

# Secondary Teachers' Attitude towards the Use of Techno-Pedagogical Tool-K-Yan in Classroom Instruction - A Study in Purbabardhaman District, West Bengal

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**Abstract:** *It has been observed that development of techno-pedagogical tools have changed the entire scenario of education system in India. The use of techno-pedagogical tool K-Yan (as a wing of ICT) makes complex teaching learning process very easy. To enhance the quality of learning, Govt. of West Bengal provides K-Yan (vehicle of knowledge: one of the core technology component of smart classes) to many secondary and primary schools in different districts. It helps the student to receive updated, reliable, curriculum wise information through their mother tongue language (Bengali). This study reviews that secondary school teachers approach towards the use of K-Yan has influenced by gender, stream as well as previous knowledge of computer proficiency. This study also finds the educational implication of K-Yan and also focuses the problem of teachers at the time of using K-Yan.*

**Keywords:** K-Yan, smart class, ICT, secondary school teachers, techno-pedagogical tool.

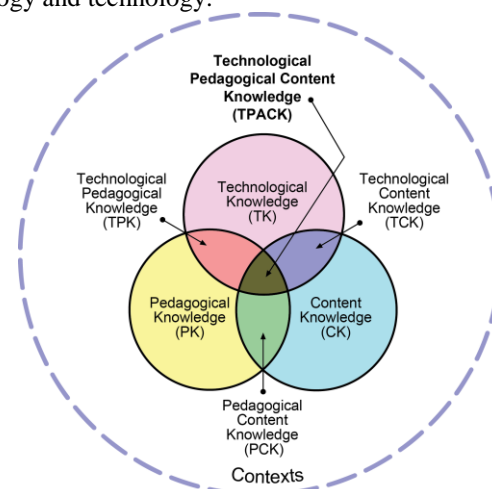
## 1. Introduction

Now we are living in an era of information and knowledge explosion. Information explosion expands very quickly that we have to accumulate with the latest advancement. Technology has made global economy too powerful to manage the world (tinio 2009). We observed that development of techno-pedagogical tools have become a crucial factor to meet the demand of changing education system. The use of techno-pedagogical tool-K-Yan (a wing of ICT) helps in enhancing the quality of education. It has opened a new horizon in modern classroom instruction. Information and communication technology (ICT) is recognized as an important catalyst for social transformation and an important tool for education. Integration of ICT in education projects, also popularly called technology in education (TIE) started getting implemented in early 2002 in North America and in Europe.

The department of education, Govt. of West Bengal, with the active encouragement of the department of information technology, Govt. of West Bengal introduce computer based learning system titled K-Yan (vehicle of knowledge) in a planned manner through West Bengal electronic industry development corporation ltd (WEBEL) mended ILFS-ETS as implementing agency. Students of different school of West Bengal have received a direct, updated, reliable information (as per respective syllabus) through preloaded study materials of K-Yan in mother tongue language (Bengali Language). Now-a-days a teacher should also realize the needs of presenting different teaching experience in various ways by adopting updated teaching learning methodology.

## 2. K-Yan Platform

K-Yan acts as a techno-pedagogical tool in classroom instruction. The techno-pedagogical knowledge is a collaboratively developed framework of scholars and researchers seeking to conceptualize and clarify the competencies that evolve from the intersection between pedagogy and technology.



**Figure 1:** Technological Pedagogical Content Knowledge (TPACK)

- 1) K-Yan that signifies vehicle of knowledge is one of the core technology components of smart classes, designed at the industrial design center, IIT-Bombay. K-Yan combines a hi-tech projector with a PC, a DVD writer, A TV tuner, in-builds speakers, a 500 GB HDD, wireless keyboard and a mouse-all in one box.
- 2) The K-Yan has own the In2004 Indian innovation award 2005 and Maharashtra ITaward 2004 for the best community learning technology. According to Outlook Magazine K-Yan is one of the top innovations that will

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change India. Over the past few years over 2lakh teachers in 8000 Govt. & private schools have been using the K-Yan to change the way their students learn in classroom.

