

# VIRTUAL & REAL FACE TO FACE TEACHING

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## ABSTRACT

In traditional “face to face” lessons, during the time the teacher writes on a black or white board, the students are always behind the teacher. Sometimes, this happens even in the recorded lesson in videos. Most of the time during the lesson, the teacher shows to the students his back not his face. We do not think the term “face to face” is the correct one in this case. The order in space: 1- the “knowledge” (black/white board); 2- the teacher; 3- the students, psychologically creates the idea to the student that the “knowledge” is so far away from him, beyond the teacher. We have changed this order in space to: 1- the teacher; 2- the “knowledge” (black/white board); 3- the students. So we have put the object to be studied between the teacher and the students. In this way we have set up a Real Face to Face process. Position of studied object between the teacher and the students makes the lessons much more attractive. During the time of the real lesson, it is recording in a video format using a cheap infrastructure and very simple to use by the teacher himself. The teacher is “all in one” person (screenwriter, actor, cameraman, director, audio & video editor, producer, distributor) of producing Virtual & Real Face to Face (VRFF) videos. The teacher writes on a transparent board which is between him and the students. The transparent writing board, in the same time, is an available big “transparent screen”. Power point slides or different graphics can be shown on this screen with the teacher behind it. During the real lesson some of the students stay in the teacher’s room the others are in classroom following the teacher via the big screen of a projector. Both category of students can see and ask the teacher any time being part of the produced video. The students can access the videos very easily via website of the university or in [www.youtube.com](http://www.youtube.com). Technical details of this infrastructure and an experience of recording lessons generating the corresponding videos are in the presentation.

## KEYWORDS

Traditional Face to Face lesson, Virtual & Real Face to Face lesson, VRFF, transparent “black board”, transparent big screen, recorded lesson.

## 1. INTRODUCTION

Nowadays, in many environments, security cameras are used to record movements of everything even dogs and cats that pass in front of cameras. Don’t you think it is a pity not to record the real lectures in classrooms? Teacher spends too much time for preparing the lectures. Students also spend time following the lesson and after the lesson ends everything the teacher said and wrote on black board has gone forever.

During the lecture students keep notes of what the teacher says and writes on the black board. This is good thing but I think it is not very effective. The student in lecture is focused to copy everything from black board and often he does not understand the essence of what the teacher is explaining. Nowadays the students often use cell phones to record the lecture. So the students need something more than the book (some time the book does not exist). Recording of real lectures carry the questions that students make during the lecture and the teacher in video is much more realistic because the real students are listening. I like this idea. In Distance Learning Education Center, Tirana Polytechnic University we are experimenting a kind of new technology of recording lessons. We have decided to denominate it Virtual & Real Face to Face (VRFF). VRFF videos are now a reality (see “Elektroteknika 1” playlist in [www.youtube.com](http://www.youtube.com)).

## 2. TECHNICAL DETAILS OF IMPLEMENTATION

The final result of Virtual & Real Face to Face technique is the production of videos as shown in figure 1 and figure 2.

