

THE MEDIATION OF INTERACTIVE WHITE BOARDS IN EDUCATION: THE PERSPECTIVE OF DIFFERENT AGENTS IN MEXICO

1. Introduction

The arrival of Interactive White Boards (IWB's) as distinctive and prominent tools mediating educational activities in classrooms around the world is transforming our understanding about how learning and knowledge take place. Despite their potential for shaping educational practices in innovative ways, there is an urgent necessity for exploring and documenting the pedagogical uses of IWB's, as well as the implications for changing the organisation of classrooms and communities. In addition, it is essential to investigate the challenges faced by policy makers and designers of educational materials for fully integrating these tools in the curriculum. Finally, manufacturers and resellers require more information about how best they could improve the design of IWB's to meet the needs of students and teachers.

This report addresses these issues and provides answers to some of the main questions from the perspective of educators, pupils, parents, policy makers, resellers, and journalists in Mexico. The information presented here was collected using standardised protocols for interviews and questionnaires administered during the months of November and December, 2005, and January, 2006. The analysis and results are part of the joint research project funded and carried out by MirandaNet, Promethean, the Secretary of Education of Nuevo León, and the North Regional Committee for Cooperation with UNESCO. The research team was led by Dr. Juan Manuel Fernández in Monterrey, in coordination with a group of students from the 'Universidad de Monterrey' (UDEM). The results presented here are part of a wider study in collaboration with other three countries (United Kingdom, South Africa, and China) for comparative purposes.

2. Methodology

This report presents the results of an investigation exploring the perspective of different agents interacting with IWB's for different purposes: teaching, learning, designing educational resources, planning, reporting to the media, manufacturing, and selling. Each of these activities implies different views over the use of the same tool. In this respect, a set of questionnaires and protocols for interviewing were designed and administered to the following participants:

1. Students: 88 students from 3 different schools participated answering a 21-items questionnaire. (See Annex 1 for English and Spanish versions).
2. Teachers: 3 schoolteachers who are involved in the project since January 2004 replied to a 25-items questionnaire. (See Annex 2 for English and Spanish versions).
3. Parents: 9 mothers of the participating students replied to a 33-items questionnaire. (See Annex 3 for English and Spanish versions).
4. Teacher Managers: 1 teacher manager participating in the design and follow-up of the project answered a 28-items questionnaire. (See Annex 4 for English and Spanish versions).
5. Government Policy Makers: 2 top civil servants working in the local and federal Secretaries of Education were interviewed, 1 in Monterrey and 1 in Mexico City, following a 25-items protocol. (See Annex 5 for English and Spanish versions).
6. Journalists: 1 journalist was interviewed from a prominent local radio station in Monterrey, using a 20-items protocol. (See Annex 6 for English and Spanish versions).
7. Resellers: 2 major resellers of IWB's were interviewed using a 20-items questionnaire. (See Annex 7 for English and Spanish versions).

The analysis of results comprised the transcription, codification and translation of responses, grouping them into themes. Themes emerged from the topics explored by the design of the protocols and the variety of the responses provided by participants. The methodology follows a sociocultural and situated approach to the study of educational practices (e.g. Fernández, 2004; Green & Bloome, 1997; Gubrium & Holstein, 2002; Kvale, 1996; QSR International, 2002; Säljö, 1999; Spradley, 1979).

3. Students

The protocol of the questionnaire for students enquired about 6 main themes:

1. Use of computers
2. Use of IWB's
3. Arrangement of equipment in classrooms
4. Learning and IWB's
5. Software for IWB's
6. Other issues

The responses of students revealed different angles and categories in relation to each theme as described next.

3.1. Use of computers at home

In relation to the question “Who is good at computers within your family?”, 48 students informed that other peers such as cousins, friends, neighbours, and older siblings are the more competent. Similarly, 25 students reported that adults such as parents and uncles (and one grandmother), are the more experienced users within their families; 16 of them cited that they do not have computer at home or that there are no experienced computer users within their families. Finally, only 6 pupils reported that they are the more capable users.

Pupils answered to the questions “Do you have a computer at home? What kind of computer? Which room is it kept in?” in the following way: 13 out of 88 students have computer at home; 1 student has got 2 computers in his/her household; 1 Windows 2000, 4 desktop computers, and 7 laptops; 10 computers are kept in the bedroom and 3 of them in the living room.

Regarding the question “What kinds of computer activities do you most enjoy?”, 48 students cited they enjoyed most playing games; 22 students mainly enjoyed their participation in electronic chats, 16 students enjoyed doing homework and 15 typing and writing in the screen of an IWB. Likewise, 13 students referred to watching films, browsing encyclopaedias and listening to music as the most enjoyable multimedia activities. Finally, 9 students enjoyed drawing and painting, 8 students loved using Internet, and only 6 students referred to the use of computers for learning school subjects as the most enjoyable activity.

For the question “How much time do you use school computers during the week?”, the responses of the students implied that they were referring to the use of the IWB and the computer in their classroom. That is, many of the pupils referred to the schedule of attendance to school (i.e. “from 1 to 5 pm”) or to activities they do with the IWB (i.e. “for doing the [collective] school journal”) when mentioning the use of a computer. In fact, students do not use personal computers at school, except for the one that is installed for the use of the IWB. For instance, one of the students cited “There is not any ICT room at school; there are only 3 classrooms with computers, and the one in my classroom is used for 3 hours” [S27, AMC]. Another student reported: “We use the one in my classroom all day long” [S13, AMC].

3.2. Use of IWB's

All the 88 students responded “Yes” in relation to the question “Does your teacher use an ACTIVboard?”. More specifically, for the related question “What for?”, students offered information mainly in 3 categories: a) Enciclomedia, b) Multimedia, and c) Interactive tasks. For instance, in the category ‘Enciclomedia’ one student explained: “...[A]t school, we work with Enciclomedia, which are the textbooks we use in sixth grade, and we are also being taught many more things” [S8, LN]. Another student wrote: “To do things with school subjects and for solving Maths problems” [S23, LN]. Similarly, a third student reported, “Yes, we work in History and in all other subjects” [S18, SSM]. For the category ‘Multimedia’, students referred to the use of the IWB to see films, browsing maps, sing songs, drawing and painting, i.e. “We work with songs, and answer new questions” [S28, AMC]; “We see films and then we do worksheets” [S16, SSM]. For the category ‘Interactive tasks’, students referred to activities such as answering questions, writing on the IWB, doing exams, typing the collective classroom journal, investigating information, playing games, finding words, i.e. “We work, we write, we do lessons, we play games” [S26, AMC]; “We work finding things that are interesting, and we write” [S20, AMC].

Regarding the question “How frequently are they used?”, 44 students reported that the IWB is used for specific subjects, 32 cited that the use is for every lesson, 12 chose “at least once a day”, and only 2 “once a week”.

Considering the question “How are the ACTIVboards used?”, students chose 54 times the option “whole class”, 46 times the option “small group”, and 25 times the option “with individuals”. For the related questions, “Do you use them? How?”, all of the students cited that they have access to

the IWB, and that they use them in several ways: writing answers to questions, typing with the electronic keyboard, using the electronic pen, taking pictures, and for specific subjects. For instance, one student wrote “[We use the IWB] for doing the journal, for mathematics, Spanish, etc., for doing things required in our textbooks, and when we work in small groups” [S29, LN].

3.3. Arrangement of equipment in classrooms

In relation to the question “Where do you sit?”, 42 pupils reported that they both sit in front of the board and at their desks. Conversely, just 18 students chose the option “in front of the board”, and only 4 chose “at your desk”. For the question “Is your classroom different?”, all of the children reported changes in their educational settings. Thus, one student wrote “Yes, because the walls were painted. Before, we didn’t have Enciclomedia, and we used a green board, and we didn’t have fans, and now we’ve got Enciclomedia, and the classroom is for our exclusive use, and now the walls are green, and we have fans” [S15, LN]. Similarly, another student described: “Before we worked with a green board and we had to write with a chalk, and every time we erased something it was very messy. Now, we’ve got a computer and we don’t need to write with a chalk or to use the eraser. Now we write using the computer” [S8, LN].