- 3) With all their hi-tech innovation build into one unit, the K-Yan remains a compact teaching learning aid designed to enable a teacher to focus on teaching rather than technology. At the touch of a button the teacher can toggle between multiple media like PC, TV and internet to bring about a good classroom experience to the students.

#### Advantages of using K-Yan in Classroom Instruction

There are so many advantages of K-Yan. Some of them are-

- 1) K-Yan has become a Key enabling device towards the concept of digital classrooms. As a standalone device or with optional accessories its modular construction and portability allow it to be customize for many different classroom situation and use context.
- 2) K-Yan has proved to be one of the most successful solutions for delivering content for various e-learning platforms. K-Yan popularity as a group learning device in the classroom is also due to the ease with which

anyone can learn to use it productively with very little training.

- 3) With its ultra-bright projection capability and folding self-standing screen K-Yan can be used in open fields and grounds. The device can be powered using anything from inverter or can batteries to solar in situation where there is no electricity. By taking the classroom to potential learners K-Yan opens up the possibility of learning in the evenings or in the nights as convenient. It can be installed in buses, vans with both rear and front projection to create classroom on wheels.
- 4) IL & FS education has also developed a host of multimedia learning materials to be used through K-Yan. Then solution empowers the teacher and enabled students to learn concept more effectively through interactive media.
- 5) School reports higher students' attendance since the use of K-Yan in classroom.
- 6) The large hard-disk along with inbuilt connectivity for internet and television enable unlimited amount of educational material to be brought to learners anywhere.



Figure 2: Diagram showing different parts of K-Yan

### 3. Objective of the Study

The objectives of the study were..

- 1) To access the attitude of secondary school teachers towards the use of K-Yan in classroom instruction.
- 2) To compare the attitude of male and female teachers towards the use of K-Yan.
- 3) To compare the attitude of arts/social science and science background teacher towards the use of K-Yan.
- 4) To compare the attitude of teachers having previous knowledge of computer proficiency and teachers don't have any previous knowledge of computer proficiency towards the use of K-Yan.

#### Hypothesis

- 1) There will be no significant difference between the attitude of male and female teachers towards the use of K-Yan.
- 2) Arts/social science and science background teacher do not differ significantly on their attitude towards the use of K-Yan.

- 3) Teachers having previous knowledge of computer proficiency do not differ significantly from the teacher don't have previous knowledge of computer towards the use of K-Yan.

### 4. Methodology of this Study

Investigators have made an attitude scale towards the use of K-Yan to collect the data. The reliability of this scale was calculated by test retest method. The data was analyzed by using mean, standard deviation and t-test.

#### Population and Sample

The population comprised of secondary school teachers of PurbaBardhamandistrict, West Bengal, India. The sample consists of 150 teachers including both male and female. The details of sample are as follows.

**Table 1:** Details of the sample:

Name Of School	No of Male Teachers	No of Female Teachers	Total
Burdwan Municipal Boy's High school	10	10	20
Ichlabad High school	10	10	20
Burdwan Raj Collegiate High School	10	10	20
Burdwan Tejganj high school	10	10	20
Krishnapur High School	10	10	20
Railway Vidyapith High School	10	10	20
Burdwan Town School	15	15	30
Total	75	75	150

**5. Analysis and Interpretation of Data**

**Objective-1**

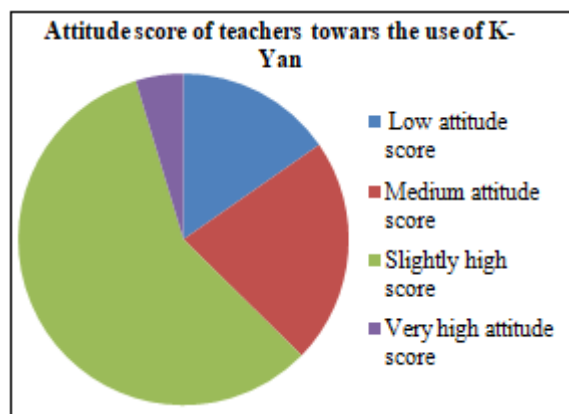
To assess the attitude of secondary teachers towards the use of K-Yan.