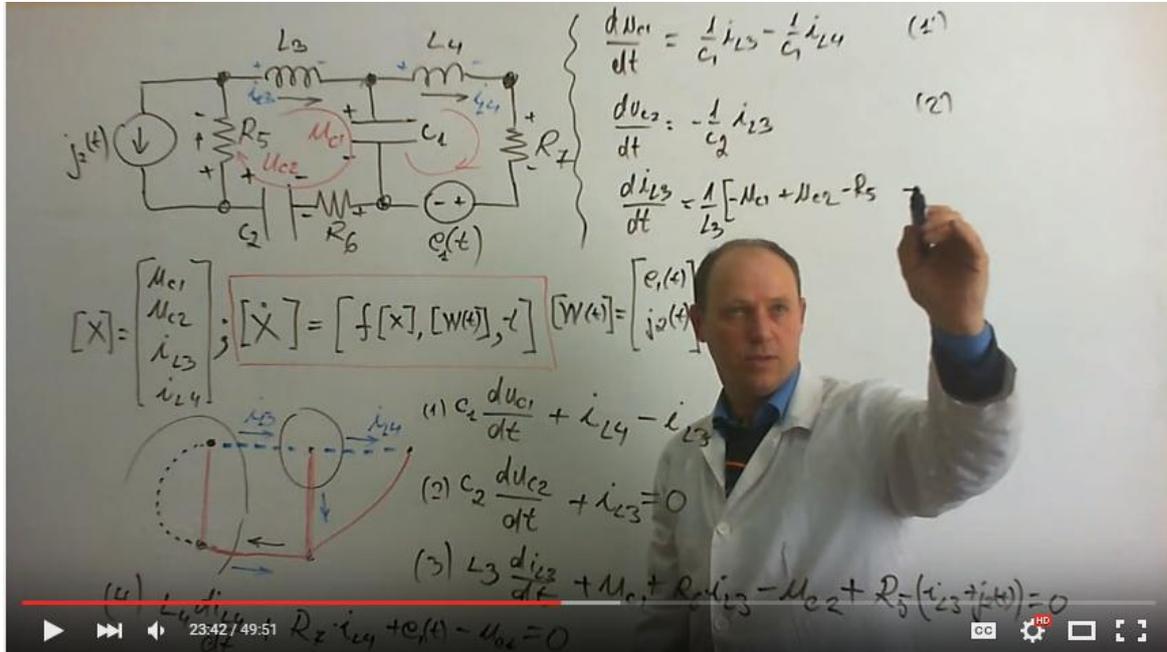


Figure 1. Video at <http://youtu.be/gDeWm9FiI6A>

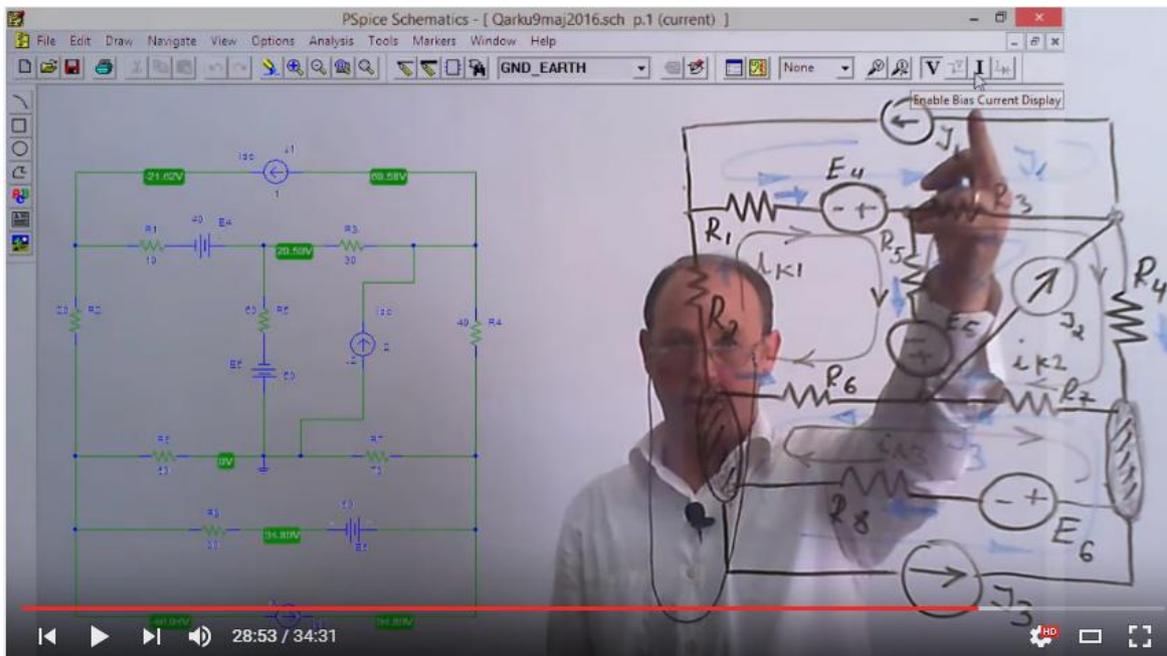


Figure 2. Video at <https://youtu.be/Ba4E1PEtYek>

Registration is done in real time with students who follow live lecture but through a video projector. The teacher is in a room next to the lecture hall and communicates with students through a video conference system with two cameras. The cameras have audio boxes incorporated in it and a long wired sensitive

microphone. The teacher's camera has its microphone in the lecture hall and lecture hall camera has its microphone in the teacher's room. The teacher sees the students through a screen while students watch the teacher through the video projector which is set in the mirror projection mode (left site right). Teacher's camera mentioned above serves only to display the figure in the lecture hall. Recording of the video is done by a HD web camera connected to a computer which is on teacher's table. Another laptop on teacher's table is used for Power Point presentations or graphics in different simulations. A VGA monitor is connected to the laptop and it stays right behind the HD camera. On this screen teacher can display different notes, power point slides, demonstrate computer simulations etc. It is up to the teacher to show or not these notes or slides to the students. The teacher looks on the screen but on recorded video he looks like he is seeing the students (to the camera). This detail is a big advantage for generating high quality lectures even by teachers not so high qualified. As you can see the teacher has four VGA signal sources on the table: two video conferencing system cameras, computer VGA signal which is associated with HD camera and VGA signal of the laptop. These four signals enter a VGA switch which is on the teacher's table. Each channel has its own button and teacher can switch easily from one source to another, showing to the students what he wants, doing in the same time the role of video director. The final figure which students see in the classroom is displayed simultaneously on a large TV screen placed in front of teacher, shifted left. Depending on the size of the room where the teacher stays, a number of students sit facing the spine to TV. On the other side of the TV wall, there is a big mirror. The students in the teacher's room watch the transparent board (and the teacher) on TV through the mirror.

