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Original Paper

Teachers Practice of Interactive White Board *Use*

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Abstract

The main objective of this study was to investigate Teachers practice of using interactive white board in private primary school of Diamond Academy in Yeka sub-city, Addis Ababa. Using descriptive research design, 75 teachers and 2 school directors of Diamond Academy were selected using availability sampling. Data was collected using questionnaires and interview. The quantitative data was analyzed using SPSS while the qualitative data were analyzed in a narrative way. The study findings revealed that the factors that hinder teachers from using the interactive white board are lack of technical support for teachers and absences of training in using interactive white boards. The results of this research suggest that the school needs to provide technical support for teachers and increase the number of technicians. Applied trainings from experts in using interactive white boards should be provided for teachers.

Keywords

Interactive white board, practice in using of IWBs

1. Introduction

Technological tools available to teachers grow every year (Lenhart, Madden, & Hitlin, 2005). Educators do this partly because they are aware that today's students are growing up as part of a global society that is connected by computers and the Internet. This new and rapidly changing environment has the potential of giving students the opportunity to develop their information gathering and analyzing skills, work collaboratively, share and publish their ideas, and most importantly, learn from one another. Interactive white boards afford educators opportunities, but unless properly implemented, these tools will do little to change the way we teach and learn (Cuban, 2001).

In Ethiopia, schools need an increasing pressure to use instructional technologies in imparting knowledge and skills needed in the 21st century. Previous research has shown that the main reasons for the limited use of all the features of the IWB for the teacher are like using technology, time and money

(Bidaki & Mobasheri, 2013; Kennisnet, 2008). Prior research also found that these barriers are most crucial for the integration of ICT in education. When there is no internet or an IWB that is not working properly the teacher cannot work with ICT. However, when these barriers are resolved there are still some other barriers of importance for the right use of ICT, including the IWB. Those are when it comes to the use of the IWB, like knowledge, attitude and beliefs (Bidaki & Mobasheri, 2013; Turel & Johnson, 2012; Kennisnet, 2010a; Bingimlas, 2009).

According to the literature about these barriers and IWB use, teachers need to have a positive attitude towards the IWB, have the appropriate technical knowledge and skills, and need to combine them with the appropriate content and pedagogical knowledge to be able to use the IWB in a good manner (Beauchamp & Kennewell, 2013; Kennisnet, 2013; Sweeney, 2013; van Laer, Beauchamp, & Colpaert, 2012; Kennisnet, 2010a).

In consideration of these basic premises although smart board technologies are installed in each classrooms of Diamond Academy elementary school, and there is also an internet access provided for the teachers in each department, to what extent these Interactive White boards are used to support the teaching learning process and to what extent teachers use the available tool to achieve the intended positive outcome on the students with the fact that the necessary installations are available in the classrooms they attend to.

The IWB can enrich classroom instruction, for example by supporting the instruction of the teacher with images, sounds, and videos and let the teacher save digital lessons (Kennisnet, 2011). The added value of the IWB for education is: (a) more vivid presentations, (b) clear organization of resources, (c) motivated pupils, (d) more interaction, (e) more insight in the learning process with voting machines, and (f) more collaborative learning (Kennisnet, 2010a).

However, the added value can only be achieved when teachers use the IWB the right way, and research states that this is often not the case (Beauchamp & Kennewell, 2013; Bidaki & Mobasheri, 2013). To achieve a positive influence on students' learning process and achievements with the help of the IWB, an interactive school culture is needed (Digregorio & Sobel-Lojeski, 2010). Teachers have to stop seeing the IWB as a set of tools which substitutes or supplements traditional teaching resources and start seeing the IWB as an aid to orchestration of the classroom. This means that the teacher has to arrange, organize or build features of the classroom (including the resources on the IWB) in such a way that they are appropriate for their pupils' characteristics, just like with other teaching materials. And the teacher continuously manipulates features of the classroom in response to students' actions (Beauchamp & Kennewell, 2013).

So this study aims to investigate if the Interactive white boards in Diamond academy are used in a way that interacts or engages students to achieve the intended outcome. Investigating teachers' practical experience of using the interactive whiteboard, type of professional training teachers have, the type of technical support teachers have. Moreover, how technical support facilitated the use of the Smart Board inside the classrooms, teachers and students interaction in using the IWBs and if the use of the

interactive whiteboard engaged, motivated students, enriched their learning may help identify what factors hinders teachers from using IWBS to bring about the intended outcome. So this study aims to investigate teachers practice in the use of interactive white board in Diamond academy Addis Ababa a school located in Yeka sub city.

