Integration of a Professional Presentation Test as a Source of Motivation for University Students

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Abstract *— These days, the ability to make brilliant presentations is increasingly valued. In the academic world, it is commonplace for each professor to elaborate his own materials. In the business world, however, a great deal of audiovisual documentation is generated which certain employees are then required to present, either to groups of clients or to university groups. When a presentation is imposed on speakers in this way, they must have the skill to defend a tool designed by someone else with the same conviction as they would defend their own work. In the professional Presentation Test, the student is immersed in this situation.*

The students of Advanced Electric Circuits of the current study plan of the Industrial Engineering and Telecommunications School of the University of Cantabria have been informed that this test will be offered to the two students with the highest and second-highest marks. If either or both of them renounced it, it will be offered to the student with the next highest mark, and so on.

The aims of this test are:

- *To provide training for future oral presentations.*
- *To develop skills in use of external aids.*
- *To promote the vocation for teaching.*
- *To encourage the students to improve their academic record.*

Before the test, each student must select the three topics s/he prefers. One of these, chosen by the professor, will be the subject of the presentation. There will be a period of between five and ten days between the selection of the topics and the test. The test regulations are as follows:

- *The student is handed the material which s/he will use for a presentation in public lasting thirty minutes.*
- *Once the documentation receives the material, s/he has thirty minutes to prepare the presentation, using any bibliographical aids that s/he considers appropriate.*
- *Once the presentation is finished, the professor may discuss it with the student for a maximum time of 15 minutes.*

The examining board will be made up of the teachers of the subject or, alternatively, teachers from the field of Electrical Engineering. Once the test is finished, after the deliberation of its members, the board will inform the student of his mark, comment on any errors and make any suggestions they deem appropriate.

Index Terms *— Presentation test, oral skill, learning improvement.*

INTRODUCTION

Over the last few years, our group has developed several Educational Innovation projects for students of Electrical Engineering [1-3]; the main aim was to make the students reflect on aspects which are not generally given much thought. The test presented in this paper is one such project.

The Oral Presentation Test has been set up this academic year, 2002-03, in two subjects of the Department of Electrical Engineering of our University. The aim is to encourage the most gifted students to obtain the highest possible marks, Excellent or Distinction, both of which are seldom given in Engineering subjects in Spanish universities.

The only experiment performed up to the present date has been in the subject *of Advanced Electric Circuits* which is a compulsory subject taken in the third first semester of the third year of Industrial Engineering studies, which is a five year degree course.

The other subject selected for this test is *Power Supply Quality,* a fifth-year subject of Industrial Engineering studies. However, since this subject is taken in the second semester, the presentations cannot be made until the month of July, and thus, cannot be described in this paper.

AIMS

The ability to make brilliant presentations is ever more highly valued. In university circles, it is common for each professor to develop his own materials. However, in the business world, companies produce an abundance of audiovisual documentation which their employees then have to present, either to groups of clients or to university groups. When a presentation is imposed in this way, the speaker has to be equipped with the skill to defend a tool not designed by him with the same confidence as he might have defending his own designs. In the Oral Presentation Test, the student is placed in this position. The aim of the test is to enable the best students in the subject to achieve the following objectives:

- Training for future oral presentations.
- Skill in the use of external aids.
- Overcoming the natural rejection of oral tests.
- Facilitating the possibility of obtaining more brilliant academic certificates.
- Promotion of the teaching profession in the most outstanding students.

NORMS

Prior to the test, each student has to choose the three subareas of the subject which he knows most about. The presentation will be on one of these three areas, selected by the teacher. The period between the selection of the subjects and the test itself should be between five and eight days.

The specific test format is as follows:

- The student is handed a set of slides, in acetate or in Powerpoint, on a topic or part of a topic on which he is to talk, in public, for around thirty minutes.
- Once the documentation is given out, the student has a maximum of one hour to prepare the talk. He can use notes, books and any other bibliographical support he wishes.
- Once the presentation is finished, the examining board will discuss the contents of the presentation with the student for a maximum time of fifteen minutes.

EXPERIMENTAL PROCEDURE

The date of the test was established in consultation with the students and the place was a room of our Department which is set aside for the defence of theses, Specialist courses, board meetings and generally for all kinds of Institutional and postgraduate activities in the department.

The students were shown how to operate the overhead projector, and were allowed to place the projection screen wherever they wanted, as this is not fixed to the wall. The two students who did the test chose, in fact, the same positioning as that normally used by the teachers who use this room. (Figure 1).