For the question “Where is the board located?”, the vast majority of the students at schools “Leopoldo Naranjo” (24), and “Simón Salazar Mora” (26) described the board as located on another wall. On the other hand, the great majority of students at school Antonio Martínez de Castro (30) cited that the board is located at the side of the desk.

Finally, answering to the question “Can you reach the top of the board?”, students replied according to the following table:

	Simón Salazar	Antonio Martínez	Leopoldo Naranjo
Yes	6	17	8
No	22	15	20

Table 1. Can you reach the top of the board?

3.4. Learning and IWB's

Responding to the questions “Have the boards changed the way you learn?” and “What are the changes?”, 83 out of 88 students acknowledged the capacity of IWB's for changing the way they learn. Interestingly, from the 5 students that reported no changes in the way they learn, two of them cited that they were not sure, the third reported that he/she had never used it, and the fourth one considered that the problem was with the way it was used in his/her classroom, i.e. “No, because the teachers are teaching us in the same way”.

From the other 83 responses, it is also revealing the amount of mentions in relation to multimedia features such as showing films and videos (7), and using Enciclomedia (5). In addition, it is instructive the frequency of accounts referring to interactive aspects such as using the pen (7), and participating in the resolution of problems and questionnaires (6). Finally, it is worth mentioning the use of adjectives referring to ‘learning’ as “fast”, “fun”, “exciting”, and “interesting”; i.e. “Yes, now the lesson is more fun and you can watch videos of the [school] subjects” [S10, LN]; “Yes, I learn quickly; lessons are easier with the IWB” [S29, LN]; “I understand better the class, and I don't like to play truant” [S12, AMC].

Considering the question “What lesson do you like best using the ACTIVboard?” students replied in the following way:

	Simón Salazar	Antonio Martínez	Leopoldo Naranjo	Total
Science	9	9	24	42
English	-	29	-	29
History	8	4	9	21
Spanish	12	2	6	20
Mathematics	9	2	6	17
Geography	3	3	-	6

Table 2. What lesson do you like best using the ACTIVboard?

In relation to the question “Which activities do you like best using the ACTIVboard?”, the pupils responded in the following way:

	Simón Salazar	Antonio Martínez	Leopoldo Naranjo	Total
Writing on screen	22	-	-	22
Maths	2	10	9	21
Puzzles	-	14	-	14
Crosswords	-	10	-	10
Multimedia / Games	-	-	10	10
Word Search Puzzles	-	8	-	8
History	2	-	-	2

Table 3. Which activities do you like best using the ACTIVboard?

Thus, pupils wrote statements such as: “[I like] when I pass to the board to do additions and subtractions, also when we pass to play like the puzzle for completing the earth” [S8, SSM]; “[I like] the questionnaire because you have to look for the answers in the book” [S25, SSM].

3.5. Software for IWB's

The first question related to this theme is “Is there anything you can think of which you could not learn easily without an ACTIVboard?” Pupils replied in the following way:

	Simón Salazar	Antonio Martínez	Leopoldo Naranjo	Total
Mathematics	1	5	16	22
English	-	18	-	18
Following instructions, reading and writing	3	1	8	12
More difficult / boring / slow without IWB	3	-	7	10
Multimedia (video, music, pictures)	2	-	7	9
History	-	1	5	6
Interactive tasks	2	1	-	3
All subjects	2	-	-	2
Learn ICT	2	-	-	2
Spanish	1	-	1	2
Science	-	-	2	2
Erase	1	-	-	1
To practice for exams	1	-	-	1
Geography	-	1	-	1

Table 4. Is there anything you can think of which you could not learn easily without an ACTIVboard?

Pupils stated comments such as “We couldn’t see the videos that comes with Science [in Enciclomedia], and so we could say that we learn more things, for example, about the Homo Sapiens, about how wars took place, and many more things, and we also couldn’t learn because in Maths there are dices, and not in the [normal] green board” [S8, LN]; “I couldn’t learn more

Maths and other subjects, and I couldn't write the words as they should be" [S20, AMC]. "[I need the] contact with the computer, to learn how to use it" [S26, SSM].

Regarding the question "Can you suggest any new kinds of software for the ACTIVboard you would like the company to develop?" students reported the following information:

	Simón Salazar	Antonio Martínez	Leopoldo Naranjo	Total
Games (educational, arcade, drawing, Xbox, PlayStation, etc.)	4	22	2	28
Multimedia (videos, pictures, sound, music, etc.)	4	23	1	28
Setting up Internet	-	16	11	27
English (learning, translators to Spanish and vice versa)	2	4	6	12
Science (animals, anatomy, formulas, experiments, Chemistry)	4	-	5	9
Kitchen books / Recipes	7	-	-	7
Educational Cartoons	3	-	1	4
History (Mexican important events, famous characters)	3	-	1	4
Chat rooms		-	4	4
Sports (football, etc.)	3	-		3
Geography		-	3	3
UFO	1	-	1	2
Fire (precautions, firemen)	2	-	-	2
Weather	1	-	-	1
Friendship	1	-	-	1
Cleaning procedures	1	-	-	1
Mathematics	-	-	1	1
Setting up a printer	-	-	1	1

Table xx. Can you suggest any new kinds of software for the ACTIVboard you would like the company to develop?

They wrote sentences like "[I would like to have] Internet, because now we don't have Internet and in the Maths book there are activities that have to be carried out in Internet" [S8, LN]; "[I would like to] chat with people from other country and do Chemistry" [S29, LN]; "[I would like] a recipe book to learn how to do dishes from each state" [S2, SSM].

Regarding the question “Can you give me any examples of work that you have done that show how useful the ACTIVboard has been for learning?”, students replied with the following information:

	Simón Salazar	Antonio Martínez	Leopoldo Naranjo	Total
Writing the collective school diary	-	-	21	21
Questionnaires and writing exercises	14	1	-	15
A set of questions and answers in History	10	-	-	10
Use the library and drag and drop pictures	-	6	-	6
Maths lessons	-	2	2	4
Participating in games / interactive tasks	-	3	-	3
Science lessons	-	2	1	3
Geography lessons	-	3	-	3
Multimedia (browsing pages in books, drawing, watching videos)	-	3	-	3
Doing calculations in worksheets	-	1	-	1
English lessons	-	1	-	1
History lessons	-	-	1	1
Spanish lessons	-	-	1	1
Typing and writing	-	-	-	1

Table xx. Can you give me any examples of work that you have done that show how useful the ACTIVboard has been for learning?

They reported examples such as “The diary, because there we write everything we do during the day, all the new things that we’ve learned during the day” [S8, LN]; “We can drag and drop curtains with animals, we can drag and drop a clock, now I don’t have to use a ruler to measure in the IWB; [now] I can just drag it and move it [from the IWB] [S16, AMC]; “We did a practice in History, with questions” [S16, SSM].

3.6. Other issues

This last theme for students describes some of the more representative answers to the question “What else would you like to say?”.

At school “Simón Salazar”, one pupil wrote “I would like to have the projector a little bit behind from where it is located right now so that the projector light covers the whole screen, and another computer and a mouse for the computer, as the one we have now has broken, and many greetings to the other children in South Africa, England and China” [S1, SSM]. A second student cited “[I would like to] have IWB’s for all grades, because I know that there are IWB’s only in 4th, 5th and 6th grades, and the ones in 1st, 2nd, and 3rd they don’t have and it would be important for the classes” [S3, SSM]. A third student reported: “What I want is to use more the IWB, to have the

screen cleaner to see films, to do personal assignments in the computer, to use it, and to learn to type” [S4, SSM].

At school Antonio Martínez, one student cited “I like very much the IWB, so thanks to the company for giving us this IWB, because thanks to them we learn better the activities” [S4, AMC]. A second student wrote “The IWB teaches us a lot, and we do like it because it comes with music and games, and it teaches us faster” [S17, AMC]. One last student reported “I would like to have all the classrooms with IWB’s, so that all children can learn faster” [S27, AMC].