Hence, in order to achieve the purpose of this study five basic questions were formulated.

- To what extent the available interactive white board technology is utilized by elementary School of Diamond Academy teachers
- What type of professional training do teachers have in using the IWB?
- What type of technical support do teachers have?
- How do teachers and learners interact in using the IWB?
- What problems do teachers face when they use the IWB?

2. Methodology

2.1 Research Design

The study was conducted by using a descriptive survey design. Both quantitative and qualitative techniques in collecting and analyzing data were used to describe Teachers practice of using Interactive White Boards in the teaching and learning and the challenges teachers experience in the use of interactive white board in elementary school in Diamond Academy

2.2 Target Population

Total population sampling was used in this study because of its manageable size. The target population for this study comprised of all teachers from the total population of 75 elementary teachers and 2 principals in Diamond Academy.

2.3 Sampling Technique

The researcher used purposive sampling to pick the targeted population that was used in the study. Accordingly the researcher targeted 75 teachers and 2 principals were part of the study. Thus the researcher gathers information from those who are available and who fully represent the targeted population

2.4 Source of Data and Instruments

Primary data pertinent to the study was collected through questionnaire and interview. Secondary data was obtained through the analysis of published document sources

The instrument of data collection for the research was a questionnaire consisting of twenty six statements besides a semi-structured interview for the school's principals. Totally 2 principals were taken.

3. Results and Discussions

Out of the total respondents of the study, the majority (n=48, 64%) of them were males and the remaining (n=27, 36%) were female respondents. The age of the majority of these respondents' range

between 31-40 years while most of the respondents had first degree in their qualifications. The work experiences of the majority of respondents' range 6- 21 years and above.

The interviews conducted with the principals had the following outcome. Two of the principals had greater than five years of experience as principals in different schools.

School relation to utilization of Interactive white board

According to the principals with the school relation to utilization of Interactive white board Interactive white board is installed in every classes and internet service is also provided for the teachers to use different resources that are useful for their teaching.

The role of teachers in utilization in Interactive white board

The principals had common response on the role of teachers in utilization in Interactive white board that though the school is well equipped with the IWB technology teachers use is not satisfactory. Most of the teachers' use the tool merely as a projector but the tool's use is more than that if properly applied it can bring a miraculous effect on the students' achievement and it can create a highly interactive and motivating environment for the students.

Challenges that negatively affected utilization of interactive white board

The principals also noted that some of the challenges that negatively affected utilization of interactive white board are the training on the IWB usage is not enough because it is not provided by expertise rather by teachers who are experienced and also the teacher attitude towards the IWB use is not satisfying.

What are ways the school could provide better support?

The principals said that the school should appoint personnel who can provide better technical and pedagogical support to promote effective teaching and learning in relation with the use of the IWB for teachers.

What are the major challenges that negatively affect utilization of interactive white board technology in your school?

The principals noted that the major challenges that negatively affect utilization of interactive white board technology in the school are during supervision most teachers still use the teacher centered method of teaching and use the tool as the traditional white board and do not engage students in to the lesson with the help of this interactive tool.

What possible measures should be taken to avoid such challenges?

According to the principals to avoid challenges possible measures should be taken, like teachers should be given better pedagogical and technical training on how to use the interactive white board effectively and bring the intended outcome on students

Table 1. Availability and Use of Interactive White board

No	Items		Rating						
			5	**4**	**3**	**2**	**1**	**Total**	Mean
1	I use the smart board only as a projector for teaching.	#	28	30	2	12	3	75	3.9
		%	37.3	40	2.7	16	4	100	
2	I am comfortable using the IWB	#	18	12	-	27	18	75	2.8
		%	24	16	-	36	24	100	
3	I use good IWB resources in my daily lesson.	#	13	15	3	25	19	75	2.7
		%	17.3	20	4	33.3	25.3	100	
4	I sometimes struggle to manage the smart board.	#	45	15	-	8	7	75	4.1
		%	60	20	-	10.7	9.3	100	
5	With IWBs I make my teaching appear up to date.	#	9	6	2	38	20	75	2.3
		%	12	8	2.7	50.7	26.7	100	
6	My lessons are better prepared and more organized when I use an IWB.	#	40	32	-	2	1	75	4.4
		%	53.3	42.7	-	2.7	1.3	100	
7	I teach just the same with or without an IWB.	#	30	32	-	10	3	75	2.0
		%	40	42.7	-	13.3	4	100	
8	I prepare my lesson with flipcharts to be displayed on the IWB.	#	9	13	2	24	27	75	2.4

Table 1 shows respondents response on teachers' practical experience of using the Interactive White Boards 37.3% of the teachers strongly agreed that teachers use the smart board only as a projector for teaching, while 40% agreed, 2.7% were neutral while 16% disagreed and 4% strongly disagreed with the mean value of 3.9 majority of teachers agreed they use the IWBs only as a projector.

