

## **TEACHERS' PEDAGOGY PERCEPTIONS ON INTERACTIVE WHITEBOARD TECHNOLOGY**

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### **ABSTRACT**

Very recently school in India as slowly integrating new innovative tools into their school curriculum as Interactive whiteboards (IWB) into schools as well as higher education, so the study has been designed to examine on school level teacher's concern about the present technology - Interactive whiteboard technology. The aim is to study the school ICT infrastructure and the teacher's perception on instructional design for pedagogical use effective use of IWB technology. school as government- aid school, private and CBSE School teachers from the state of Pondicherry, India. Random sampling as used for participants selection, 67 were male and female teachers. In this article, we discuss teachers' about school infrastructure, teacher usage level and teachers perception on Interactive whiteboard mediated instructional environment the study found that that digital project and desktop computer were provided to all teachers for teaching process as to be embedded on teacher pedagogy perception and school infrastructure place a vile role for the development education as - "Teaching with technology", "Belief about technology", "Collaborative Environment, "Students outcome" and "Reflective Thinking". Curriculum knowledge, pedagogy and learning.

**KEYWORDS:** ICT, Teacher and Learner, IWB Technology and Interactive Environment

### **INTRODUCTION**

Information society as started to integrate in contemporary cultural development on 1960 and until 1980 claims to be as information revolution were subject to extensive manner. According to macr prensky (teaching digital native – Partnering for real learning) the most successful integration technology in their interactive learning environment is depends on teacher learning behavior, building the technology with pedagogy is depended on student and teacher's active utilization of technology for effective learning. During recent years, a number of new schools have been built in Wales with a high level of technology resourcing, using a specification for each classroom of one IWB linked to a projector and teacher's computer, together with approximately five networked desktop computers. This is in addition to computer labs containing 25 or more computers used for discrete lessons in ICT which focus on developing ICT capability which can be applied to learning across the curriculum. A small-scale study was set up to investigate the impact of this level of resourcing on the teaching of core subjects (English, mathematics and science) at primary school level. According to "McLuhan anticipated, the media and mass communications devices are at the center of our world", shaping lifestyle and worldview. Entries dealing with the basic ideas, concepts, personages, schools of thought, theories, and technical trends that come up recurrently in the literature on media and information communication. Technology would drive our world. Since the literature also makes frequent references to fields such educational communication, educational technology, information technology and diffusion and integration technology etc.

### **Review of Related Literature**

During recent decades, many research study on level of technology resourcing, using a specific ICT tool for instructional environment, teachers and learning institutions, the use of were depended on computers for educational

purpose; According to fishbein and Ajzen (1975), the strength of a belief is indicated by the person's subjective probability that he or she will perform the behavior in question. This suggests that it is worthwhile to investigate teachers' beliefs, and also to explore the implicit link between teachers' views on learning and teaching and their actual classroom practices. Sheingold (1990) said integrating technology in the classroom is not about teaching students to operate computers, but integrating technology is about helping teachers to use technology as tool for learning.

The term "**Infrastructure**" is used here to describe the school ICT network and its related component parts. ICT mediated design identified in the my scholarly work as, information transmission involved the use of CDs and DVDs, files sent as email attachments, information displayed on web sites, and Internet (usually web) accessed library and data base information (Naidu, 2002).and common ICT abbreviation stands for Information communication and technology, which means information transmission thought variable medium for communication certain messages thought variable new digital devices - technologies tools.

According to Kay, 2006; Zhao & Frank, 2003 is questing that whether all teacher have the ability to utilizes the ICT infrastructure and they have adequate ICT Skill and knowledge for their teaching. Other aspect ICT infrastructure was, (Hernandez-Ramos -2005) drew question that access and availability, whereas ICT infrastructure is located within schools, which may not be freely available for the teacher access. Pei-Chen Sun, Hsing Kenny Cheng(2007) state that the interactive media base design and materials are so expensive for the rapid integration computer and Internet technologies and it makes endeavor possible for teaching and learning process. Beauchamp(2007) research finds that IWB based teaching and learning activities on teacher interaction through IWB with learner, learner interaction through IWB with teacher and learner interaction through IWB with learner. According the Heather J. Smith, Steve Higgins, Kate Wall & Jen Miller (2005) varies number of themes were identified in the literature about the potential benefits of IWBs for teaching. flexibility and versatility, multimedia/multimodal presentation, efficiency, supporting planning and the development of resources, modeling ICT skills and interactivity and participation in lessons

## **METHODS**

This study used a field experiment to empirically test the research hypotheses. This section describes the participants, the experimental system, instrument development, procedures and measures.