Finally, at school Leopoldo Naranjo, one student wrote “[I would like] to have speakers to be able to listen to the videos we watch with the IWB” [S22, LN]. A second student reported “[I would like to know] when are we going to get Internet and speakers, because we cannot listen to the videos and a monitor to be able to type without pulling our necks, and some replacement pens because sometimes they don’t work” [S9, LN]. A last student cited “We are going to do our best effort so that you don’t take the IWB out from us, so that we could learn easier and better, and I ask the owners of the IWB that please, please, don’t leave us without the IWB” [S11, LN].

4. Teachers

The protocol of the questionnaire for teachers enquired about 9 main themes:

1. Equipment
2. Use of IWB’s
3. Arrangement of equipment in classrooms
4. Software for IWB’s
5. Training and IWB’s
6. Teaching and IWB’s
7. Learning and IWB’s
8. School organization and IWB’s
9. Practice-based research and IWB’s

The responses of teachers revealed different angles and categories in relation to each theme as described next.

4.1. Equipment

The participating teachers reported that their respective schools have two makes of IWB's: Polyvision and Promethean. Altogether, the 3 schools have 8 IWB's, all fixed, and distributed in the following way:

School	Promethean IWB	Polyvision IWB	TOTAL
Simón Salazar	1	2	3
Antonio Martínez	1	2	3
Leopoldo Naranjo	1	1	2
TOTAL	3	5	8

Table xx. How many boards does your school have?

They mentioned that the Promethean IWB's are located in their classrooms, and they are used as part of the research project. The Polyvision IWB's have been installed in different classrooms as part of the equipment for the Enciclomedia project. Both IWB makes are used by the teachers and students during the week according to the planning or their academic agendas.

When asked about whether the ACTIVboards are value for money, one of them did not reply, the second mentioned s/he ignored the price, and the third one stated that "absolutely".

Finally, when they were enquired about what other peripherals they would recommend for teachers, two of them coincided in learning to use personal computers, i.e. "the daily use of Internet and computers in our homes" and "it is necessary to train teachers on the computer use; I recommend to use that and to get experience on this".

4.2. Use of IWB's

Two of the participating teachers reported they use IWB's for specific subjects, and one of them mentioned that the IWB is used in every lesson.

In relation to the question "In what ways do you use ACTIVboards?", the teachers responded in the following manner:

School	Small group	Whole class	With individuals	Student participation	Didactically	For video-conferencing
Simón Salazar	1	1	1	1	-	-
Antonio Martínez		1		1	-	-
Leopoldo Naranjo	1	1	1	1	1	
TOTAL	2	3	2	3	1	0

Table xx. In what ways do you use ACTIVboards?

4.3. Arrangement of equipment in classrooms

Regarding the question “Where do the students sit?”, one teacher mentioned that in front of the board, a second one reported that at their desks, and the third teacher chose the option “both”. Similarly, in relation to the arrangement of the furniture, two of the participating teachers mentioned changes in the layout of the chairs at their classroom. They grouped the chairs so that the pupils had the opportunity to work together in small groups. One of these teachers wrote:

“The students are in groups of four, I call them Work Tables, on this way they can look around the entire classroom. At the beginning, my desk was next to the board because the computer was on it. Now I have other desk and it is in front of the board.”

Considering where the board is located, one teacher reported that at the side of the desk, and two teachers stated that on another wall. Finally, replying to the question “Can the students reach the top of the board?”, two teachers answered negatively and one teacher wrote “some, not all, sometimes not even I reach it”.

4.4. Software for IWB's

The three teachers wrote that they both use commercial software and ACTIVstudio teacher-created materials for their IWB's. In addition, one of the teachers mentioned the use of Enciclomedia and another one the use of web-based materials adding “only in some occasions, for specific subjects”. Similarly, considering suggestions for new kinds of software for the ACTIVboard, only one teacher mentioned s/he would like to have software for teaching English as a Second Language (ESL).

4.5. Training and IWB's

The three teachers mentioned that they were trained by the company, and one of them mentioned the training help of a colleague. Similarly, the three teachers mentioned they have enjoyed the experience of meeting with colleagues and sharing ideas. For instance, one of them wrote:

“We had the opportunity to share experiences, questions and doubts with teachers from different countries. I consider that it is a good feedback.”

Another teacher stated:

“The truth [is] that I really learned all the functions (or the majority of them) until Georgia visited us in our school and explained with teacher Olivia the majority of the tools of the ACTIVstudio, in the other seminars organized out of

the country we can learn more about the pedagogic techniques that different colleagues of different countries apply to develop and consolidate a global citizenship.”

Nevertheless, they also mentioned some things they liked least. For instance, one of them wrote that “it was a short training and it was also a little difficult because we did not have the equipment yet”. Another teacher reported:

“About the seminars carried out overseas, my great barrier is not having the full mastery of the language in which the training was given, which I like it very much, but I know I’m not 100% bilingual.”

4.6. Teaching and IWB’s

Regarding the ways in which the teachers consider IWB’s have changed the way they teach, one of them reported:

“It makes my job easier. All the great materials that I can use in an instant make my class more interesting.”

A second teacher wrote:

“First I consider students show enough motivation on their classes. All the time they ask if we are going to use the whiteboard. They like to write on the WORD SOFTWARE and show their texts. I plan to use this teacher tool on this way, in to increase the writing learning process and then to increase the history learning process.”

They were more conservative when they replied to the question “Is there anything you can think of which you could not teach easily without an ACTIVboard?” For instance, one teacher stated:

“I think that it is a good teacher tool, but it is not necessary to teach everything. It really helps in our teaching ways because is something new.”

Similarly, another teacher wrote:

“No, only that by the ACTIVboards we are stimulating the 5 learning channels of the children (not focusing too much in the tact), by the way I develop from abstract thinking, to a critic thinking, analytic, etc.”

4.7. Learning and IWB's

Enquiring about the ways in which students have transformed their learning by using IWB's, one of the teachers stated:

“Every lesson or class given with the IWB keeps the students focus on class. They think they are playing, but they are actually learning.”

Another teacher mentioned that “...they use everyone (or the majority) of their learning channels”, and the third teacher wrote that students “share and show attitudes like respect, tolerance, they are cooperative and sympathetic towards the others”.

When the teachers were asked about giving examples of the pupil's work in relation to the use of IWB's, teachers gave descriptions such as the following:

“We are using it for learning to write. The students write their experiences or paragraphs [on the IWB], and the rest of the group give their opinions and help to correct the orthography. They like to write on the board or computer.”

“In every class we can use many kinds of tools making the class interesting and funnier.”

“Yes, for example I think that my students have been more close to technology, which nowadays it's in every educative aspect, they themselves create their own Flip Charts to give a class in front of the group, etc.”

Lastly, when teachers were enquired about any measured change in the attainment of pupils, one of the teachers mentioned that s/he had not been able to work on that aspect because of the short period s/he had been able to work with the IWB. Another teacher asserted that the IWB has been useful in “keeping the attention of everyone”. Lastly, the third teacher stated:

“Maybe the quantitative change is not formidable or spectacular. They have improved about one point or two; but in a qualitative way the changes are tangible, they out in the open.”

Strategies for measuring students' attainment included: grades improvement, individual and collective participation, and everyday activities.

4.8. School organization and IWB's

The questionnaire examined the impact of IWB's in changing the organisation of schools, either in the way teachers and colleagues have access to this tool, but also about the attitudes of the

head teacher and fellows about the research project and the design of educational policy for the school.

More specifically, when teachers were inquired about the attitudes of the senior management towards the use of the ACTIVboard, there were mixed opinions. On the one hand, one of the teachers revealed insufficient involvement from her/his head teacher:

“My principal [head teacher] is not involved enough, I think that she is more interested on other school needs. Now we have more students so our needs are more.”

On the other hand, the two remaining teachers reported a more positive approach in their schools:

“They see it as a good opportunity for the children to learn in a very different way. They really like it.”

“What I can tell you about this aspect is that I have the luck to have a nice head teacher who is always ready to cooperate, to renew, to use different learning techniques, which can render into the development of the students. [In turn, the students], are and will continue being our main motivation for improving and facing the challenges that appear day after day.”