The subject of Further Electronics has 6 thematic blocks and 23 subareas (Table I). At the beginning of the year, the students were informed that this test was to be set up, and that the students with the best marks in the final exam could take it. Should one of them renounce this possibility, his place was to be offered to the student with the next highest mark, and so on.

The two teachers of the subject both use transparencies in their classes but with different philosophies. One shows in each transparency a summary box which can be amplified on the blackboard if necessary. An example is shown in Figure 2(a). The transparencies of the other teacher, however, constitute conceptual guides to be developed in class. An example is shown in Figure 2(b). The students, therefore, have had to adapt to quite different types of presentation: the first, one of deduction and interpretation of non-steady first order state equations and the second, one of the explanation of the peculiarities of three-phase networks in non-sinusoidal state.

ASSESSMENT

The examining board was formed by the two professors who teach the subject and three others from the area of Electrical Engineering, from the Electric Circuits group.

With respect to the marking of the test, the students were informed that the following aspects were to be taken into account:

- Elegance and precision in the presentation.
- Clarity in the exposition of the main concepts of the item.
- Quality of answers to the questions posed by the members of the examining board.

The examining board was pleasantly surprised by the quality of the presentations of the two students. With respect to the student who had to talk about the set of transparencies shown in Figure 2(a), it was observed that he not only controlled the topic he was explaining but also he was fluent and confident and described clearly the similarities and differences between non-steady states with continuous and with alternative current.

The student who defended the transparencies in Figure 2(b) was not quite so fluent in his presentation. However, he did explain with sufficient clarity the conceptual considerations required by the content of the transparencies, showing an in-depth knowledge of the behaviour of multi-phase circuits subjected either to a non-sinusoidal supply or to non-linear loads.

When the board analysed the two sets of transparencies, it considered that despite the detailed formulation of those of the first student, those of the second student were more difficult since they demanded a certain improvisation of all of the conceptual aspects outlined in the transparencies

Once each presentation was completed, the members of the board debated various aspects with each student, asking for further clarification of some of the points contained in the transparencies used, of which the students were not authors. In general, the students answered the questions posed accurately and confidently. The board valued particularly positively the explanations they gave on the transparencies used, even though these were not designed by them.

OPINIONS OF THE STUDENTS

Once the test was finished, the members of the board asked the students about their impressions of the test since this was the first time it had been done. The most interesting ideas are expressed below:

- They had done the test because they knew that under no circumstances could it mean a reduction in the exam mark.
- They agreed that it was best to use material prepared by the teacher rather than having to design it themselves.
- They viewed the test very positively, particularly for acquiring experience and for taking away the fear of speaking in public.
- Attending class and knowing, as a consequence, the transparencies used by the teacher had helped them.

RESULTS AND CONCLUSIONS

When the board met to evaluate the test, the members of the board decided unanimously to award the students the highest mark possible, that is a 10 or Distinction, since their presentations had surpassed even the most optimistic predictions. Some members of the board could even remember worse performances from teachers in the second exercise of the public exam for University Professors, even though in this case, the professor chooses the topic to present and has several months to prepare it.

Due to the success of the test, it has been decided to apply it in more subjects in our department. However, in the present academic year, the students with the best marks in the subject of Electrical Power Supply Quality will also do the test in the first fortnight of July. It is to be hoped that, given the maturity of students in their final year and the experience they will have accumulated in the various subjects of the second cycle, their presentations will be of a high quality and comparable to those of the third year students described here.

REFERENCES

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FIGURES AND TABLES

TABLE I.
BLOCKS FOR THE SUBJECT 'ADVANCED ELECTRIC CIRCUITS'.

Block	Contents
1	Non-steady state.
1.1	First order circuits.
1.2	Circuits containing impulses.
1.3	Second order circuits.
1.4	Circuits with dependent sources.
1.5	Solutions using Laplace Transform.
2	Multi-phase circuits.
2.1	Definitions.
2.2	Star and Delta configurations.
2.3	Solution methods. Equivalent circuits.
2.4	Power in three-phase circuits. Measurement methods.
2.5	Unbalance and power efficiency. Design of compensating circuits.
3	Non-linear elements.
3.1	General concept of passive elements.
3.2	Resistance of two terminals: types and characteristics.
3.3	Capacitor of two terminals: types and characteristics.
3.4	Inductance of two terminals: types and characteristics
3.5	Multiterminal elements.
4	State variables.
4.1	Linear network equations approach.
4.2	State equations in non-linear and time variant networks.
4.3	Solution of state equations.
5	Networks in non-sinusoidal state.
5.1	Solution. Parameters.
5.2	Three-phase systems in non-sinusoidal state.
5.3	Power flows in non-sinusoidal networks.
6	Fundaments of magnetic circuits.
6.1	Magnetic properties of matter. Losses in ferromagnetic cores.
6.2	Laws of magnetic circuits. Magnetic energy and strength.