- To What extent the Grade 6-10 class teachers facilitating condition for technology resource for teaching and learning Environment.
- To what extent the school teachers knowledge, attitude and belief about the IWB mediated instructional Environment?

### **Population and Sample**

The pilot study population was teacher (Grade 6-10 class teachers ) school as government- aid school, private and CBSE School teachers from the state of Pondicherry, India. From the randomly selected participants, 67were male and female teachers.

## **RESULTS AND DISCUSSIONS**

### **Facilitating Condition for Technology Resource for Teaching and Learning Environment**

To measure the availability of ICT infrastructure by school the relationship between facilitating conditions. The items 10 were constructed based on a literature review. The questionnaire used the 6 point Likert scale. The items were constructed by the researchers based on a comprehensive literature review.

**Table 1**

Reliability Statistics	
Cronbach's Alpha	N of Items
.723	10

The reliability of the instrument was pilot tested on 40 teachers who were not involved in the actual study. The overall Cronbach's alpha values for all the scales were reported to be 0.723 from 10 items facilitating condition.

**Table 2**

Descriptive Statistics		
Variables	Mean	Std. Deviation
Access of internet for teaching	1.9	1.2
Desktop computer in class	2.7	1.5
Desktop computer in lab	2.6	1.5
Student use desktop in class	2.3	1.0
Student use desktop in lab	2.2	1.0
Laptop for student use	0.7	1.1
Printer	2.5	0.9
Scanner	0.3	0.7
Digital projector for presentation in class	3.4	1.0
Television	1.4	0.9

Form above descriptive statistics table found that that high score mean valued variable are digital projector for presentation in class (3.450), Desktop computer in class (2.7500), Desktop computer in lab (2.6750)and other digital hardware printer, scanner as 2.550 and 2.100 and other variable were low level usage from teaching community Television and laptop for student use score .3810 and .7130. The above table relives that digital project and desktop computer were provided to all teachers for teaching process.

**Table 3**

Variables	Mean	S.D
IWB technology reduces time i spend in preparation of the resource material	3.8	1.0
IWB technology made it easier for a teacher to review, explain, and summarize the subject	3.8	1.2
IWB technology provides a good supplement to support teaching	4.1	1.0
Integration of IWB technology into the curriculum results great improvement in learning over the traditional methods	3.4	0.9
IWB technology increases quality of teaching and learning because it integrates all forms of Digital media Tools	3.9	0.9
IWB technology provides new opportunities to enhance my teaching	3.9	0.8
IWB technology classroom make my students more attentive compared to tradition classroom	3.5	0.9
IWB technology increases the interaction between the students	3.7	0.9
Students were more enthusiastic in the IWB technology base classes	3.5	0.9
IWB technology provides me to organize my work and increase my productivity	3.6	1.1
Integration IWB technology is unnecessary for subject curriculum	3.0	1.0
Integration IWB technology into the curriculum enriches the teaching environment	3.4	0.9
IWB technology provides multisensory stimulation for the students	3.8	0.9
IWB technology provides student centered -learning process	3.6	0.8
IWB technology makes my student to participate in active learning	4.0	0.7
IWB technology involves us to understand concepts to post messages	3.2	1.1
Discussions during this IWB environment able find the faults in what I had previously believe to be right	3.7	1.4
I was able to apply the knowledge gained during the course to support my IWB environment based arguments	3.2	0.9

From above table of this study, KMO Measure of Sampling Adequacy and Bartlett's Test of Sphericity (BTS) were analyzed. The KMO value was found to be 0.758 which can be said to be a good value and BTS showed an approximately Chi-Square value of 238.840 ( $p < 0.000$ ), which meant that the correlation matrix of data for factor analysis is appropriately Table 4 lists the factors and their loadings for the 19 items representing the factors teachers considered when deciding to use technology in their classroom. Six factors with eigenvalues  $>1$  emerged from rating analysis, and accounted for 14.96%, 11.83%, 10.99%, 9.26%, 7.85%, and 7.00% of variance in data prior to rotation, for a total of 69.3%, with responses with loadings of  $>0.43$  on these factors. These factors were "Teaching with technology", "Belief about technology", "Collaborative Environment", "Students outcome" and "Reflective Thinking". Factor 1, teaching implementation, comprised five items for situational variables or obstacles teachers may face to using technology. Factor 2 teacher mindset or belief, had three items were dealing with general conceptions of instructional design to organize my work, compared to tradition classroom and curriculum development. Factor 3, Collaborative Environment, was extracted from three items describing the curriculum enriches, learners environment-reduces time and student centered process. Factor 4, Students outcome performances, had four items associated with teacher perspectives on Students performance in the IWB mediated learning environment. Factor 5, Reflective Thinking, had four items concerned with support, including understand concepts, apply the knowledge gained and finding their faults.