For item 2 of table 1 Teachers use good IWB resources in their daily lesson; 17.3% strongly agreed, 20% agreed, 4% were neutral while 33.3% disagreed and 25.3% strongly disagreed the mean value for this item is 2.7 which is in moderate range.

For item 3 of table 1 Teachers are comfortable in using the IWBs; 24% strongly agreed, 16% agreed, none were neutral while 36% disagreed and 24% strongly disagreed the mean value for this item is 2.8 which is in moderate range.

For item 4 of table 1 Teachers sometimes struggle to manage the smart board; 60% strongly agreed, 20% agreed, none were neutral while 10.7% disagreed and 9.3% strongly disagreed, majority of the respondents agreed that teachers have sometimes difficulty in managing the smart board with the mean value of 4.1.

For item 5 of table 1 With IWBs teachers make their teaching appear up to date; 12% strongly agreed, 8% agreed, 2.7% were neutral while 50.7% disagreed and 26.7% strongly disagreed the response rate

for this item was low with mean value of 2.3.

For item 6 of table 1 Teachers lessons are better prepared and more organized when using an IWB; 53.3 % strongly agreed, 42.7% agreed, none were neutral while 2.7% disagreed and 1.3% strongly disagreed, majority of teachers find their lesson is more organized and well prepared when they use the IWBs with the mean value of 4.4.

For item 7 of table 1 Majority of teachers with mean value of 4.0 believe teaching with or without IWBs is just the same 40% strongly agreed, 42.7% agreed, none were neutral, 13.3 disagreed and 4 strongly disagreed.

For item 8 of table 1 Teachers prepare lesson with flipcharts to be displayed on the IWB, respondents response was low with mean value of 2.4,12 % strongly agreed, 17.3% agreed, 2.7% were neutral while 32% disagreed and 36% strongly disagreed.

Table 2. The Nature of Professional Training Teachers Have

No	Items		Rating						
			5	**4**	**3**	**2**	**1**	**Total**	Mean
1	The initial training teachers received on IWB use in to teaching is inadequate.	**#**	30	42	-	2	1	75	4.3
		%	40	56	-	2.7	1.3	100	
2	There is no in service training on how to integrate smart board in to teaching.	**#**	20	50	-	3	2	75	4.1
		%	26.7	66.7	--	4	2.7	100	
3	There is no professional development program for teachers to upgrade their skills of using computer	**#**	31	42	1	-	1	75	4.4
3		**%**	41.3	56	1.3	-	1.3	100	
4	There is no training on technical skills for teachers.	**#**	20	52	-	3	-	75	4.2
		%	26.7	69.3	-	4	-	100	

Table 2 shows 40% of the teachers strongly agreed that The initial training teachers received on IWB use in to teaching is inadequate, while 56% agreed, none were neutral while 2.7% disagreed and 1.3% strongly disagreed majority of teachers agreed with the mean value of 4.3.

Table 2 item 2, 26.7% of teachers strongly agreed that there is no in service training on how to integrate smart board in to teaching, 66.7 % agreed, none were neutral while 4% disagreed and 2.7% strongly disagreed majority of teachers agreed with the mean value of 4.3 on this item too.

Table 2 item 3, Majority of teachers with the mean value of 4.4 revealed that there is no professional development program for teachers to upgrade their skills of using computer;41.3% strongly agreed, 56% agreed, 1.3% were neutral while none disagreed and 1.3% strongly disagreed.

Table 2 item 4, Majority of respondents agree with the mean value of 4.2 that there is no training on technical skills for teachers; 26.7% strongly agreed 69.3 % agreed, none were neutral while 4% disagreed and none strongly disagreed.