FIGURE 1.
CLASSROOM LAYOUT.

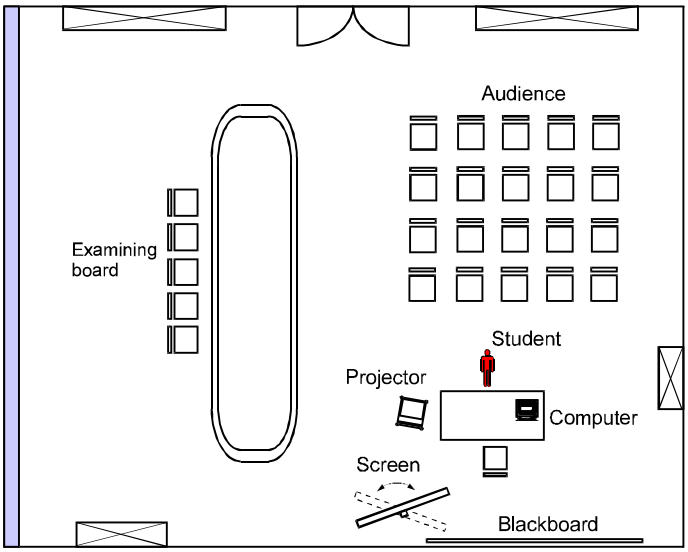

FIGURE 2(a).
EXAMPLE OF SLIDE USED DURING THE FIRST ORAL PRESENTATION.

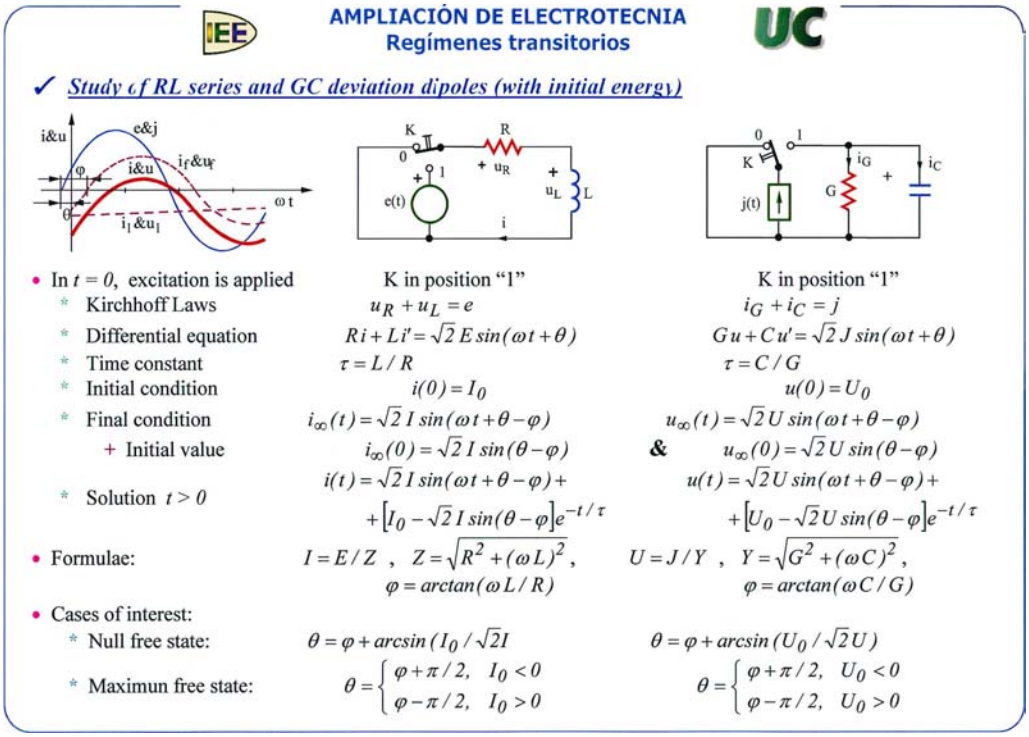

FIGURE 2(b).
EXAMPLE OF SLIDE USED DURING THE SECOND ORAL PRESENTATION.