



Digital Efficiency of Teachers towards Smart Class Technology

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Abstract

We are living in digital India where more and more emphasis is given on the use of digital technology. NEP 2020 also talks about the usage of technology in field of education. It has recommended for creating NETF for free exchange of ideas regarding the use of technology to enhance teaching-learning, assessment and administration process at school as well as in higher education. NEP has also emphasised on professional development of teachers and it is mentioned that every year a teacher has to undergo 50 hrs of CPD (Continuous Professional Development) for their professional development according to their interest area. In 21st century, one of the major parameter of teachers' professional development, is their efficiency in using this digital technology effectively for their teaching learning process. Smart class technology is one of the approaches of ICT which has been developed in the field of education. Smart class technology is the class where teaching is done by using e-content and Interactive white board. No electronic gadget or technology is successful until the user become efficient enough in handling that technology. In this paper researcher tried to study the efficiency level of teachers' of Kendriya Vidyalaya, Private and Govt. aided school of Delhi towards the smart class technology. By doing percentage and ANOVA analysis it was found there is significant difference between the efficiency level of teachers of different type of schools. Private teachers are the most efficient and govt. aided teachers are least efficient in all the three levels of efficiency. Along with that it was also found that teachers in all the three types of school are efficient in handling basic level features of smart class but as we move from basic to advanced level, the level of competency decreases. To make our teachers professionally developed in terms of digital efficiency there is need to bring change in teacher education curriculum as well as the type training given to pre service and in service teachers.

Keywords: Efficiency, Smart-class, Digital technology, Basic level, Intermediate level, Advanced level

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Introduction

Development is a very important term as associated with the process of progress. So, any individual who want to do progress, related to any aspect of life have to undergo through the process of development. Development is the requirement of life for its betterment. Professional aspect is one of the aspects of human life and for betterment in professional life it needs professional development. As each and every profession needs development, in the same way teaching profession which is popular as noble profession needs development because if teachers are professionally developed then only they can face the challenges and succeed in 21st century. This is the profession on which the development of the nation depends as teachers are considered as builders of the nation so there is a dire need of development in this profession. If we want to give a quality education we have to focus on professional development of teachers and have to take steps for their development, because of this, NEP 2020 recommended that teachers have to undergo minimum 50 hours of CPD(Continuous Professional Development) as per their interest area and as per their professional need. In terms of professional development in this paper researcher studied efficiency level of teachers towards the use of ICT in teaching profession. As ICT is broad term under which so many practices are going on, researcher has taken one aspect of ICT i.e., smart class technology which is teachers are using for teaching learning process throughout the world. Smart class technology is the class where teaching is done by using e-content and Interactive white board. Researcher through her work tried to study this aspect of ICT i.e., how efficient teachers are in using smart class technology for their teaching learning process.

Objectives

1. To study the efficiency level of teachers' of Kendriya Vidyalaya, Government aided and Private School towards smart class technology.
2. To compare the efficiency level of teachers' of Kendriya Vidyalaya, Government aided and Private School towards smart class technology.

Hypothesis

1. There is no significant difference in the efficiency level of teachers' of Kendriya Vidyalaya, Government aided and Private School towards smart class technology.

Methodology

Using a descriptive survey methodology, the data was collected which was quantitative in nature. It was collected by using researcher's self-made tool on efficiency which is in the form of 5-point Likert scale. Multistage random sampling was used for selecting the sample. After the sample framing of undefined population, schools were selected randomly from each category in Delhi. From each schools' teachers were selected randomly for data collection. Sample consist of total 140 teachers, 52 from private school, 36 from government aided and 52 from Kendriya Vidyalaya.

Teachers' efficiency questionnaire consists of 30 five-point Likert scale items to measure the teachers' self-perceived efficiency towards smart class technology. The 30 items were divided into 3 dimensions or levels i.e., Basic level, intermediate level and advanced level. The quantitative data was collected from the questionnaire was analysed by using percentage analysis and ANOVA.