Similarly, when teachers were asked about the attitude of their colleagues towards them and the use of the IWB, there was one unenthusiastic scenario and two favourable states of affairs. In relation to the former, the teacher stated:

“All of them are new teachers on my school. And they do not know about the project. They have few information about it. My principal [head teacher] has not had the opportunity to give me a time to share information with the rest of teachers.”

Regarding the latter type of circumstances, the teachers expressed:

“[The attitude of my colleagues is] favourable. In the school we are 6 teachers, 4 female and 2 male teachers; we are all involved in the use of the two electronic boards.”

“They are interested. They would like to have one. They consider it is new technology to learn. They see it as the “new future learning.”

Lastly, the teacher who has been consistent in reporting about his/her inauspicious situation had the following point of view about the future of IWB's in education:

“I do not see a good future for this in my school. Our needs are others. As a teacher is difficult to work there because the school is far away from my home and it is expensive. And I think that the rest of the teachers are on the same situation. To get a real progress it is necessary to help and motivate teachers first, then to cover all school needs and to create a good plan to develop the use of whiteboards.”

Another teacher was also sceptical, asserting:

“I don’t know. The future is always uncertain; the same members of the staff will not always be in this school, in particular the teachers who handle these tools on a daily basis, so I cannot guarantee absolutely anything.”

The third teacher was slightly more positive:

“It will be functioning in every school because it contains a lot of materials to use. First of all the teacher needs to have a PC at his/her house in order to create new flipcharts. It’s almost impossible if you don’t have one.”

4.9. Practice-based research and IWB’s

Teachers were finally asked about the ways in which the practice-based research processes have helped them see themselves as professionals. Two of the teachers reported changes in their self-perception:

“Now I am studying a master degree and I am investigating about what happens with the use of ICT on primary schools. The opportunity to have an interactive whiteboard in my classroom was a motivation for me to study, learn, and investigate about this. I know that not all teachers have the opportunity to have this technology, so I feel as a professional teacher only because of this reason.”

“The way I used to teach before, and the new technology that I’m using now [has helped seeing me as a professional]. The practice within everyday [is the aspect that has been most useful]. It might be possible [that I will go on study].”

The third teacher only mentioned that s/he will go on study “depending on the economic situation that we face”.

Finally the three teachers mentioned that their work is shared on the web, in particular in the MirandaNet website and in the North Regional Committee for Cooperation with UNESCO (see http://www.cn.unesco.org.mx/seccion/index.php?id_seccion=16082005162035).

5. Parents

The protocol of the questionnaire for parents enquired about 9 main themes:

1. Equipment
2. Arrangement of equipment in classrooms
3. Use of IWB's
4. Software for IWB's
5. Training and IWB's
6. Teaching and IWB's
7. Learning and IWB's
8. School organization and IWB's
9. Practice-based research and IWB's

The responses of parents revealed different angles and categories in relation to each theme as described next.

5.1. Equipment

Parents identified the same amount of IWB's as teachers. That is, 3 IWB's for school "Simón Salazar", 3 for school "Antonio Martínez", and 2 for school "Leopoldo Naranjo". They also were congruent with the teachers' reply in relation to the place of the classroom where the IWB's were fixed. However, parents were not able to identify any brand or make when asked about this particular aspect.

At school Simón Salazar, decisions about where to install the IWB's were made by the head teacher on the grounds of "taking the best choice for the students". A parent from this school also reported: "well, the decisions are taken in the office of the head teacher and she is who decides, and the classrooms have been re-arranged; they put protectors in windows". At school Antonio Martínez, in a similar fashion, parents wrote that the decision about where to place the IWB was taken in relation to finding ways to improve the learning of children by attracting their attention. Finally, at school Leopoldo Naranjo, parents mentioned that they were just informed about where it was going to be located.

When asked whether ACTIVboards represent good value for money, all the parents agreed with this statement. They argued that it is important to improve the learning of students, although they were unsure about the actual price of IWB's.

Lastly, when enquired about what other ICT peripherals do they recommend for teachers, 6 of them mentioned that a personal computer would be very relevant both as a resource for students in their school and for their teachers in order to have the possibility to design resources for the IWB.

5.2. Arrangement of equipment in classrooms

Parents were consistent with the reply of teachers in relation to the place where the IWB's are located, and where the students sit. In addition, they all mentioned the changes that have had the arrangement of the furniture and accessories in classrooms. For instance, one mother mentioned:

“Yes, new curtains were installed in the classroom in order to avoid the entrance of light. A desk was specifically designated for the computer, and the students are seated differently so that they can be closer to the IWB.”

Another one wrote:

“Air conditioning was installed, blinds were fitted, walls were painted, and windows protectors were placed.”

Last, when enquired about whether the students could reach the top of the board. Six of them thought that students were able, i.e. “I guess that they do, they must be fitted to the students' height, so that they can reach”. Three of them thought the students did not reach the top, i.e. “I don't know, but I don't think so”.

5.3. Use of IWB's

Regarding the question “In what ways are the ACTIVboards used?” all of the parents chose the option “in specific classrooms”, two parents also chose “as a resource for teachers to share”, and one mother chose “for specific subjects too”.

Similarly, when they were enquired about the ways in which the IWB was used, all parents chose the option “whole class”, and two of them chose “didactically”.

5.4. Software for IWB's

Considering the question “What curriculum materials have been purchased or used for the boards?”, 4 parents chose commercial software, 2 of them ticked ACTIVstudio teacher-created materials and 2 of them mentioned the Enciclomedia.

Similarly, when they were asked about the software activities they like best using the ACTIVboard they highlighted multimedia features, i.e. “videos, and the interaction of the pupil with the technology”, “seeing images, browsing”, “drawing”.

In relation to the suggestions for new kinds of software that could be developed by the company, again multimedia software was the preferred option with 5 mentions, i.e. “programmes with sounds”. Other suggestions expressed included software for teaching English as a second language and programmes aimed to the treatment and discussion of family violence.

5.5. Training and IWB's

Parents were asked about whether they had participated in the training sessions for the use of IWB's. Only the mothers of school “Antonio Martínez” mentioned that they were invited to a special demonstrative session where they had the opportunity to interact with the IWB and to identify different features and resources of this tool for teaching lessons. Also, these parents highlighted the features they found most attractive for education, i.e. “it's easier to learn for children, they are more interested in learning; there was less distraction, there was more participation”.

5.6. Teaching and IWB's

When the parents were enquired about what they liked most of IWB's in terms of teaching, the 5 mothers attending the session at school “Antonio Martínez” stated that their favourite lesson was English, and one mother at school Simón Salazar reported that Geography was her favourite subject.

In relation to the question “Is there anything you can think of which teachers could not teach easily without an ACTIVboard?”, the 5 mothers enquired at school “Antonio Martínez”, expressed their view indicating that they would not think of the IWB as something indispensable for teaching and learning. For instance, they mentioned “there would not be much difference for the child that already like to attend school”, “it all depends on the teacher and the student”.

Regarding the question “How have ACTIVboards changed the way in which teachers teach?”, 7 mothers consider IWB’s have helped the teachers to reduce the time they spend on planning a lesson, as well as facilitating the presentation of didactic materials in multimedia. For instance, one mother stated:

“For them it’s a more supportive tool, because they do not prepare much their lessons, but only by using videos and images. For them is more comfortable, because they can get them from the Internet or I don’t know, so they can show these to the students.”

5.7. Learning and IWB’s

Parents were asked about examples of the learning of their children, 5 of the mothers mentioned the use of the IWB so that their offspring is learning English and also using the resources of the IWB as an encyclopaedia to find maps and information.

In addition, regarding the question “How have the ACTIVboards raised the pupils’ attainment?”, 7 parents highlighted motivation, participation and multimedia use as the main features that are part of the new attitudes and skills demonstrated by students since they started using the IWB. For example, they wrote: “Children are more interested in learning; grades have improved”, “Through the use of images, not only with talk but also with video and images, teachers are supporting students so that they can have a more concrete explanation”.

Parents reported that the measurement for this perceived improvement in the pupils’ attainment has been carried out through the comparison of grades, behaviour, participation, and the assessment of other products such as homework and answers in textbooks.

