



# Review of the eBeam Edge

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## Introduction

In 2012-2013 the math department purchased three SMART Boards. LAS Educational Research (LASER) researched the boards in the first year of their use (see SMART Board 1 and SMART Board 2 at [research.las.ch](http://research.las.ch)) and found that, contrary to some of the other technology we studied in past years, the SMART Boards presented no significant technology difficulties to the users, resulting in no measurable reduction of student time on task.

Furthermore, all teachers using the SMART Boards reported that they were happy with the technology and several teachers not using the SMART Boards expressed interest in using them, one teacher even moving to a room that had a SMART Board when the regular teacher had a free period.

However, the SMART Boards cost upwards of 5,000 CHF. Because they are not an insignificant expense, LASER took a preliminary look in 2013-2014 at a less expensive alternative, the eBeam Edge. The eBeam consists of an eBeam Edge receiver and an interactive stylus.

Our initial, quick study of the eBeam Edge was with the hard-wired version, which costs under 1,000 CHF, or about 20% of a SMART Board.

This report is based on the wireless version of the eBeam Edge, which also has the ability to connect via BlueTooth. The cost per unit is approx 1,200 CHF, or 25% of a SMART Board.

Our principal goal was to determine if the eBeam Edge approximates the functionality of the SMART Board close enough to be a viable alternative - without presenting technical problems and glitches which would replicated findings of studies using other technologies, in which student time on task was compromised by the technology itself.

## Setup

We had no problems with the wired connection. The device and the wires did not impede in classroom movement. The downfall to having a wired connection is we are limited for where we place the computer. The length of the wire does allow for an acceptable amount of freedom as it is quite long.

Setting up the device with Bluetooth has proved to be very situational. There are times where the Bluetooth will connect with no hassle, and other times where it simply won't connect. Wireless connection does allow for a lot more freedom for where to place your laptop, this would be useful if you did not have desk in the vicinity of the board - and if it worked consistently.

We ran into an issue with the projector setup. For the eBeam to function correctly, it requires a flat, level surface; thus it is required the projector projects completely on this flat level surface. The first projector we tried projected onto a screen that was too small, making it impossible to calibrate. The second projector we tried was a short-throw from the ground; the screen itself displayed well but having a large projector in the middle of the presenting area was problematic. Finally we found a flat surface, large enough so that the projector projected completely on the screen. We had removed the adhesive tape from the eBeam thinking that most screens/boards would be magnetic; this board was not magnetic and thus the eBeam had to be stuck on with tape. In addition, the flat surface was transparent, and the contours of the wall behind the surface made reading from the projector difficult.

The projector setup problems should be considered somewhat separately when regarding the functionality of the eBeam because if a projector is set up properly so that it is out of the way, projecting completely on a screen, and optimized for audience viewing, the eBeam will work. The only thing to consider is the adhesive tape vs. magnetic sticking, making it easier to move the eBeam around. This is not a major concern.

## Responsiveness

When plugged into the computer, the eBeam proved to have great responsiveness. I would be confident in saying that it was just as, or even more, responsive than any other "smart-board" technology I have used. The wireless interactive stylus is easy to use and very responsive. I used the calibration tool prior to presenting to ensure the wireless stylus was calibrated.

## Software

The initial download was very easy. After a brief read through of the manual, I found it very easy to navigate through; with my computer and with the wireless stylus. The main functions I used the software for were either annotating on previous documents and/or writing notes on a blank white page as I presented.

Note: The eBeam hardware can be used with other software also. For example, the SMART Board software "Notebook" can easily be used with the eBeam. There is definitely some flexibility in terms of software.

By bringing the eBeam into the classroom, it was possible to analyze the device in practice.

## From the perspective of a teacher who has not previously used a SmartBoard

[Vic] Did the eBeam help enhance your lessons? If so, how?

[Gadiel] The eBeam helped me to use multiple colors, to save work when changing slides, to be able to go back and forth between slides well.

[Vic] On a scale from 1 - 10, how user-friendly would you rate the eBeam?

[Gadiel] I would give a score of 7 or 8. The software makes a lot of sense, and it is easy to use. However, sometimes the eBeam's responsiveness is a bit slower than I'd like, and it takes getting used to.

[Vic] How often could you see yourself integrating the eBeam into your lessons?

[Gadiel] I will plan to use the eBeam on any class day that I use a projection / lesson on the board.

[Vic] What types of problems did you have with the device?