Result and Discussion

Two aspects were examined through this study one is how secondary school teachers of Delhi are professionally developed in terms of their digital efficiency and was there any significant difference in the perceived efficiency of teachers of private, government aided and Kendriya Vidyalaya teachers. The result is tabulated school wise and presented below.

Private School

Table1: Efficiency level of Private school teachers towards different levels of smart class technology.

	Basic Level	Intermediate Level	Intermediate Level
Completely	19%	8%	5%
To large Extent	46%	27%	16%
To Some Extent	12%	33%	25%
Undecided	13%	15%	22%
Not at all	11%	17%	31%
Total	100%	100%	100%

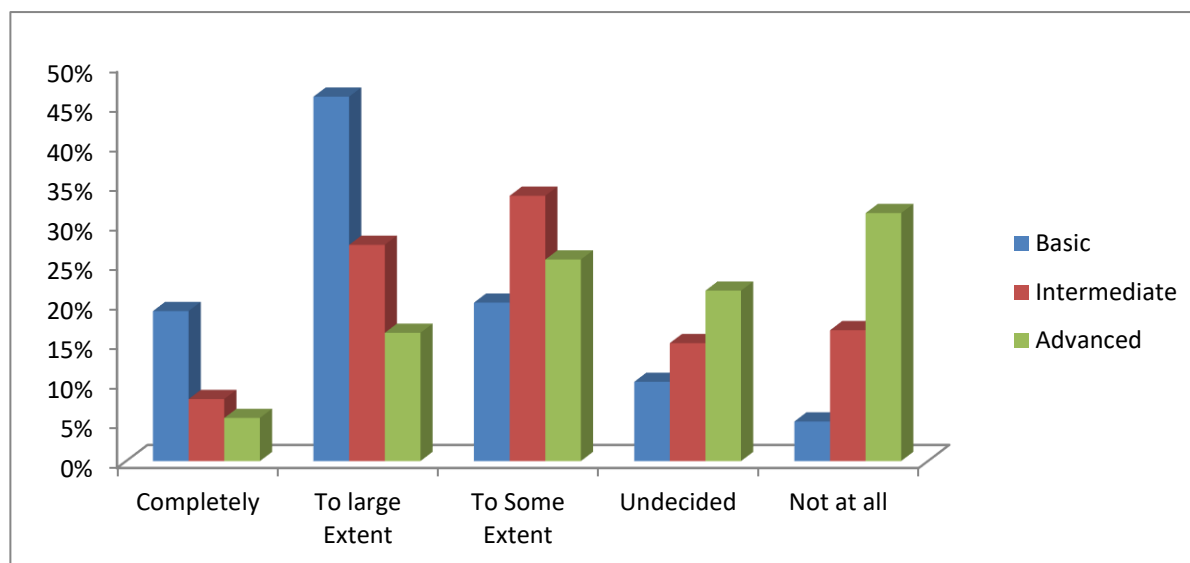


Figure 1: Efficiency level of Private school teachers towards different levels smart class technology

From the table as well from the graph it is clear that maximum teachers know how to use the basic features of smart class to a large extent. Basic feature includes complete knowledge in handling basic features of smart class which include opening of projector and the application in acceptable time frame, comfortable in using stylus or finger for writing. Able to draw different shapes and colour them easily. Efficient in using blind spot, changing the colour of background. Confident in using the floating key board and colour of pen from pen tray and can easily locate appropriate teaching resources. As we move from basic to intermediate and then to advanced level efficiency of teachers were decreasing. Maximum teachers fall under the category of some extent regarding the features of intermediate level. Intermediate level shows the efficiency of using camera for capturing the image, able to record the lecture, connect the board to various online e-content. Comfortably use virtual labs for demonstrating experiments. Confidently use screen capture, take snapshot of images, able to take print out of lecture. Easily do the drills practice activities of IWB. Efficient in use digital modules of lesson which consist of 2D, 3D, MCQ worksheet. Efficiently create charts, tables and can easily align the readymade material with their lesson plan. At advanced level maximum teacher fall under the category of not at all and to some extent. Advance level features include use of diagram maker, calibration setting, designing of own teaching material and adding it to gallery.

