Proper Use of PowerPoint in teaching

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Abstract—Teachers have a wide range of tools that can be used to teach but they generally make an extensive use of PowerPoints. This paper analyses why such a media is often adapted to the need of both student and professors even if avoiding numerous pitfalls is a long and complicated task. Thus, it also defines several general rules which can improve the quality of the slides and give tips on how to evolve around the digital support.

PowerPoint, Teaching, Methods

I. Introduction

Most generally, teachers use PowerPoint to present courses. They use a textbook and build a presentation on the top of it. Sometimes the presentations are good but they are often poor and don’t even compete with the book itself, giving the active part of teaching a tremendous non useful role.

To known how to make a good PowerPoint presentation, a teacher must understand who is the audience of his course, the type of students as well as the allocated time. Sometimes, depending on the time factor, it is better to skip some data instead of putting too much content on the slides. Similarly, a talk to technicians or theoricians must differ and shall be flavored with typical methods.

The process of being a good teacher is long and as a matter of fact requires the orator to train and learn form his mistakes. This supposes a feed back from students, peers as well as an auto critism and evaluation.

II. Reasons for using PowerPoint in teaching

When facing students, a professor has different types of people in front of him. First, some want to learn while other are not so interested in the presented topic, they just attend the class because they have to. The goal is to have everyone follow the course and be involved in it. Second, the teacher has to know the types of learners and can use multiple techniques to target specific ways of learning adapted to specific types of learners. There are four types of learners:

- auditory
- visual
- kinesthetic
- intellectual

Each type of learners have their specific ways of learning fast and efficiently and they all shall be respected not to make any difference between students. Though it is hard to design slides to target specific ways of learning, several slides representing the same concept can be used. Actually, repetition even without a multi-learning audience target is a good teaching principle and a repeating at the beginning and the end of the class what has been covered so far is an excellent way to do it. Typically, auditory, visual and intellectual learners can be satisfied easily in one slide. However, kinesthetic learners are hard to deal with because of the type of the lecture which is basically passive. Though, examples can be used to have people participating in the elaboration of a solution.

III. General directions

General rules are easy to remember and follow and they will make the slides efficient and soft.

A. Colors, theme and transitions

As a first advice, the predefined templates available over the different PowerPoint editors should be banned. A predefined theme makes the slides look like anyone’s. The viewer should not be thinking “I have already seen this theme before, when was it?”. Background images can’t be used because they would distract the eye of the reader. Sometimes it would be great to have a background image which is related to the subject. Then what the presenter can do is putting it on the first page only or on plan slides. Indeed, the former consist of a good introduction, it could be a great start for a starting-storytelling while the latter could remind what is the overall subject as well as the orator make a recap of what he has talked about. Nevertheless, a background image should not be distractive and thus shall not contain small details, such as those that can be found in paints, because the audience could stare deep into the picture and forget the monologue. At least, using solid background color could be considered but must contrast with the ink color. Otherwise, depending on the position of the viewer in the audience, some words would be unreadable. The best option remains the old fashioned black on white or anything with a high contrast, but for sure you don’t want to stroke the audience writing fancy red on jelly yellow.

Fancy transitions are not a good idea because it exhaust the eye and start being very annoying if used twice in a row.

B. Text, font and overall aspect

Use classic and straight fonts such as san serif fonts because the last row should also be able to read the text. In the same
perspective, use a high font format. As a general requirement, the slides maker shall include a title in each of the slides not to lose the audience. Tough, the teacher should try not to repeat the same header ten times in a row because it would give the impression that the presentation is static and not moving forward.

IV. SMALL DETAILS THAT CAN CHANGE THINGS

The quality of a PowerPoint presentation lies also in details.

A. The crux of the course

A presentation always supports a general skeleton. This skeleton can be hidden, revealed or partially shown depending on the impact its knowledge could have. As a general statement, hiding a whole plan whatever the reasons are is not a good idea because it loses students, the stream must remain clear. Conversely, repeating the table of content each time a part is finished allow the teacher to summarize what was said before, make a transition and begin the introduction of the new subject. However, summarizing and introducing should not be completely done here. Each chapter or part must have its own introduction and conclusion but the table of content slides are more about articulating concepts. And a way to do it is to use the conclusion of the former concept, commenting this conclusion with the order of the plan and then opening the new part with a small introduction which can be storytelling part.