**Table 2:** Assessment of attitude scores of secondary schoolteachers

Categorization of Attitude Score	No. of teachers (%)
Low (Below25%)	23 (15.4%)
Medium (25-50%)	33 (22%)
Slightly High (51-75%)	87 (58%)
Very High (Above75%)	07 (4.6%)

**Interpretation**

From table-2, it can be observed that out of 150 teachers 07teachers (4.6%)have very high positive attitude,87 (58%) have slightly high attitude, 33 (22%) have medium attitude and 23 (15.4%) teachers have low attitude towards the use of K-Yan in classroom teaching.



**Objective-2:**

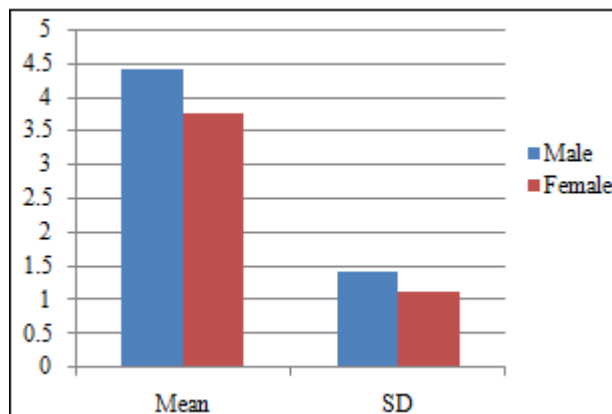
To compare the attitude of male and female secondary school teachers towards the use of K-Yan.

**Hypothesis-2.1**

There will be no significant difference between the attitude of male and female secondary teachers towards the use of K-Yan.

**Table 3:** Showing the difference between the mean scores of the attitude of male and female secondary school teachers towards the use of K-Yan.

Variable	N	MEAN	SD	DF	CAL t value	TAB t value	Level Of Significance
Male	75	4.41	1.42	142	3	2.326	Significant at 0.01 level
Female	75	3.77	1.13				



**Figure 3:** Shows the difference between the attitude scores of male and female teachers

**Interpretation**

In table-3, Calculated t-value is more than tabulated t-value at 0.01 level of significance i.e. Null hypothesis is rejected i.e. there is a significant difference between the attitude of male and female teachers towards the use of K-Yan. It shows male teachers have more favorable attitude than female teachers.

**Objective-3:**

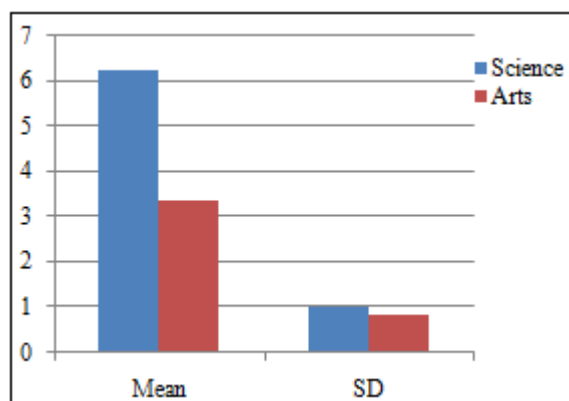
To compare the attitude of science and arts background teachers towards the use of K-Yan in classroom teaching.

**Hypothesis-3.1**

There will be no significant difference between the attitude of Science background teachers and arts background teachers.

**Table 4:** Showing the difference between the mean scores of the attitude of science and arts background teachers towards the use of K-Yan

Variable	N	Mean	S.D	D.F	Cal. T-Value	Tab. T-Value	Level Of Significance
Science	63	6.25	1.01	115	19	2.358	Significant at 0.01 level
Arts	87	3.38	0.85				



**Figure 4:** Showing the difference between the attitude of science and arts background teachers.

**Interpretation**

In table-4, calculated t-value is more than tabulated t-value at 0.01 level of significance i.e. null hypothesis is rejected

i.e. there is a significant difference between the attitudes of teachers having science and arts background towards the use of K-Yan. It shows that science background teachers have more favorable attitude than arts background teachers.