Table 3. Technical Support for Teachers

No	Items		Rating						
			5	**4**	**3**	**2**	**1**	**Total**	Mean
1	I can solve more common technical difficulties when they occur.	**#**	10	13	-	32	20	75	2.5
		%	13.3	17.3	-	42.7	26.7	100	
2	In terms of numbers technicians are not enough to deal with all classroom demands	**#**	30	45	-	-	-	75	4.4
		%	40	60	--	-	-	100	
3	Technical support is not helpful to give technical in service training on smart board for teachers	**#**	29	43	-	2	1	75	4.3
		%	38.7	57.3	-	2.7	1.3	100	
4	When something goes wrong with an IWB I can easily get help to resolve it	**#**	3	4	3	40	25	75	2.0
		%	4	5.3	4	53.3	33.3	100	

Table 3 shows the teacher participants response on the technical support teachers have

On Table 3 item 1, 13.3% respondents strongly agreed that they can solve more common technical difficulties when they occur, 17.3% agreed, none were neutral while 42.7% disagreed and 26.7% strongly disagreed response rate for this item was moderate with the mean value of 2.5.

Table 3 item 2, Majority of teachers responded numbers of technicians are not enough to deal with all classroom demands with mean value of 4.4, 40% strongly agreed, 60% agreed, none were neutral, none disagreed and none strongly disagreed.

Table 3 item 3, Majority of respondents revealed Technical support is not helpful to give technical in service training on smart board for teachers with mean value of 4.3; 38.7% strongly agreed, 57.3 % agreed, none were neutral while 2.7% disagreed and 1.3% strongly disagreed.

Table 3 item 4, Teachers respond with low mean value 2.0 for the item when something goes wrong with an IWB I can easily get help to resolve it; 4% strongly agreed, 5.3% agreed, 4% were neutral while 53.3% disagreed and 33.3% strongly disagree.

Table 4. Role of the IWB

No	Items		Rating						
			5	**4**	**3**	**2**	**1**	**Total**	Mean
1	I use the smart board in a way that engages my students	**#**	3	10	4	35	23	75	2.1
		%	4	13.3	5.3	46.7	30.7	100	
2	I never let students use smart board effectively in their learning	**#**	14	52	-	5	4	75	3.9
		%	18.7	69.3	--	6.7	5.3	100	
3	My students attention span increases because of my usage of IWBs	**#**	13	10	2	30	20	75	2.5
		%	17.3	13.3	2.7	40	26.7	100	
4	My lessons with the IWB are so attractive, students concentrate better	**#**	4	10	-	38	23	75	2.1
		%	5.3	13.3	-	40	26.7	100	
5	I often give chance for my students to get involved in the lesson with the IWB.	**#**	3	5	1	40	26	75	1.9
		%	4	6.7	1.3	53.3	34.7	100	

Table 4 shows respondents response on teachers and students interaction in using the IWBs.

Table 4 item 1, The response rate for using the interactive board to engage students was low with mean value of 2.1 that 13.3% of the respondents strongly agreed that they use the smart board in a way that engages their students, while 17.3% agreed, none were neutral while 42.7 % disagreed and 26.7% strongly disagreed.

Table 4 item 2, Majority of teachers agreed that they never let their students use the smart board with mean value of 3.9 as 40% of teachers participants strongly agreed that they never let students use smart board effectively in their learning, 60% agreed, none were neutral none disagreed and none strongly disagreed.

Table 4 item 3, My students attention span increases because of my usage of IWBs was moderate with mean value of 2.5, 17.3% of respondents strongly agreed that because of their usage of IWBs their students attention span increases, 13.3% agreed, 2.7 were neutral while 40% disagreed and 26.7% strongly disagreed.

Table 4 item 4, My lessons with the IWB are so attractive, students concentrate better; 5.3% strongly agreed, 13.3% agreed, none were neutral while 50.7% disagreed and 30.7% strongly disagreed.

For Table 4 item 5 The respondents response for I often give chance for my students to get involved in the lesson with the IWB was very low with mean value of 1.9; 4% strongly agreed, 6.7% agreed, 1.3% were neutral while 53.3% disagreed and 34.7% strongly disagreed.

Table 5. Problems Teachers Face when They Use the IWB

No	Items		Rating						
			5	4	3	2	1	Total	Mean
1	I don't have confidence in my ability to use the IWBs	#	20	30	-	20	5	75	3.5
		%	26.7	40	-	26.7	6.7	100	
2	There is difficulty in managing the students while applying such technologies	#	34	25	-	7	9	75	3.9
		%	45.3	33.3	-	9.3	12	100	
3	I fail to see any advantage in working on the IWB	#	33	28	3	5	6	75	4.0
		%	44	37.3	4	6.7	8	100	
4	My skill level is not much sufficient to use the smart board effectively	#	28	37	-	8	2	75	4.1
		%	37.3	49.3	-	10.6	2.7	100	
5	I have limited time to search for resources to use with the IWB.	#	49	23	-	2	1	75	4.6
		%	65.3	30.7	-	2.7	1.3	100	

Table 5 shows respondents' response on problems teachers face when they use the IWB.