## 2.1 Video Editing Effects

During the real lesson two videos are produced: HD camera video (teacher with everything he writes on the transparent board) and computer screen video (Power Point or different simulations on computer). Video editing may not always be necessary. Through video editing we can create different effects (figures 3 and 4), making the recorded lesson much more attractive and understandable. The idea of large transparent screen on which the teacher writes with white marker board is created only through video editing.

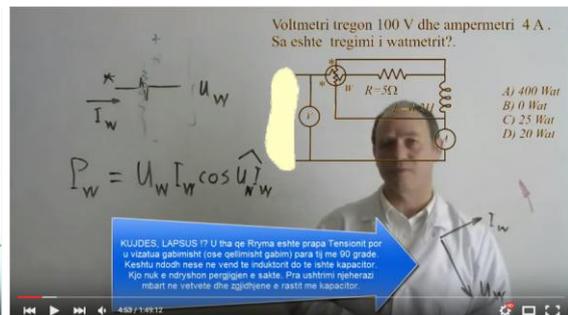
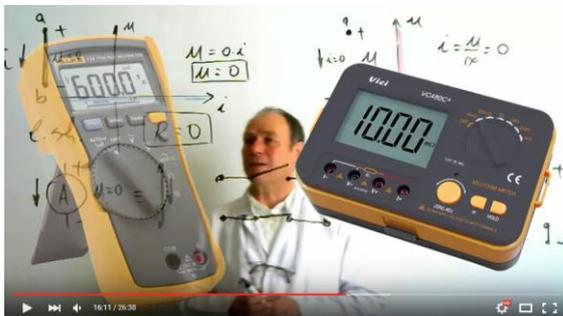


Figure 3. Video at <https://youtu.be/u7H5Z9sybRQ>

Figure 4. Video at <https://youtu.be/1ZZD5BIqb4E>

## 2.2 Accessing the Lectures via the Internet

The student can access the lessons very easily through website of university. He logins his session with the password provided and click on the YouTube icon next to the subject (figure 5). A list of all lessons recorded is on the screen. One can see videos and communicate with his teacher through the questions. YouTube provides a forum for each video. It is a fantastic opportunity for communication with your teacher.

 Bazat e Elektronikes	5/.4+F	[5] (FL)	
 Elektroteknika II	4/.4+F+D	[5] (FD)	
 Mekanika e Aplikuar	5/.+.F+L	[5] (FD)	

Figure 5. Accessing the lessons on internet

Long ago we asked somebody: "What did you put in your head during the study in university?". Nowadays, the time has come and we can say for sure you put everything of the university in your pocket. You have with you everywhere, everything you have learned in university. Smartphone makes it a reality. The student can "return" to the school at any time. He is only some clicks away from the university.

### 3. CONCLUSION

- The lesson time is spend efficiently. If in a traditional lecture the teacher repeats several times the same thing to be better understand, in VRFF lessons it is not necessary. The students can repeat listening himself till he understands what is said.

- The biggest problem of the poor results of students is continuity of studying. If for different reasons a student loses a traditional lecture he will have problems with next lessons. Recording video of real lectures exclude this factor.

- The student takes no notes during the lecture, he has no reason to do so. He is fully focused on what the teacher is explaining. This minimizes the study time at home.

- In VRFF lessons you can activate old and good professor (retired) who are not able to stand for a long time. They can sit and develop live lecture by writing on a touch screen laptop.

- Through the forum raised for each video in YouTube.com, professors constantly find reason to improve their lectures.

- If all subjects of a school have VRFF videos, it gives the colleagues the opportunity to attend lectures of each other and be updated with news of other subjects.

### ACKNOWLEDGEMENT

Does VRFF method have the future? It is a fact that some teachers, in lessons, often hold pieces of paper in their hands to be sure not to make mistakes during the explanation. So sometimes some students try to do the same thing in exams. They try to copy during the exam and ... if the teacher notices this the student is punished. It is a bad taste isn't it. These teachers do not agree with this kind of recorded lessons. I tell them: "Do not be afraid of this technique. You can produce VRFF video without using pieces of paper. The computer screen placed behind the HD camera is the best ever prompter".

I would be very happy if I had today recorded lectures of my professors who are now retired or dead. A special reverence and respect for those professors we cannot see or hear anymore. Now we have the opportunity not to happen with us what happened with our teachers.