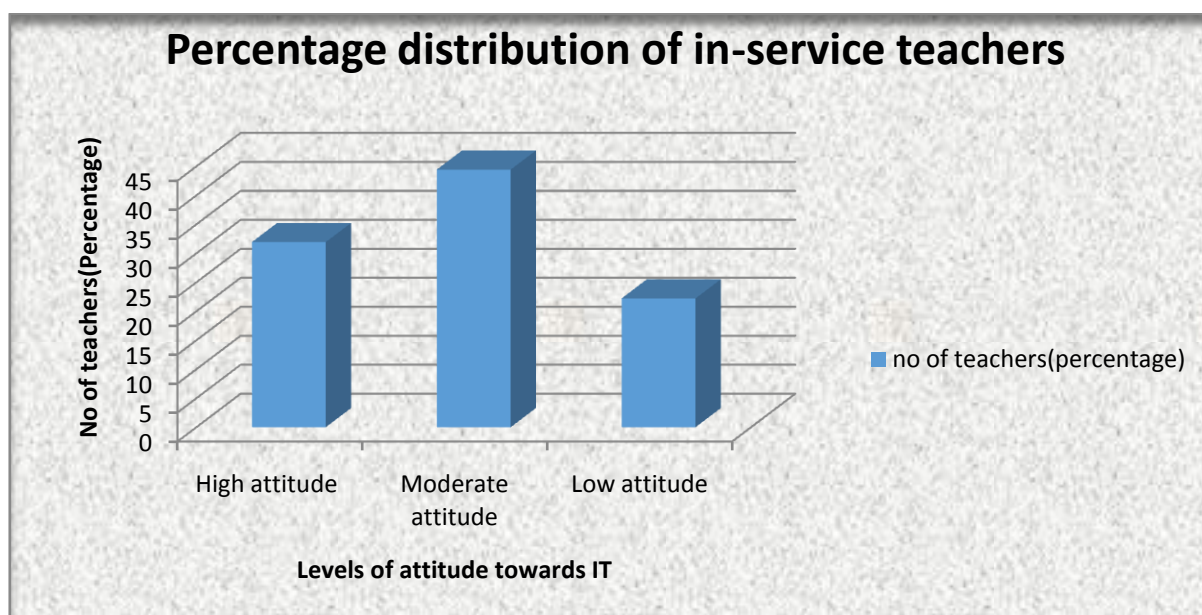


Figure 2: Percentage wise distribution of in-service teachers as per their level of attitude towards information technology

9.2: To study the significant difference in the mean gain scores on teachers' Sense of efficacy of group trained through online professional development and traditional professional development programme.

Hypothesis :There is significant difference in the mean gain score of teachers' Sense of efficacy of group trained through online professional development and traditional professional development programme.

For testing this hypothesis the mean gain scores was measured by the difference of post test and pre test scores of experimental and control group . The compared scores given in table 3.

Table 3
Showing Mean Gain Scores of Teachers’ Sense of efficacy for Experimental and control Group

Group	N	Pre Test	Post test	Mean Gain
Experimental Group	42	152.92	186.79	33.86
Control Group	39	144.59	168.25	23.10

Table 3 showed that the pre test, post test and mean gain scores of experimental group were 152.92,186.79 and 33.86 respectively. The pre test ,post test and mean gain scores of control group were 144.59,168.25 and 23.10 respectively.

It showed that the mean gain scores 33.86 of experimental group was higher than the mean gain scores 23.10 of control group. Hence, it concluded that the rural schools in-service teachers in experimental group trained through online professional development programme gained more efficacy than that of in-service teachers in control group trained through traditional development training programme.

To compare the significance of difference in teachers’ Sense of efficacy of in-service school teachers of experimental group trained through online professional development and control group trained through traditional professional development with having high and low attitude were analyzed using t-test.

Table 4
Showing the Significance difference in Teachers’ sense of efficacy of rural schools in-service teachers trained through online and Traditional professional development programme.

Variables	Number of in-service teachers	Mean	Standard Deviation	Degree of Freedom	t-value	Critical Value	Significant Level
Experimental group trained through online PD	42	33.86	27.149	79	2.316	1.99	0.05
Control group trained through traditional PD	39	23.10	10.533				

Table 4 showed that mean and standard deviation of in-service teachers trained through online professional development on teachers’ Sense of efficacy were found to be 33.86 and 27.149 respectively. The mean and standard deviation of in-service teachers trained through traditional professional development found 23.10 and 10.533. The computed t-value came out to be 2.316 which is greater than the table value (1.99) at 0.05 level of significance for 79df.

In order to statistically test the hypotheses the directional hypotheses were converted into null hypotheses, which are presented as “ there is no significant difference in the teachers’ sense of efficacy of group trained through online professional development and traditional development programme. As the t-value 2.316 is greater than the table value 1.99. Therefore, the Null hypothesis was rejected and the alternate hypotheses i.e. the mean gain score of teachers’ sense of efficacy of group trained through online professional development programme will be significantly higher than the group trained through traditional development programme was accepted.

Therefore, the findings suggest that the online professional development program has significant positive effect on the sense of efficacy of teachers. Similarly it is found that the professional development

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programs has positive effect on the other variable also i.e. teaching effectiveness of the teachers (Kaur & Yadav, 2021a). Therefore it can be said that such kind of programs are very helpful for teachers to enhance their professional growth.