**Table 4: Rotated Component Matrix<sup>a</sup>**

	Component				
	1	2	3	4	5
<b>Teaching with Technology</b>					
IWB technology provides new opportunities to enhance my teaching	.853				
IWB technology increases quality of teaching and learning because it integrates all forms of Digital media Tools	.807				
IWB technology provides a good supplement to support teaching	.721				
Students were more enthusiastic in the IWB technology base classes	.695				
IWB technology made it easier for a teacher to review, explain, and summarize the subject	.603				
<b>Belief about Technology</b>					
IWB technology provides me to organize my work and increase my productivity		.869			
IWB technology classroom make my students more attentive compared to tradition classroom		.749			
Integration of IWB technology into the curriculum results great improvement in learning over the traditional methods		.635			
<b>Collaborative Environment</b>					
Integration IWB technology into the curriculum enriches the teaching environment			.858		
IWB technology reduces time i spend in preparation of the resource material			.624		
IWB technology provides student centered -learning process			.591		
<b>Students Outcome</b>					
IWB technology makes my student to participate in active learning				.896	
IWB technology increases the interaction between the students				.649	
IWB technology provides multisensory stimulation for the students				.611	
Integration IWB technology is unnecessary for subject curriculum				.576	

Table 4: Contd.,					
Reflective Thinking					
IWB technology involves us to understand concepts to post messages					.786
Discussions during this IWB environment able find the faults in what I had previously believed to be right					.659
I was able to apply the knowledge gained during the course to support my IWB environment based arguments					.572

## CONCLUSIONS

In the present article, we have studied about school infrastructure - teacher usage level and Interactive whiteboard mediated instructional environment the study found that that digital project and desktop computer were provided to all teachers for teaching process. The effective use of IWB technology as to be embedded on teacher pedagogy perception and school infrastructure place a vile role for the development education as - "Teaching with technology", "Belief about technology", "Collaborative Environment, "Students outcome" and "Reflective Thinking". Curriculum knowledge, pedagogy and learning. It clearly know that IWB technology has the capacity to increased pace for learner and teacher to take use of it, the design of texts needs to consider when is in the interest of teachers and learners to take advantage of this facility and when It is not.

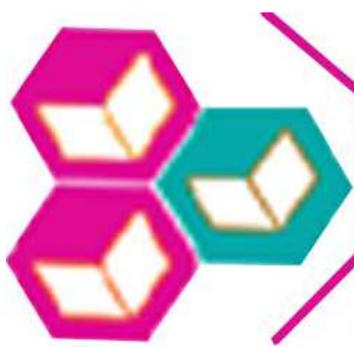
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## REFERENCES

1. Brian, L and Richard C. (2013). school ICT infrastructure requirements for teaching computing A Computing at School (CAS) Whitepaper.
2. Burnip, L. (2006). ICT mediated study and teachers: Do they have access to the infrastructure? *Australasian Journal of Educational Technology*, 22(3), 355-374. <http://www.ascilite.org.au/ajet/ajet22/burnip.html>.
3. Heather J. Smith, Steve Higgins, Kate Wall & Jen Miller (2005); Interactive whiteboards: boon or bandwagon? A critical review of the literature ; *Journal of Computer Assisted Learning* 21, pp 91–101
4. Hernandez-Ramos, P. (2005). If not here, where? Understanding teachers' use of technology in Silicon Valley Schools. *Journal of Research on Technology in Education*, 38(1), 39-64.
5. Kennewell, Steve and Beauchamp, Gary (2007); The features of interactive whiteboards and their influence on learning', *Learning, Media and Technology*, 32:3, 227 — 241 DOI: 10.1080/17439880701511073.
6. L. Incantalupo, R. Koul & D.F. Treagust (2013); Measuring Student Attitude and Knowledge in Technology-Rich Biology Classrooms; *Journal for Science and Educational Technology* 23:98–107. DOI 10.1007/s10956-013-9453-9.
7. Marc R. Prensky (2010).Teaching Digital Natives: Partnering for Real Learning by Marc R. Prensky p10-19
8. Naidu, S. (2002). Designing and evaluating instruction for e-learning. In P.L. Rogers (Ed), *Designing instruction for technology-enhanced learning* (pp. 134-159). Hershey, PA: IRM Press.

9. Pei-Chen Sun, Hsing Kenny Cheng (2007); The design of instructional multimedia in e-Learning: A Media Richness Theory-based approach; Computers & Education 49, 662–676.
10. Steve Kennewell & Gary Beauchamp (2007) The features of interactive whiteboards and their influence on learning, Learning, Media and Technology, 32:3, 227-241. <http://dx.doi.org/10.1080/17439880701511073>



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