Government aided school

Table 2: Efficiency level of government aided teachers towards different levels smart class technology.

	Basic Level	Intermediate	Advanced Level
Completely	3%	2%	1%
To large Extent	52%	38%	11%
To Some Extent	13%	16%	26%
Undecided	10%	14%	23%
Not at all	22%	30%	39%
Total	100%	100%	100%

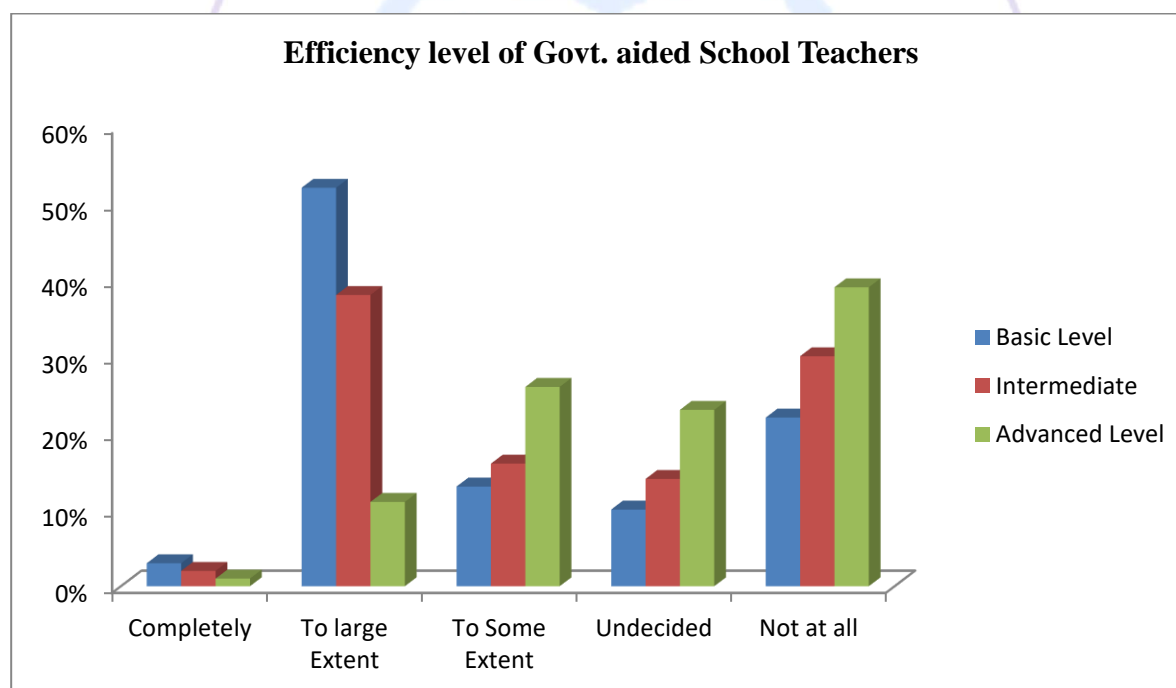


Figure 2: Efficiency level of Government aided teachers towards different levels smart class technology

Graph clearly indicates that in Government aided schools least number of teachers i.e.,3% in basic level, 2% each in intermediate and advanced level felt that themselves efficient in handling different features of smart class. Maximum teachers know the basic level up to large extent. At intermediate level 50% teachers know the use of features up to large extent and 50% fall under the category of not at all i.e. they have no knowledge of how to use these features.

Kendriya Vidyalaya

Table 3: Efficiency level of K.V. teachers towards different levels smart class technology.