Further the significant difference in number of teachers in both groups according to level of attitude is depicted in Figure3

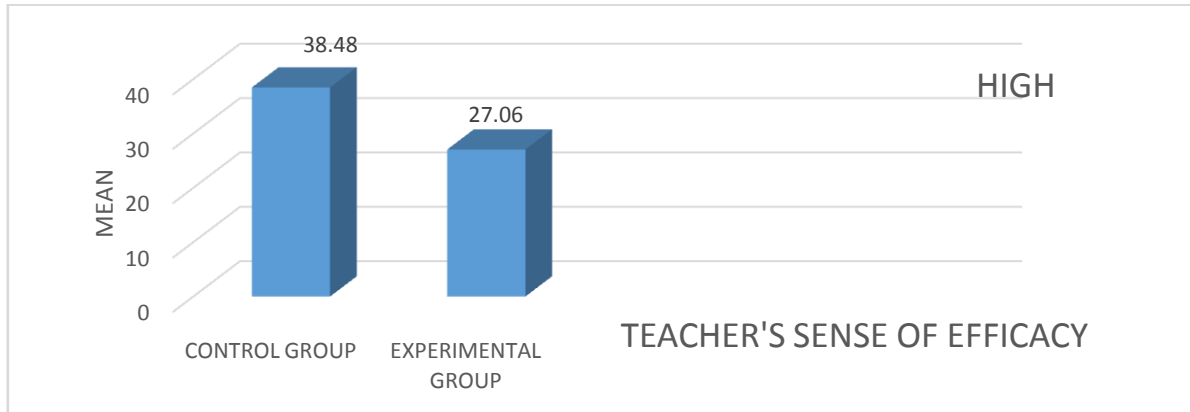
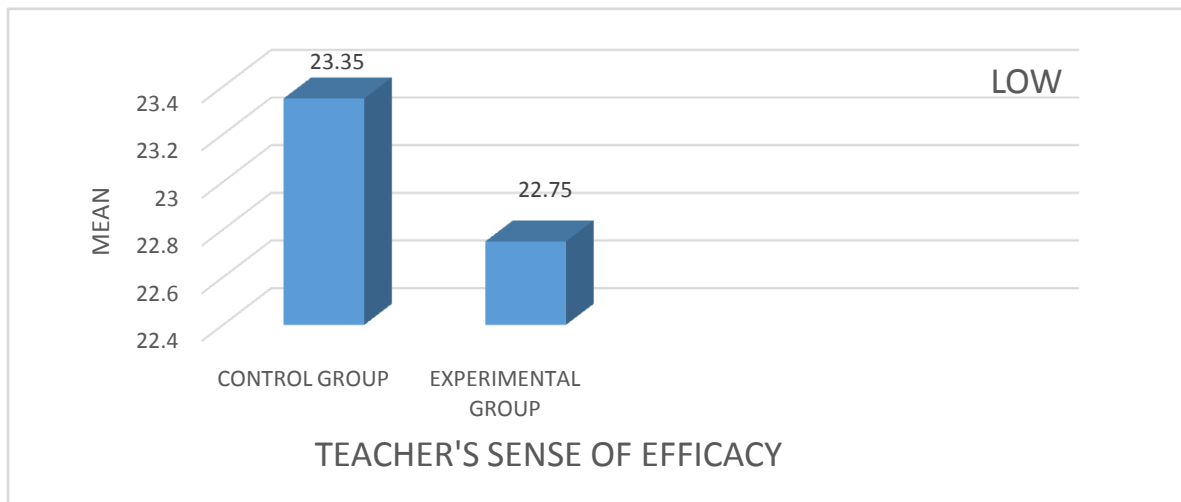


Figure 3: Bar graph showing the comparison in mean Gain scores of experimental and control group on Teachers' Sense of efficacy of rural schools in-service teachers in relation to their high attitude towards technology.

The significant difference in the mean gain score of two groups of in-service teachers is depicted in figure 4

Figure 4

Bar graph showing the comparison in the mean gain score of experimental and control group on teachers' sense of efficacy of rural schools in-service teachers in relation to their low attitude towards technology.



Conclusions:

The major findings of the study:

- 1) Out of the sample of 72 in-service teachers in experimental group ;34.72% teachers had high attitude towards information technology, 41.66% of teachers had moderate level of attitude towards information technology and 23.61 % had low level of attitude towards information technology.

- 2) Out of the sample of 72 in-service teachers in control group 31.94 % had high attitude towards information technology, 44.44% had moderate attitude and 22.22% had low level of attitude towards information technology.
- 3) The mean gain score 33.86 of teachers in group trained through online professional development has significantly higher than 23.10 that of group trained through traditional professional development programme.
- 4) Online professional development has a significant influence on teachers' sense of efficacy of in-service rural school teachers. There is significant difference in teacher efficacy of male and female teachers, in govt and private school teachers in the mean scores of professional development (Amulla and Aruna 2014) professional development showed positive impact on teacher efficacy (Ross and Bruce 2007) study showed that teachers participated in the professional development improved in their sense of efficacy (Bennett 2007)

In India teachers play an important role in education system. To meet the demand of 21st century society, in-service teachers has huge responsibility to prepare and train the next generation and enable them to face the challenges and to live and survive successfully in future life. The online professional development programmes plays a significant role in enhancing the in-service teachers teachers' sense of efficacy. In this current scenario during Covid -19 the integration and usage of the technology in the teaching –learning process by the in-service teachers enhance efficacy that is based on the attitude of in-service teachers towards technology and help to enhance the efficacy. The findings of the study indicated that online professional development programme has a significant effect on improving the teachers' sense of efficacy of in-service teachers. The findings of the study also indicated that most of the in-service teachers had moderate attitude towards information technology.

Educational Implications:

The study reveals the effectiveness of online professional development programme on Teachers' sense of efficacy of rural schools in-service teachers in relation to their attitude towards technology. It will help the government, educational policy makers, teacher trainers, administrators, teacher leaders to use this information to construct the professional development programmes to improve the efficacy of in-service teachers. This type of research is important for in-service teachers to create aware about their level of attitude towards technology and build confidence that they can enhance their abilities and efficacy.

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