Parents considered that the ACTIVboards have changed the way in which students learn, so that they are more enthusiastic “to go and touch the screen”, “they wish to participate more”. In addition, they value the power of multimedia for learning in a different way, and experience alternative realities:

“For them it’s easier, it’s a little better, they are seeing images. Moreover, there are things that they don’t know, that they have only accessed through the IWB, such as places where they have never been to, or even imagined, and they keep this knowledge.”

5.8. School organization and IWB's

The questionnaire the parents' perceived attitude of teachers in relation to its affordances for teaching and learning. With 6 mentions, parents reported that teachers are more enthusiastic about teaching, enjoying more their role at schools. They also considered that teaching has become easier and efficient using the IWB as there are more resources available for planning the lesson and solving doubts of students.

In relation to the attitude of the head teacher and his/her office in relation to the project, all the parents expressed that they are aware of the contentment of the head teachers for having their school selected for this venture. Thus, head teachers are willing to help their staff and are hoping to have more boards for the other classrooms in their schools.

Parents also see a positive future for IWB's at schools, i.e. "In a near future, I see all classrooms with an IWB, and the teachers with more knowledge, more active". They would like to see the teachers progressing, and consider the teachers' attitude is positive, i.e. "The attitude they've got now is very good, they are valuing the support they have received so far". The challenges they see in the horizon for their progress are the lack of material resources to buy more ICT tools, and the training for ensuring that the IWB will be used efficiently.

5.9. Practice-based research and IWB's

Parents considered that the practice-based research processes help to improve the quality of teaching in different ways. First, they see it as an opportunity for teachers in order to have more qualified training. Second, they consider as a positive effect to have the opportunity of being supervised by a researcher because of the attention provided and the effort the teacher does in presenting him/herself as a capable and creative professional during the visits of the research team. For instance, one mother wrote, "teachers have improved because by knowing that they will receive visits, they try to be better and to provide the best possible teaching experience".

In contrast to this positive appreciation of the teachers' work at schools, only two of the parents knew that teachers had published work in the Internet. Alternatively, 7 parents mentioned the school newspaper and the IWB as media where they have learned about this project and the work that has been produced by teachers.

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Annex 1

Pupil questionnaire

Personal details

Name: _____ School: _____ Class: _____

Who is good at computers within your family?

Do you have a computer at home? What kind of computer? Which room is it kept in?

What kinds of computer activities do you most enjoy?

How much time do you use school computers during the week?

Does your teacher use an ACTIVboard?

What for?

How frequently are they used?					
Every lesson	At least once a day	For specific subjects	Once a week	Less than once a week	Never

If 'Never', thank you for your time.

How are the ACTIVboards used?			
Small group	Whole class	With individuals	Do you use them? How?

Where do you sit?		
In front of the board	At your desk	Both

Is your classroom different?

If it is, can you draw a diagram on the back of this paper?

Where is the board located?		
Behind the teacher's desk	At the side of the desk	On another wall

Can you reach the top of the board?

YES/NO

Have the boards changed the way you learn?

What are the changes?

What lesson do you like best using the ACTIVboard?

Which activities do you like best using the ACTIVboard?

(What do you think of the voting system?)

Is there anything you can think of which you could not learn easily without an ACTIVboard?

Can you suggest any new kinds of software for the ACTIVboard you would like the company to develop?

Can you give me any examples of work that you have done that show how useful the ACTIVboard has been for learning?

What else would you like to say?

Cuestionario de los estudiantes¹

Detalles Personales

Nombre:

Escuela:

Clase:

1. ¿Quién es bueno para las computadoras en tu familia?
2. ¿Tienes una computadora en casa? ¿Qué tipo de computadora es? ¿En qué habitación se encuentra?
3. ¿Qué tipos de actividades computacionales disfrutas más?
4. ¿Cuánto tiempo utilizas las computadoras de la escuela durante la semana?
5. ¿Tu maestra utiliza un ACTIVboard?
6. ¿Para qué?

7. ¿Qué tan frecuente es utilizado el Pizarrón Electrónico? (Selecciona una opción)					
Cada lección	Al menos una vez al día	Para temas específicos	Una vez por semana	Menos de una vez por semana	Nunca

Si seleccionaste "Nunca", gracias por tu tiempo.

8. ¿Cómo es utilizado el Pizarrón Electrónico?			
En pequeños grupos	Clase entera	Individualmente	¿Tú los utilizas? ¿Cómo?

9. ¿Dónde te sientas? (Selecciona una opción)		
En frente de la pizarra	En tu escritorio	Ambos

10. ¿Tu salón está diferente? Si lo esta, ¿podrías dibujar un diagrama al reverso de esta hoja?

11. ¿Dónde se encuentra el Pizarrón Electrónico? (Selecciona una opción)		
Atrás del escritorio del maestro	Al lado del escritorio	En otra pared

¹ Pupil questionnaire

12. ¿Puedes alcanzar la parte superior de la pizarra?	SI	NO
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13. ¿Han cambiado la manera en que aprendes los pizarrones electrónicos?

14. ¿Cuáles son los cambios?

15. ¿Qué lección te gusta más usando el pizarrón electrónico?

16. ¿Cuáles actividades te gustan más usando el pizarrón electrónico?

17. ¿Qué opinas del sistema de votación? (Sólo si es parte del equipo de tu clase)

18. ¿Hay algo en lo que puedas pensar que no puedas aprender fácilmente sin un ACTIVboard?

19. ¿Podrías sugerir algún tipo de software nuevo para el pizarrón electrónico que te gustaría que la compañía desarrollara?

20. ¿Podrías darme algún ejemplo de trabajo que hayas hecho que demuestre lo útil que el ACTIVboard ha sido para el aprendizaje?

21. ¿Qué más quisieras decir?

Annex 2

Teacher questionnaire

Personal details

Name: _____ School: _____ Position _____ Email address: _____

May we have permission to quote your answers? The replies will be anonymous.

How many boards does your school have?

What make?

Fixed Portable

If they are fixed, where are they located?

How frequently do you use them?					
Every lesson	At least once a day	For specific subjects	Once a week	Less than once a week	Never

If 'Never', thank you for your time.

In what ways do you use ACTIVboards?					
Small group	Whole class	With individuals	Student participation	Didactically	For video-conferencing

Where do the students sit?		
In front of the board	At their desks	Both

Has the classroom furniture been re-arranged since the board was installed?

If so, how? Please draw a plan of the changes you have made to illustrate your explanation or provide a digital picture

Where is the board located?		
Behind the teacher's desk	At the side of the desk	On another wall

Can the students reach the top of the board? YES/NO

What materials are used with the board? (Tick all that apply)		
Commercial software	Web-based materials	ACTIVstudio teacher-created materials

How were you trained to use your ACTIVboard?			
By the company	By education department advisers	By a colleague	I'm self-taught

What did you like best about that training?

What did you like least?

What lesson do you like giving best using the ACTIVboard?

Which software activities do you like best using the ACTIVboard?

(What do you think of the voting system?)

Is there anything you can think of which you could not teach easily without an ACTIVboard?

Can you suggest any new kinds of software for the ACTIVboard you would like the company to develop?

Can you give me any examples of students' work that show the usefulness of the ACTIVboard in learning?

How have the ACTIVboards raised the pupils' attainment?

How have you measured that attainment?

How have ACTIVboards changed the way in which you teach?

How have ACTIVboards changed the ways your students learn?

What is the attitude of your colleagues towards the use of ACTIVboards in teaching and learning?

What is the attitude of the senior management of the schools towards the ACTIVboard in teaching and learning policy in the school?

What do you think is the future of ACTIVboards in your school? How would you like to progress? What are the barriers to your progress?

Are the ACTIVboards value for money?

What other ICT peripherals do you recommend for teachers?

In what ways have practice-based research processes helped you to see yourself as a professional teacher? What aspect of this process has been most useful? Will you go on studying?

Is your work shared on the web and in publications? Where can we find it?

We need as many answers as possible from IWB users for this research. Can you suggest other teachers who may be willing to answer this questionnaire? How can I get in touch with them?