	Basic Level	Intermediate Level	Advanced Level
Completely	12%	11%	11%
To large Extent	48%	31%	31%
To Some Extent	18%	19%	16%
Undecided	7%	8%	12%
Not at all	15%	31%	30%
Total	100%	100%	100%

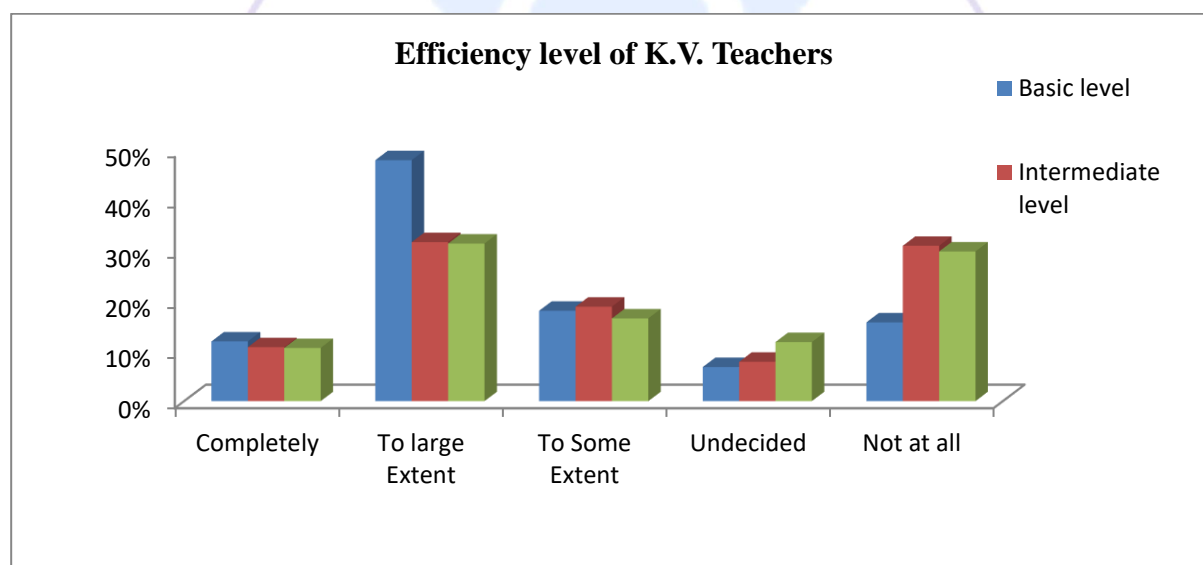


Figure 3: Efficiency level of K.V. teachers towards different levels smart class technology

From the figure 12 it can be conclude that in basic level maximum teacher know the use of feature to a large extent. In intermediate level and advanced level maximum don't know the feature at all. Very less percentage of teachers' i.e. 12% in basic level, 11% in Intermediate and advanced level know the usage of features completely.

Table 4: ANOVA analysis of Efficiency of teachers of different schools related to different dimensions.

Dimensions	School	N	Mean	Std. dev	Df	F	Sig
Basic level	Private	52	45.13	10.38	2,136	6.47	0.01
	Govt. aided	36	39.14	8.42			
	K.V.	52	44.98	7.36			
Intermediate level	Private	52	34.08	8.47			
	Govt. aided	36	28.67	8.65	2,136	4.18	0.01
	K.V.	52	31.87	9.94			
Advanced level	Private	52	11.24	3.53			
	Govt. aided	36	8.79	3.44	2,136	5.38	0.01
	K.V	52	10.56	3.82			