Table 5item 1, With the mean value of 3.5 majority of teachers agreed that they lack confidence in their ability of using IWBs 26.7% of the respondents strongly agreed that they don't have confidence in their ability to use the IWBs, while 40% agreed, none were neutral while 26.7 % disagreed and 6.7% strongly disagreed.

Table 5 item 2, With high mean value of 3.9 teachers revealed that they have difficulty in managing their students while using IWBs 45.3% of teachers participants strongly agreed that there is difficulty in managing the students while applying such technologies,33.3% agreed, none were neutral, 9.3% disagreed and 12% strongly disagreed.

Table 5 item 3, Majority of teachers with mean value of 4.0 respond that they fail to see any advantage in working with the IWBs 44% of respondents strongly agreed that they fail to see any advantage in working on the IWB, 37.3% agreed, 4% were neutral while 6.7% disagreed and 8% strongly disagreed.

Table 5 item 4, Majority of teachers with mean value of 4.1 revealed that their skill level is not much sufficient to use the smart board effectively; 37.3% strongly agreed, 49.3% agreed, none were neutral while 10.6% disagreed and 2.7% strongly disagreed.

Table 5 item 5, The respondents respond that they have limited time to search for resources to use with the IWB was very high with mean value of 4.6; 65.3% strongly agreed30.7% agreed, none were neutral while 2.7% disagreed and 1.3% strongly disagreed.

The quantitative data of this study shows there is a big gap between teachers practice and pedagogical framework of the smart board. Teachers use the smart board only as a projector for teaching. Teachers do not feel comfortable in using IWB because of low competency and do not integrate good web resources for teaching in their lesson. Teachers sometimes struggle to manage the smart board when

problem occurs.

The study also revealed that teachers do not update their lesson by using the available technology. They have a feeling that whether they use the IWB or not their teaching is the same and are not aware of the value the IWB can add on their teaching. Teachers also do not use flip charts by using the available soft ware for the IWB to prepare and present their lesson in attractive and well organized manner.

The finding of the study also revealed that teachers are not able to solve even more common technical difficulties so they have to look for technicians and the technicians are not enough in number and it is not easy to get help and resolve the problem this in turn has its own negative impact on the teaching process.

The study shows that teachers do not engage the students in an interactive way using the IWB, so the students do not concentrate because of dull presentation and unattractive lesson delivery.

The study also shows the factors that hinders teachers from using the interactive white board to bring about the intended outcome on the students are teachers do not receive adequate initial training on IWB usage, there is no in service training on how to integrate smart board in to teaching, there is no professional development program for teachers to upgrade their skills of using computer with the IWB. Teachers also lack confidence, and have difficulty in managing the students while applying this technology because the lessons are not prepared in an attractive way to interact and involve the students in to the lesson. Teachers are not aware of the advantage of the IWB, Teachers skill level is not sufficient to use the smart board effectively and have workload and limited time to browse different webs to find resources that goes along with their lesson.

The qualitative data of this study, interview with the school's principals show that there is availability of interactive white board in the classrooms though they are not used by the teachers effectively to engage the students. The major possible challenge for this is because of lack of pedagogical and technical training by expertise.

The principals also suggested in order to bring the intended outcome on the students learning proper pedagogical and technical training on how to use the interactive white board should be provided for the teachers.

4. Conclusions and Implications

Based on the results of the finding of the study, the following conclusions have been drawn.

The finding of this study indicated that the major problems that hinders teachers from using the available interactive white boards in classrooms were using the smart board as a projector not engaging their students in to the lesson using this technology, teachers attitude towards using the interactive white board is that they do not make any difference in their teaching whether they use it or not, lack of preparation, not updating their lesson to match with the interactive white board, not browsing for resources that are helpful for their teaching were find to be the problems.

Therefore, the findings of the study show that the underlying causes for the overall problems were lack of adequate trainings and professional development programs provided for teachers by expertise.

In the light of these findings the researcher recommends that technology such as Interactive white board should be used in order to facilitate teaching and provide interactive learning opportunities for learners to learn. The responsibility is shared between school principals and teachers themselves to integrate the interactive white board in to teaching and learning process and reduces the challenges when they occur

☞ Teachers should upgrade their knowledge and skills of using technology to minimize challenges and support the pedagogic practices to improve learning

☞ Schools should develop capacity building schemes to teachers and actors in the education system.

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