If you have any other comments please add them to the back of this sheet.

Cuestionario para Maestros²

Detalles personales

Nombre:

Escuela:

Posición:

Dirección electrónica (E-mail):

¿Podemos tener su permiso para citar sus respuestas? Las contestaciones serán anónimas.

1. ¿Cuántas pizarras tiene su escuela?

Fijos	Portátiles

2. ¿Qué marca?

3. Si son fijos, ¿dónde se encuentran?

4. ¿Qué tan frecuentemente los usa? (Seleccione una opción)					
Cada lección	Al menos una vez al día	Para temas específicos	Una vez por semana	Menos de una vez por semana	Nunca

Si seleccionó "Nunca", gracias por su tiempo.

5. ¿En qué maneras usa los ACTIVboards? (Seleccione las opciones relevantes)					
Grupo pequeño	Clase entera	Individualmente	Participación del estudiante	Didácticamente	Para videoconferencias

6. ¿Dónde se sientan los estudiantes? (Seleccione una opción)		
Al frente de la pizarra	En sus escritorios	Ambos

7. ¿Han sido reacomodados los muebles escolares desde que la pizarra fue instalada?

8. Si así fue, ¿cómo? Por favor dibuje un plan de los cambios que usted hizo para ilustrar su explicación o proporcione una foto digital.

9. ¿Dónde se encuentra la pizarra? (Seleccione una opción)		
Atrás del escritorio del maestro	Al lado del escritorio	En otra pared

² Teacher questionnaire

10. ¿Los estudiantes alcanzan la parte superior de la pizarra?	SI	NO
--	----	----

11. ¿Qué materiales son usados con la pizarra? (Señale todas las que aplican)			
Software comercial	Materiales basados en la Web	Materiales creados por los maestros en ACTIVstudio	Enciclomedia

12. ¿Cómo fue capacitado usted para usar su ACTIVboard? (Seleccione las opciones relevantes)			
Por la compañía	Por los asesores del departamento de educación	Por colegas	Auto-didacta

13. ¿Qué le gusto más de esa capacitación?

14. ¿Qué le gustó menos?

15. ¿Cuál lección le gusta más darla usando el ACTIVboard?

16. ¿Cuáles actividades del software le gustan más usando el ACTIVboard?

17. ¿Qué opina del sistema de votación? (Sólo si esta opción aplica)

18. ¿Hay algo en lo que usted pueda pensar que los maestros no puedan enseñar fácilmente sin un ACTIVboard?

19. ¿Podría sugerir algún tipo nuevo de software que le gustaría que la compañía desarrollara?

20. ¿Podría darme algún ejemplo de trabajo de estudiantes que demuestren la utilidad del ACTIVboard en el aprendizaje?

21. ¿Cómo han incrementado los ACTIVboards el desempeño de los alumnos?

22. ¿Cómo ha medido ese desempeño?
23. ¿En qué medida los ACTIVboards han cambiado la manera en que enseña?
24. ¿Cómo los ACTIVboards han cambiado las maneras en que sus estudiantes aprenden?
25. ¿Cuál es la actitud de sus colegas hacia el uso de los ACTIVboards en la enseñanza y aprendizaje?
26. ¿Cuál es la actitud de la dirección de las escuelas hacia el ACTIVboard en las políticas de enseñanza y aprendizaje de la escuela?
27. ¿Cuál cree que sea el futuro de los ACTIVboards en su escuela? ¿Cómo le gustaría que esto progresara? ¿Cuáles son las barreras para su progreso?
28. ¿Tienen los ACTIVboards una buena relación calidad-precio?
29. ¿Qué otra Tecnología de la Información y la Comunicación (TIC) secundaria recomienda para maestros?
30. ¿En qué manera los procesos de investigación basado en prácticas le han ayudado a verse como un(a) maestro(a) profesional? ¿Qué aspecto de este proceso ha sido más útil? ¿Seguiría usted estudiando?
31. ¿Su trabajo es compartido en la Web y en publicaciones? ¿Dónde los podemos encontrar?
32. Necesitamos todas las respuestas posibles de los usuarios de los Pizarrones Electrónicos Interactivos (PEI's) para esta investigación. ¿Podría sugerir otros maestros que estén dispuestos a contestar este cuestionario? ¿Cómo podemos establecer contacto con ellos?
33. Si tiene algunos otros comentarios por favor agréguelos al reverso de esta hoja.

Annex 3

Manager/Community Leader questionnaire

Personal details

Name:

School:

Email address:

Could you please complete this questionnaire by marking the appropriate response?

How many boards does your school have?

What makes?

Fixed Portable

If they are fixed, where are they located?

How were the location decisions made?

How are they used? (Please list all that apply)					
In specific classrooms	As a timetabled resource	As a resource that can be booked	For specific subjects	As a resource for teachers to share	Other (Please specify)

In what ways are the ACTIVboards used?					
Small group	Whole class	With individuals	Student participation	Didactically	For video-conferencing

Where do the students sit?		
In front of the board	At their desks	Both

Has the classroom furniture been re-arranged since the boards were installed?

If so, how? Please provide a diagram or a picture

Where are the boards located?		
Behind the teacher's desk	At the side of the desk	On another wall

Can the students reach the top of the board? YES/NO

What curriculum materials have been purchased or used for the boards? (Tick all that apply)		
Commercial software	Web-based materials	ACTIVstudio teacher-created materials

How did you arrange training to use the ACTIVboards?			
By the company	By education department advisers	By a member of staff	Staff taught themselves

What did the teachers like most about the training? What did they like least?

What lesson do they like giving best using the ACTIVboard?

Which software activities do they like best using the ACTIVboard?

(What do you think of the voting system?)

Is there anything you can think of which teachers could not teach easily without an ACTIVboard?

Can you suggest any new kinds of software for the ACTIVboard you would like the company to develop?

Can you give me any examples of students' or teachers' work that show the usefulness of the ACTIVboard in learning?

How have the ACTIVboards raised the pupils' attainment?

How have the teachers measured that attainment?

How have ACTIVboards changed the way in which you teach?

How have ACTIVboards changed the ways your students learn?

What is the attitude of the teachers towards the use of ACTIVboards in teaching and learning?

What is the attitude of the senior management of the schools towards the ACTIVboard in teaching and learning policy in the school?

What do you think is the future of ACTIVboards in school? How would you like teachers to progress? What are the barriers to progress?

Are the ACTIVboards value for money?

What other ICT peripherals do you recommend for teachers?

In what ways have practice-based research processes helped the classroom teachers to see themselves as professionals? What aspect of this process has been most useful? Will any of them go on studying?

Is any of the work shared on the web and in publications? Where can we find it?

We need as many answers as possible from IWB users for this research. Can you suggest other teachers who may be willing to answer this questionnaire? How can I get in touch with them?

If you have any other comments please add them to the back of this sheet.

Cuestionario Líder de la Comunidad de Padres de Familia³

Detalles Personales

Nombre:

Escuela:

Dirección electrónica (E-mail):

Por favor completar este cuestionario marcando la respuesta apropiada

1. ¿Cuántas pizarras tiene su escuela?
2. ¿Qué marca?
3. Si están fijos, ¿en dónde están ubicados?
4. ¿Cómo fueron tomadas las decisiones sobre la ubicación?

Fijos	Portátiles

5. ¿Cómo son usadas? (Por favor enumere todas las que aplican)					
En salones específicos	Como un recurso agendado en un calendario	Como un recurso que puede ser reservado	Para temas específicos	Como un recurso para compartirlo entre maestros	Otro (Por favor especifique)

6. ¿En qué maneras los ACTIVboards son usados? (Seleccione las opciones relevantes)					
Grupo pequeño	Clase entera	Individualmente	Participación del estudiante	Didácticamente	Para video-conferencias

7. ¿En dónde se sientan los alumnos? (Seleccione una opción)		
En frente de la pizarra	En sus escritorios	Ambos

8. ¿Han sido reacomodados los muebles escolares desde que los Pizarrones Electrónicos Interactivos (PEI's) fueron instalados?