**Objective-4:**

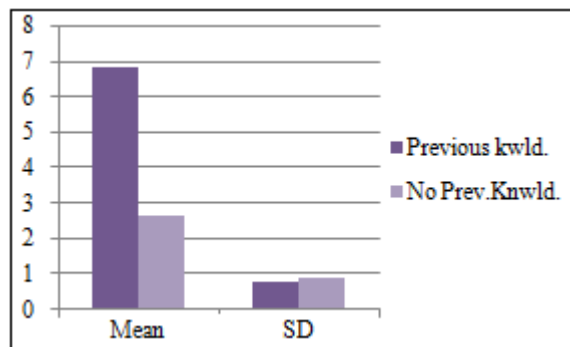
To compare the attitude of teachers having previous knowledge of computer and teachers don't have previous computer knowledge of computer towards the use of K-Yan in classroom teaching.

**Hypothesis-4.1**

Teachers having previous knowledge of computer and teachers don't have previous knowledge of computer do not differ significantly on their attitude towards the use of K-YAN.

**Table 5:** Showing the difference between the mean scores of the attitude of teachers having previous knowledge of computer and don't have previous knowledge of computer towards the use of K-Yan

Variable	N	Mean	S.D	D.F	CAL. t-Value	TAB. t-Value	Level of Significance
Having Prev. Knowledge	56	6.89	0.82	126	29	2.358	Significant at 0.01 levels.
Don't Have Prev. Knowledge	94	2.69	0.93				



**Figure 5:** Showing the difference between the attitude of teachers having previous knowledge of computer proficiency and teachers don't have previous knowledge of computer proficiency.

**Interpretation**

Calculated t-value is more than tabulated t-value at 0.01 level of significance i.e. null hypothesis is rejected i.e. there is a significant difference between the attitudes of teachers having previous knowledge of computer teachers having without previous knowledge of computer towards the use of K-Yan. It shows that previous knowledgeable teachers have more favorable attitude than those teachers having without previous of computer.

**6. Findings of this Study**

From this study we observe the following..

- Most of the secondary school teachers have favorable attitude towards the use of K-Yan in classroom teaching.
- There is a significant difference between the attitude of male and female teachers towards the use of K-Yan.

Male teachers have slightly more favorable attitude than female teachers.

- Science background secondary school teachers have a more favorable attitude than Arts background teachers towards the use of K-Yan.
- There is a significant difference in the attitude of teachers having previous knowledge of computer and the teachers don't have any previous knowledge of computer. Teachers having previous knowledge of computer shows more favorable attitude.

**Educational Implications**

K-Yan helps the learners in the following ways

- 1) Use of K-Yan in classroom instruction helps to attract the concentration of learners very much.
- 2) It helps to remove the boring of lecture method.
- 3) Learners achieve a clear idea of respective topic through the study material of K-Yan.
- 4) The audio visual teaching learning method of K-Yan opens a new horizon of modern way of learning.
- 5) It helps the student of west Bengal to compete with national level performance very easily.
- 6) It enhances the quality of teaching learning process.

**Other information comes out from this study**

The additional information we observed from this study are

- 1) Most of the teachers do not use the stylus.
- 2) Very few teachers connects internet with K-Yan.
- 3) Maximum teachers use only about 20% functional aspect of K-Yan.
- 4) Most of the teachers appreciate the preloaded material of K-Yan.

**Future Scope of K-Yan**

We observed the following measures by which the K-Yan would be widely used in future.

- 1) All the subjects according to curriculum of W.B.B.S.E have to be included as preloaded study material of K-Yan.
- 2) Periodicals teacher training about K-Yan should to be done.

**7. Acknowledgement**

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**8. Conclusion**

At last it has been said that the use of techno-pedagogical tool- K-Yan in classroom instruction plays very important role to enhance the quality of education in modern education system of our state as well as of our country. Teachers should engage themselves actively in this entire process. Government should give more financial, technological and infrastructural support to the schools to enhance wide and intense use of K-Yan. At the same time the consciousness of mass should be needed.

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