At the bottom of the slides, the name of the chapter and the page reference must be present. The name of the chapter is used as a reminder of the topic while the number of pages is an indication of how much was achieved and what is to be done. In addition, the number of pages can be referenced as:

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#ofthepageinthischapter/#ofpagesinthischapter
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followed by

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#oftheoverallpage/#ofoverallpages
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V. EVOLVING DURING THE PRESENTATION

If the presentation is part of the job, another consists of the comportamental behavior of the teacher.

A. Interaction

First, a teacher must interact with the classroom, not with his computer. Traditionally, turning slides is made using the keypad and thus implies a move from the audience to the laptop producing the feeling that the machine matters more than the students. It can be avoided using tools which basically replace the mouse and can also provide a laser pointer. This item should not be visible to give the impression that the slides just flip by themselves as the orator speaks. In addition, the laser pointer is not always a good solution because he is not always visible, it moves generally too fast losing the audience. Using the hands, even if it masks a part of the slides is more intuitive and reduces the space between the audience and the speaker. However, the use of a pointer can be done but should be considered with smart tools such as a digittal camera recording the position of the red point on the screen allowing to play and swapping slides as described in [4].

1) Presentation: The slides are not here to be read because people can read and read faster than the orator can speak. They are a supporting document to the professor’s discussion. This is an important point because if the slides are full of text people are reading it and are not listening, they are more interested in knowing things faster. If there is not enough words, they will be obsessed by the words they don’t understand and won’t listen too. For instance if the professor wrote “slurp” on the slide and would explain it, the students would keep asking what is this “slurp” thing. Further more, few words are not enough to say something intelligent and true without assuming that students are not intelligent because they won’t be shocked by such an abrupt affirmation. So, what can be done is hitting “B” on the keyboard to insert a full white screen in the presentation. Then the teacher can use this time to make a human contact with the audience. Facing eyes and catching emotions such as concentration and bored faces can help the orator modifying his speech to catch up latecomers and satisfy impatient.

One important skill is that the speaker must give the feeling that he masters the slides and is not enslaved to them. This particular element helps preventing the audience from thinking that the teacher does not understand what he is saying. And at least, one must repeat the presentation. What is characteristic of really good presenters is that they always make the same jokes even it is their umpteenth show on the topic. Though, in an international context, avoiding jokes could be reasonable as humor is not the same all over the world.

VI. COMBINING TOOLS

As we have seen, PowerPoints are a good tool for teaching because they convey an idea through several forms. But, aside the electronic form, the use of a such a teaching tool can be enhanced by a collaborative work. For instance, if a blackboard or computers are available, they could be used as well.

A. Blackboard

In the case of PowerPoint presentations, the blackboard can be used as a scratch zone and in general as an extension of the screen. The slides must remain a neutral zone without any stripes or errors not to confuse recipients. So, if a student thinks of an idea which is wrong you can write it on the blackboard, the professor can compare his solution with the correct solution on the slides and at the very end erase it. Alternatively, he can detail some concepts of an idea which is on the slides. But this must be done very carefully. Indeed, it is a key concept and must be remembered by the audience. Then the slides must have an empty space to let people take notes, otherwise the teacher’s detailed explanations will be forgotten by most of the students.

B. Computers

If the students have computers, for instance for a lab course, the orator can use the slides to show the steps of a coding
question and even the answer in an evolutive way, showing steps after steps the key points of the programming task.

VII. CONCLUSION

So far we have seen that making a good presentation is not easy as they are a lot of pitfalls. Though, with some experience, it is possible to avoid a lot of them and focus on more demanding subtleties.

REFERENCES

[1] To slideware or not to slideware: student’s experience with PowerPoint vs lecture, Nicole Amare
[3] Improving the Design of PowerPoint presentations, Patrick R. Lowenthal