9. Si así fue, ¿cómo? Por favor proporcione un diagrama o un dibujo

10. ¿Dónde se encuentran las pizarras? (Seleccione una opción)

³ Manager/Community Leader questionnaire

Atrás del escritorio del maestro	Al lado del escritorio	En otra pared

11. ¿Pueden los estudiantes alcanzar la parte superior de las pizarras?	SI	NO
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12. ¿Qué materiales curriculares han sido comprados o usados para las pizarras? (Señale todas las que aplican)			
Software comercial	Materiales basados en la Web	Materiales creados por maestros en el ACTIVstudio	Enciclomedia

13. ¿Participó usted en la capacitación para usar los ACTIVboards? (Seleccione las opciones relevantes)				
Por la compañía	Por los asesores del departamento de educación	Por un miembro del staff	El Staff se enseñó a si mismo	Otra

14. ¿Qué les gusto más a los maestros de la capacitación? ¿Qué les gustó menos?

15. ¿Qué lección les gusta más darla usando el ACTIVboard?

16. ¿Cuáles actividades del software les gusta más usando el ACTIVboard?

17. ¿Qué opina del sistema de votación? (Sólo si esta opción aplica)

18. ¿Hay algo en lo que usted pueda pensar que no pueda ser enseñado fácilmente sin un ACTIVboard?

19. ¿Podría sugerir algún tipo nuevo de software que le gustaría que la compañía desarrollara?

20. ¿Podría darme algún ejemplo de trabajo de estudiantes o maestros que demuestren la utilidad del ACTIVboard en el aprendizaje?

21. ¿Cómo incrementan los ACTIVboards el desempeño de los alumnos?

22. ¿Cómo han medido los maestros ese desempeño?
23. ¿Cómo han cambiado los ACTIVboards la manera en que enseña?
24. ¿Cómo han cambiado los ACTIVboards las maneras en que los estudiantes aprenden?
25. ¿Cuál es la actitud de los maestros hacia el uso de los ACTIVboards en la enseñanza y el aprendizaje?
26. ¿Cuál es la actitud de la dirección de las escuelas hacia el ACTIVboard en las políticas de enseñanza y el aprendizaje de la escuela?
27. ¿Cuál cree que sea el futuro de los ACTIVboards en la escuela? ¿Cómo le gustaría que los maestros progresaran? ¿Cuáles son las barreras para el progreso?
28. ¿Tienen los ACTIVboards una buena relación calidad-precio?
29. ¿Qué otra Tecnología de la Información y la Comunicación (TIC) secundaria recomienda para maestros?
30. ¿En qué maneras los procesos de investigación basados en prácticas han ayudado a los maestros a verse como profesionales? ¿Qué aspecto de este proceso ha sido más útil? ¿Continuaría estudiando alguno de ellos?
31. ¿Algunos de los trabajos han sido compartidos en la Web o en publicaciones? ¿Dónde los podemos encontrar?
32. Necesitamos todas las respuestas posibles de los usuarios de los Pizarrones Electrónicos Interactivos (PEI's) para esta investigación. ¿Podría sugerir otros maestros que estén dispuestos a contestar este cuestionario? ¿Cómo podemos estar en contacto con ellos?
33. Si tiene algunos otros comentarios por favor agréguelos al reverso de esta página.

Annex 4

Teacher managers, researchers and SMT questionnaire

Personal details

Name: _____ School: _____ Position: _____ Nation: _____

Email address: _____

May we have your permission to publish your remarks anonymously?

What is the schools'/communities vision for teaching and learning using ICT?

How do the ACTIVboards fit in to that vision?

How many boards does your school/community have? (or in the plural)

How many ACTIVboards have been given by Promethean?

How many other boards do you have?

What make?

Fixed Portable

If they are fixed, where are they located?

How frequently do you use them?					
Every lesson	At least once a day	For specific subjects	Once a week	Less than once a week	Never

If 'Never', thank you for your time.

In what ways do you use ACTIVboards?					
Small group	Whole class	With individuals	Student participation	Didactically	For video-conferencing

Where do the students sit?		
In front of the board	At their desks	Both

Has the classroom furniture been re-arranged since the board was installed?

If so, how?

Where is the board located?		
Behind the teacher's desk	At the side of the desk	On another wall

Can the students reach the top of the board?

YES/NO

What materials are used with the board? (Tick all that apply)		
Commercial software	Web-based materials	ACTIVstudio teacher-created materials

How were you trained to use your ACTIVboards?			
By the company	By education department advisers	By a colleague	I'm self-taught

In your observation

What did the teachers like best about that training?

What did the teachers like least?

What lessons seem to be most popular using the ACTIVboard?

Which software activities do teachers like best using the ACTIVboard?

(What do they think of the voting system?)

Is there anything you can think of which they could not teach easily without an ACTIVboard?

Can you suggest any new kinds of software for the ACTIVboard you would like the company to develop?

Can you give me any examples of students' work that show the usefulness of the ACTIVboard in learning?

How have ACTIVboards changed the way in which the staff teach overall?

How have ACTIVboards changed the ways your students learn?

If you have any other comments please add them to the back of this sheet.

Cuestionario para gerentes de maestros, investigadores y SMT⁴

Detalles personales

Nombre:

Escuela:

Posición:

Nación:

Dirección electrónica (E-mail):

1. ¿Podemos tener su permiso para publicar sus comentarios anónimamente?

2. ¿Cuál es la visión de las escuelas/comunidades para la enseñanza y el aprendizaje usando las Tecnologías de la Información y la Comunicación (TIC's)?

3. ¿De qué manera los Pizarrones Electrónicos Interactivos (PEI's) encajan en esa visión?

4. ¿Cuántas pizarras tienen sus escuelas/comunidades?

Fijos	Portátiles

5. ¿Cuántos PEI's han sido dados por Promethean?

6. ¿Cuántas otras pizarras tienen los planteles del estado?

7. ¿Qué marca?

8. Si son fijos, ¿dónde se encuentran?

9. ¿Qué tan frecuentemente son utilizados? (Seleccione una opción)					
Cada lección	Al menos una vez al día	Para temas específicos	Una vez por semana	Menos de una vez por semana	Nunca

Si seleccionó "Nunca", gracias por su tiempo.

⁴ Teacher managers, researchers and SMT questionnaire

10. ¿En qué maneras se utilizan los PEI's? (Seleccione las opciones relevantes)					
Grupo pequeño	Clase entera	Individualmente	Participación del estudiante	Didácticamente	Para videoconferencias

11. ¿Dónde se sientan los alumnos? (Seleccione una opción)		
Al frente de la pizarra	En sus escritorios	Ambos

12. ¿Han sido reacomodados los muebles escolares desde que los PEI's fueron instalados?

13. Si así fue, ¿de qué manera están ahora arreglados?

14. ¿Dónde se encuentra la pizarra? (Seleccione una opción)		
Atrás del escritorio del maestro	Al lado del escritorio	En otra pared

15. ¿Los estudiantes alcanzan la parte superior de la pizarra?	SI	NO

16. ¿Qué materiales son usados con la pizarra? (Señale todas las que aplican)			
Software comercial	Materiales basados en la Web	Materiales creados por los maestros en el ACTIVstudio	Enciclomedia

17. ¿Cómo fue usted capacitado para usar sus ACTIVboards?			
Por la compañía	Por los asesores de la Secretaría de Educación	Por colegas	Auto-didacta

En su observación

18. ¿Qué les gusto más a los maestros de la capacitación?

19. ¿Qué les gustó menos a los maestros?

20. ¿Qué lecciones parecen ser más populares usando el ACTIVboard?

21. ¿Cuáles actividades del software les gusta más a los maestros usando el ACTIVboard?

22. ¿Qué opinan del sistema de votación? (Sólo si esta opción aplica)
23. ¿Hay algo en lo que usted pueda pensar que no pueda ser enseñado fácilmente sin un ACTIVboard?
24. ¿Podría sugerir algún tipo nuevo de software que le gustaría que la compañía desarrollara?
25. ¿Podría darme algún ejemplo de trabajo de estudiantes que demuestren la utilidad del ACTIVboard en el aprendizaje?
26. ¿Cómo los ACTIVboards han cambiado la manera en el que los miembros del plantel escolar enseñan en general?
27. ¿Cómo han cambiado los ACTIVboards las maneras en que los estudiantes aprenden?
28. Si tiene algunos otros comentarios por favor agréguelos al reverso de la página.

