

Whiteboard Teaching

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Abstract – Technology introduced many new ways of teaching and certainly shaped the history, but it is important to know why older methods such as whiteboard are still in use. Even though we drastically changed the way of putting characters on the larger medium, the basic idea is unchanged and the main goal (transfer of knowledge) stays the same. To understand this we will present the major benefits and drawbacks of using whiteboards and how it compares to alternatives used in teaching. The main idea of the paper is the proper use of whiteboard in teaching.

Index Terms – Whiteboard, Polyester, Acrylic



Background

The use of boards started in late 50's but who should be called the board inventor is not clear enough. United Kingdom says that Martin Heigh was the inventor. He was a photographer and war veteran who used the flat surface to write down the messages. He realized that negatives used in photography were great material for write-erase purpose and he implemented it on the flat surface to get all the benefits. On the other hand, USA has its own version where Albert Stallion is accounted as a whiteboard inventor. He was working for American Steel Company which created scratch resistant boards for architectural purposes. Albert suggested that these boards can be used for writing because they were easy to clean. His idea did not find the support until he left the company and started MagiBoards.

The first version of whiteboards appeared in middle 60's but they were not popular because the marker did not exist until 70's when Jerry Woolf created non-permanent marker (Pilot Pen patent). The allergies which chalk produced

affected the popularity of blackboards so whiteboards and marker became the primary tool.

Originally, the boards were made of steel which was expensive and not very practical. Since the board industry increased, people started using chipboards, plastic and other cheaper material used with polyester or acrylic coating. On the contrary, the most expensive porcelain boards offer the highest quality and still are used in universities.

The Technological Evolution

So far we have seen that boards changed over time in many qualities together with the markers. Yet we are more interested in the functional change because these changes affect the way we teach. Since the technology made a huge progress during 90's, the whiteboard got major changes. The interactive, technological whiteboard, called Smart Board is much more sophisticated tool for teaching. It includes collaboration of computer, camera, projector, and computer software. It is designed to recognize the touch and movement interactions. In addition, the input is performed using proprietary pen.

There are many advantages of using smart boards over conventional white boards taken from the teaching perspective. Some of the functions which these boards have are bluetooth, zooming, interactive presentations, etc. Smart Boards components are highly durable and take the input from many sources which increases the interaction since students can make real-time contribution using computer software.

Whiteboard vs Others

One can ask, why do we use whiteboards since many other teaching techniques exist and there are much easier to handle? As a reminder, some of the teaching techniques are PowerPoint presentations, multimedia presentation, websites, etc. These questions are not easy to answer because everything is based on our need. After all, the ultimate goal is the transfer of knowledge. First look at the benefits of using whiteboard and marker.

First reason is technological dependency which we try to avoid. This is a great advantage of whiteboard over others. How many times we saw that the lecture was interrupted or even canceled because of the technical issues? These are many things which can go wrong when using computers, projectors, etc. In addition, these technology components are very

expensive. Equipment price, maintenance and software cost is a huge disadvantage over whiteboard use.

Even though the multimedia presentation create more professional environment, time invested in creation presentation or other multimedia content can be much more comparing to the outline required for whiteboard teaching. Sometimes, teachers are not skilled enough with the software and their ideas cannot be express the way they planned or the way they can do it using marker.

By reading the opinions of the teachers who used various methods, I found that they all have one thing in common. I would call it teaching sense or awareness. Almost all physics and math teachers said that they have greater control over the material and they are able to “read” students respond from facial expressions more accurately when whiteboard is used. The reason why this may be true is the overwhelming technology. It is additional process to comprehend for both parties.

On the other hand, technological boards offer greater functionality and really address the major drawbacks of the conventional whiteboards. Taking notes during Smart Board lecturing is not necessary because everything is recorded. Teachers do not have to wait students or ask them is it a good time to erase the content from the board to create the space for new writings. Many times teachers just forget that students need time to comprehend the material written on the board and yet new ideas are presented.

If the classroom is very spacious and long, presenters may find hard to write larger font so that students can see it from the back of the room. This requires additional awareness and caution. Even though markers are better hygienic solution comparing to the chalk, yet it leaves traces all around. This problem is solved using special pens and touchscreen technology provided in Smart Boards.

In the next section we will talk about the writing design and proceed with the recommended actions of the presenter.



Proper use of Whiteboard in teaching

Very important skill required during whiteboard lecturing is a readable handwriting. Presenter must be careful and occasionally check if everything is clean and neat. This skill requires practice and experience. Note that whiteboard writing

differs a lot from taking notes because the letters are much bigger, marker is not easy to control and presenter must coordinate whole body. In addition to this, the use of particular font and color markers may drastically increase the readability and enhance the transfer of knowledge. Color markers effectively isolate the elements of the idea so that readers can understand it easier. The presenter must have collection of markers and check their visibility before the class. The space on the whiteboard should be segmented so that graphs, text, important notes are all separated.

In addition to the proposed writing skills, the presenter must ensure the interaction, comprehension and the flow of ideas. Teacher should encourage students to contribute and their responses should be noted on the whiteboard. In this way, students are involved in ongoing process which increases the topic awareness and knowledge. By doing this the presenter ensures that the material is comprehended by some of the students and the goal is to expand the interest to others. Step-by-step progression makes the topic flow organized and modular. In this way, students are able to learn the concept in smaller chunks and eventually combine them in the big picture.

The great difference between PowerPoint presentations and whiteboard teaching are real time writing actions. This can be very tricky so experienced teachers recommend the topic outline as a helping tool. Outline should contain the crucial points, required time to present every step separately and helpful clues to facilitate possible difficulties. By having this information in hand, the presenter decreases the stressful situations which may arrive such as not enough time to finish the lecture, memory glitch or just not being able to recall great examples.

Conclusion

The era of technology changed the way we teach, yet whiteboard lecturing still is used and has its own benefits. Depending on the need, experience and capabilities we may decide what is the best teaching solution for us. The ultimate goal is the transfer of knowledge and the use of whiteboard certainly does great job if it follows the recommended rules and actions.

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