[Gadiel] The eBeam is sometimes slow to respond. Also, the handheld device has a buzzing sound that is distracting. Lastly, the device makes a loud tapping sound each time it's used on the board. It would be nice to have a soft-tipped pointer to make it less annoying.

[Vic] Did you notice a change in the students attentiveness when the eBeam was in use?

[Gadiel] Student attentiveness wasn't changed necessarily because of the eBeam, however I know that they benefitted from being able to see old slides (with saved work) and will benefit from me sending them the images of the slides after classes.

## From the perspective of a teacher who uses a SmartBoard on daily basis

[Vic] In comparison to the SmartBoard, how does the eBeam compare in responsiveness?

[David] It is a little less responsive, but not drastically so. The accuracy also seems a tiny bit worse but I think I would get used to it.

[Vic] In comparison to the SmartBoard, how does the eBeam compare in set up?

[David] A little hard to tell - if we left the eBeam plugged in for multiple class periods, there would likely be little to no set up between classes (in the same way that I can simply turn the SmartBoard on and off each class).

[Vic] In comparison to the SmartBoard, how does the eBeam do in overall ease of use?

[David] It didn't mesh quite as well with the SmartBoard Notebook software as I hoped, but this is to be expected because I know eBeam has its own Scrapbook software that is generally equivalent. Had I been using that software instead, I think I would have not noticed any big differences.

[Vic] Was there any notable difference between the two devices?

[David] Yes. I can't use my hand as an eraser (nor the SMART Board physical eraser) so there were a few occasions when I tried to erase something but had forgotten to select the eraser manually in the software. Additionally, the scroll bars in the SmartBoard Notebook software will always appear when you are using the SmartBoard hardware - when I used the eBeam hardware and the Notebook software, the scroll bars did not appear unless I manually scrolled with the trackpad/mouse.

[Vic] Putting aside the obvious bias of being accustomed to the SmartBoard, is there any reason why you couldn't just as easily use the eBeam on a daily basis the same way you use the SmartBoard?

[David] I think I'd need more than one class period to experiment but at first glance, no, I don't think there would be a big overall shift. From a quick poke around the Scrapbook software, it looks like there are fewer options for drawing different sorts of shapes, but the most common shapes (squares, circles, arrows, etc.) are possible in Scrapbook.

## From the perspective of a student

[Vic] What do you like about the eBeam?

[Patricia] Its very innovative and convenient. The fact that it can be set up around boards and be carried must be a plus for people that have to teach or to present.

[Vic] What do you dislike about the eBeam?

[Patricia] It's a bit complicated because of the lag that the pen has.

[Vic] Have you ever used a SMART Board? If so, did you notice a big difference between the eBeam and the SMART Board?

[Patricia] I have used a SMART board. The big difference between the eBeam and the SMART Board is that the eBeam has a bit of lag. But, in essence its pretty much the same thing. I think a SMART board would be easier to keep connected to the computer.

[Vic] What things can you imagine doing on the eBeam?

[Patricia] I can imagine doing interactive presentations. It's an easier way to teach for people who are always doing seminars in different environments.

## Summary

Through testing the product in different situations and looking at it from different perspectives, I have concluded that the eBeam is a great product to be incorporated into the classroom. It is easy to use, responsive and interactive. It is a sufficient replacement for a SmartBoard. The Bluetooth feature is nice to have, but definitely not a necessity; in fact I presume the wireless feature will nearly never be used (due to the fact that plugging it in is so easy). One additional thing worth mentioning would be the eBeam's portability. It is not like the SMART Board where, once installed, it cannot be moved easily. The eBeam can easily be picked up and moved to a different projector or location.

After reading through the reviews of others, as well as creating my own review, a fair assumption for why eBeam is not as popular as SmartBoard is that it is not well marketed and thus hard to find. Once this barrier is overcome, I believe the amount of money saved on purchasing eBeams as opposed to SmartBoards would be significant.

## Recommendations for LAS

Purchase 3-5 units for teachers interested in using them, create a professional learning work group dedicated to learning how to use them, and document the experience.

Also buy one for LASER for in-house use and to take with to presentations and conferences.

## Thank you

Gadiel Rachelson (Math Teacher)

David Kehlenbeck (Math Teacher)

Patricia Romero (12th Grade Student)

*Victoria Debrincat is a student of nanotechnology at Waterloo University. She worked during The winter and spring terms as an intern at LAS Educational Research (LASER). The mission of LASER is to extend teacher professional development through action research and exploring student self-regulated learning.*