Annex 5

How frequently would you like the teachers use them?					
Every lesson	At least once a day	For specific subjects	Once a week	Less than once a week	Never

In what ways would you like the teachers use ACTIVboards?					
Small group	Whole class	With individuals	Student participation	Didactically	For video-conferencing

Where would you prefer the students to sit?		
In front of the board	At their desks	Both

Has the classroom furniture been re-arranged since the boards were installed, as far as you know?

How were the teachers trained to use ACTIVboards or others?			
By the company	By education department advisers	By colleagues	Self-taught

Do you expect the ACTIVboards to raise the pupils' attainment? How would you expect this to happen?
 How do you hope the ACTIVboards will change the way in which the teachers are teaching?

How do you hope ACTIVboards will change the ways the students learn?
 What are the attitudes of other policy makers towards the use of ACTIVboards in teaching and learning?

What is your attitude towards the ACTIVboard within the teaching and learning policy in the schools?

What do you think is the future of ACTIVboards in schools? How would you like the schools to progress?
 What are the barriers to this progression?

Are the ACTIVboards value for money? Why?

What other ICT peripherals do you recommend for teachers?

What is your opinion of the practice-based research processes that have been adopted in this project? Do you think sharing knowledge and publishing ideas will help to make teachers feel more professional?
 If you have any other comments please add them to the back of this sheet.

8. ¿Cuál es el nombre del agente local? ¿Está funcionando bien esta relación? ¿Explique sus opiniones? ¿Cómo se podría mejorar esta relación?

9. ¿Ha dado algún consejo sobre dónde deberían de ser colocados los ACTIVboards? ¿Cuál ha sido su consejo? ¿Fijos o portátiles? Si no ha dado ningún consejo formal por favor dénos su opinión

10. ¿Qué tan frecuentemente quisiera que los maestros lo utilicen? (Seleccione una opción)					
En cada lección	Al menos una vez al día	Para temas específicos	Una vez por semana	Menos de una vez por semana	Nunca

11. ¿De qué maneras le gustaría que los maestros utilicen los ACTIVboards? (Seleccione las opciones relevantes)					
Grupos pequeños	Clase entera	Individualmente	Participación del estudiante	Didácticamente	Para videoconferencias

12. ¿En dónde le gustaría que se sentaran los alumnos? (Seleccione una opción)		
En frente de la pizarra	En sus escritorios	Ambos

13. ¿Han sido reacomodados los muebles escolares desde que los pizarrones electrónicos fueron instalados, que usted sepa?

14. ¿Cómo fueron capacitados los maestros para usar los ACTIVboards o PEI's?			
Por la compañía	Por los asesores del departamento de educación	Por colegas	Auto-didacta

15. ¿Espera que los ACTIVboards eleven el desempeño de los estudiantes? ¿Cómo espera que esto suceda?

16. ¿Cómo espera que los ACTIVboards cambien la manera de enseñar de los maestros?

17. ¿Cómo espera que los ACTIVboards cambien las maneras de aprender de los estudiantes?

18. ¿Cuáles son las actitudes de otros diseñadores de políticas educativas hacia el uso de los ACTIVboards sobre la enseñanza y el aprendizaje?
19. ¿Cuál es su actitud hacia el ACTIVboard dentro de las políticas de enseñanza y aprendizaje en las escuelas?
20. ¿Cuál cree que sea el futuro de los ACTIVboards en las escuelas? ¿Cómo le gustaría que las escuelas progresaran? ¿Cuáles son las barreras en este desarrollo?
21. ¿Tienen los ACTIVboards una buena relación calidad-precio? ¿Por qué?
22. ¿Qué otra Tecnología de la Información y la Comunicación (TIC) secundaria recomienda para maestros?
23. ¿Cuál es su opinión de los procesos de investigación basado en prácticas que han sido adoptados en este proyecto?
24. ¿Cree que compartiendo conocimientos y publicando ideas ayude a hacer que los maestros se sientan más profesionales?
25. Si tiene algún otro comentario por favor agréguelo al reverso de esta página.

Annex 6

14. ¿Cómo espera que los PEI's cambien las maneras de aprender de los estudiantes?
15. ¿Han cambiado sus opiniones sobre la utilidad de estas PEI's desde la primera vez que los vio?
16. ¿Cuál cree que sea el futuro de los PEI's en las escuelas? ¿Cómo le gustaría que las escuelas progresaran? ¿Cuáles son las barreras en este desarrollo?
17. ¿Tienen los PEI's una buena relación calidad-precio? ¿Por qué?
18. ¿Qué otra Tecnología de la Información y la Comunicación (TIC) recomienda para maestros?
19. ¿Cree que compartiendo conocimientos y publicando ideas ayude a hacer que los maestros se sientan más profesionales?
20. ¿En dónde podemos encontrar sus trabajos acerca de los PEI's? ¿Nos podría facilitar copias de sus artículos?
21. Si tiene algún otro comentario por favor agrégalo al reverso de esta página.

Annex 7

Cuestionario/protocolo de entrevista para distribuidor/vendedor⁷

Detalles personales

Nombre: Posición:
Compañía: País:
Dirección electrónica (E-mail):

Puede, por supuesto, abstenerse de contestar cualquiera de las preguntas y añadir comentarios de lo que piensa que hemos omitido.

¿Tenemos su permiso para grabar esta entrevista? Usted será invitado a revisar la transcripción. Los autores de los reportes sobre los proyectos ACTIVboards en los cuatro países se asegurarán de que sus comentarios sean anónimos, a menos que usted solicite lo contrario.

1. ¿Cuál es la visión de su compañía sobre el aprendizaje con las Tecnologías de la Información y la Comunicación (TIC's)?

2. ¿Con cuántos proveedores educativos trabaja usted?

3. ¿Podría citar cualquier reporte sobre los proyectos de los Pizarrones Electrónicos Interactivos (PEI's) que podamos leer?

4. ¿Qué evidencia de investigación ya tiene sobre el uso de los pizarrones electrónicos?

5. ¿Quisiera recibir los resultados provisionales de nuestra investigación 2005-2008?

6. ¿Puede recomendar conferencias en las que podamos informar sobre nuestros resultados?

7. ¿Cuántas pizarras tiene su región/país?

8. ¿Cuántos ACTIVboards han sido dados por Promethean? ¿Cuántos Promethean ACTIVboards han sido comprados? ¿Cómo se puede mejorar la relación con Promethean?

⁷ Resellers' questionnaire

9. ¿Qué otras marcas vende usted? ¿Cuántos otros proyectos existen? ¿Cuáles?
10. ¿Qué piensa sobre el software y el sistema de votación que Promethean proporciona?
11. ¿Espera que los ACTIVboards eleven el logro de los estudiantes? ¿Cómo espera usted que esto suceda?
12. ¿Cómo espera que los ACTIVboards cambien la manera de enseñar de los maestros?
13. ¿Cómo espera que los ACTIVboards cambien la manera de aprender de los estudiantes?
14. ¿Sus opiniones sobre la utilidad de estas pizarras han cambiado desde que los vio por primera vez?
15. ¿Cuál cree que sea el futuro de los ACTIVboards en las escuelas? ¿Cómo le gustaría que las escuelas progresaran? ¿Cuáles son las barreras para esta progresión?
16. ¿Piensa usted que los ACTIVboards tienen una buena relación calidad-precio? ¿Por qué?
17. ¿Qué otra TIC secundaria recomienda para maestros?
18. ¿Cuál es su opinión de los procesos de investigación basado en prácticas que han sido adoptados en este proyecto?
19. ¿Cree que compartiendo conocimientos y publicando ideas ayude a hacer que los maestros se sientan más profesionales?
20. ¿Tiene algún material de los maestros o estudiantes usando los PEI's que podamos publicar?