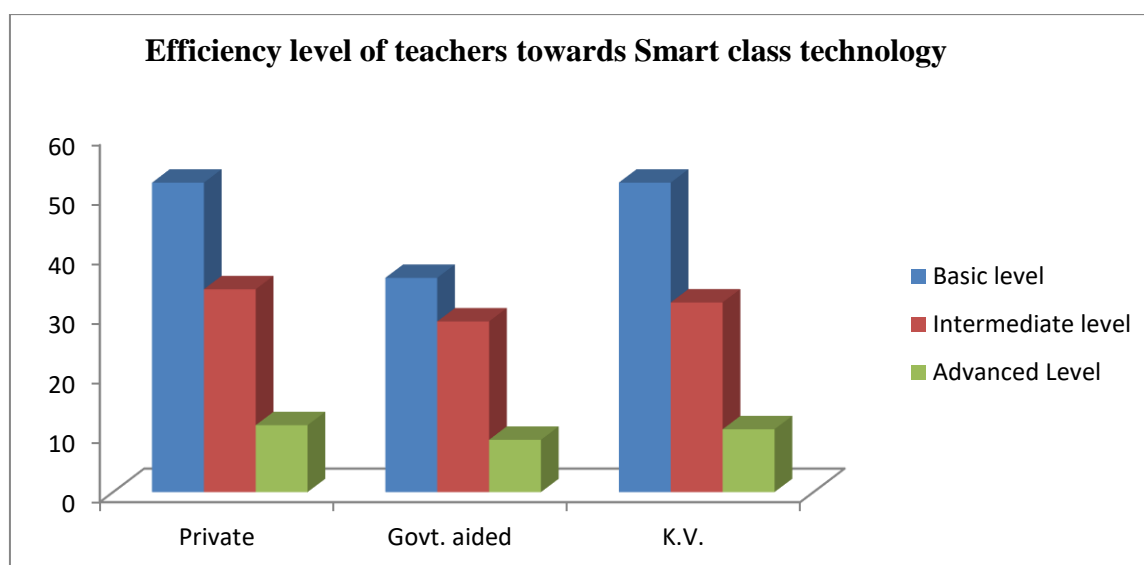


Figure 4: Efficiency level of teachers of all the three schools towards smart class technology.

Table 4 show analysis of variance between dimensions of efficiency of teachers towards smart class and types of school. It is derived from the table and indicated in the graph that there is significant difference between the Efficiency of teachers and type of school. $F(2,137)=6.47,4.18,5.38, p=0.01$. Private teachers are most efficient and govt. aided teachers are least efficient in all the three levels of efficiency of smart class technology.

Conclusion

Overall result showed that teachers are not very efficient in handling the smart class technology. On analysing the result of each school individually, it was found, in all the three schools, maximum percentage of teachers are efficient in handling the basic features of smart class and as we move from basic to intermediate and then to advance level the percentage of teachers efficiency in handling the features decreases. Next finding showed that in basic and intermediate level maximum percentage of teachers fall under the category of large extent and some extent and very less percentage of teachers were under the category of completely i.e. completely efficient in handling the features of basic and intermediate level. This indicates that even in basic level also teachers are not fully competent in using the features which include opening of projector then software, use of stylus, eraser, blind spot, different pen from pen tray, floating keyboard, highlighting of text etc. At intermediate level also which include capturing of image, recording of lecture, use of various online e-content, use of virtual lab, module, doing drill practice. Majority of teachers were able to use these features to some extent and then to large extent category. At advance level, negligible percentage of teachers

fall under the category of completely knowing the features. In fact, here maximum teachers were under the category of not at all i.e., they don't know at all how to use these features. Overall, the result is consistent with the literature that there is a dire need to improve and facilitate the innovative use of technology in education (Adomi & Anie, 2006; Asogwa, 2006; Bassey et al., 2007). Another finding of the study showed that on comparing the efficiency level between the teachers of all the three schools, significant difference was found between the efficiency levels of the teachers of three schools. Private school teachers are most efficient and government aided were least efficient. Private school teachers are better than government and K.V. teachers because in private school they have been pressurised by management for the maximum use of smart class for their teaching learning process. Secondly private schools have better infrastructure than government aided and K.V. To make our teachers efficient in handling smart class technology first of all school management should work on infrastructure, which also include network connectivity. Infrastructure also include maintenance of equipment because it was found that school are having smart classroom but are not maintained properly because of which most of the features are not function able. Concept of smart class and its use should be included in the curriculum of teacher training course because there they have enough time as compare to in-service teacher to learn and integrate technology in their teaching learning process. In short interval of time training and workshops should be organised for teachers for effective use of smart class technology in their teaching learning process. During training, trainers along with the use of different features of smart class should also tell the technical problem faced during its use and how to come out of it or resolve it. School should appoint a full time technical person who can assists teachers regarding the use of smart class technology. By implementing the above mention recommendations we can make our teachers digitally efficient and thus professionally developed.

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