



Learning to Learn: Music and Dynamics for a More Comprehensive University

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music, teaching methodologies, ISCTE, super-learning, educational system.

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ABSTRACT *In spite that the super learning techniques have been broadly used in other levels, it has not yet determined if they could also improve undergraduates' academic performance at the university. The subjects of the experiment were students between 18-24 years old and attended the lectures of the subject of Statistics in the first course of the degree of Economy at the university. In order to favour a more integrative learning the music and the dynamics have been used. The results have been measured using surveys filled by the students as well as comparing their academic results with former years. They have shown a general satisfaction with the methodology, positive effects on students' self-esteem and the noticeable improvement on exams' results.*

Katherine Schultz (2011) author of *Being wrong: Adventures in the margin of error* in her TED talk about "being wrong" in the same year defines the general behaviour of humans as pretending that everyone sees the same when looking through a window. This premise, that could seem absurd and non-sense, would serve as a perfect description of how the educational system is conceived in general.

Specially at the university level, the unified criteria for evaluation and assessment of what the students know (even if they will forget 5 days after the exam) results on exams and test being the only way in which teachers communicate with the students about their performance. The monologue of the lecturer and the close (or not) attention of the learners for following the lecture is one of the most common situations that one could find when reviewing the higher education. The university

Confronting with the traditional methods, the "super-learning" technique has emerged after year 2000 as an alternative for driving the change. It that can be defined as "a technique of teaching that speeds up learning with the help of relaxation exercises" (Shafqat, Muhammad, & Imran, 2010, p. 1) The central argument is that "we need new ways, more efficient and less stressful ways of getting to these potentials. We need to learn how to learn" (Ostrander & Schroeder, 2012, p. 1). Although this methodology has not been widely use in Europe, it is not less true that in other places like Central Asia (Ayaz, Rahmatullahshah, & Atta, 2013) and South America (Arias, 2013) it has had more predicament.

In order to get the development of different abilities within the students, we have employed the music as a catalyst for the energy and attention of the students. Researchers like Levitin (2006) – who enounced the "Mozart effect" and Schellenberg (2006) have worked on the topic. In addition we have configure a series dynamics as a multiplier for the expected effects of the music, helping to create the adequate environment on the students to allow the therapeutic effects of music reaching their potential. Following Singh & Gera (2015), we saw the need of a improving role of the teacher, who should adopt more a mentor attitude

than to play an strict educator.

Method Participants

This study is the result of a continuous experiment carried out during the lectures of the subject of Statistical Inference within the degree of Economy. The students (62 - 27 women and 35 men) were between 19 and 24 years and followed this subject in the first semester of the second year of studies. The study was realised in the morning and the afternoon lectures (attending by different groups of students) and as well on the exam. The same teacher, one of the authors of this paper, conducted all the experiment. The background questions indicated that the majority of them, 62,90%, use the music at least sometimes when studying and practically all of them like the music in general.

Selection criteria and procedures for the music

Through the whole semester two different kinds of music were played; the first one, used in 10 of the 15 weeks of lecture, meaning 30 session amounting 35 hours in total, was labelled like Baroque music, consisted on the combination of a series of pieces of classical music that composed several long play lists to coincide with the duration of each type of lecture: 55 or 70 minutes. The classical music pieces were selected by the authors of this study based on more than 40 years research of Instituto Superior de Ciencias Terapéuticas y Educativas (here in after ISCTE), in Barcelona (Spain). The main characteristics of relaxing music include quiet melodies, slow timings with medium or grave registers in the instruments with few or not expression of emotions. The effects of the music are the progressive relax in addition of provoke the disconnection with the daily and intra-psychic routine.

The second kind of music labelled Sound tracks was employed during the last five weeks of lectures, therefore during 15 lectures or 17'5 hours. It consisted equally of 55 or 70 minutes long play lists and included instrumental versions of popular and modern tracks and as well original sound tracks of blockbusters and pop music featured by philharmonic orchestras, violin quartets and similar. The main difference with the first type is that these songs were

easily recognizable by the students who even proposed which songs they would like to hear during the lectures.

The choice of this second kind of music is, a priori, less adequate since its popularity could introduce certain elements of distraction. However we have attended the same criteria of the tested music from ISCTE and the fact that the students are already familiarized with them through the first type shouldn't impede the achieving of the proposed aims.

Selection criteria and procedures for the dynamics

The idea of using the dynamics emerges from the positive experiences that one of author have had using non-formal education methods during different courses, seminars, youth projects and similar. We adapted dynamics from the European Student Forum (AEGEE), the Erasmus Student Network (ESN) and the European Network SALTO.

The group dynamics employed had the effect of increasing the interrelation of the students and their positive attitude towards the subject and had their better reflection when the student realized that the cooperative working allowed them to solve what before looked like impossible problem and that the self-esteem had substitute the initial fears.

Results

Effects of music

More than 80% of the students faced this methodology for the first time and a high percentage of them (93,5%) recommended its application in other subjects. One of the students highlighted: *"I would like that you continue researching so this could be done in every lecture"* (Female, 19, morning).

The perception of the teacher seemed also to be positively influenced by the use of the music according to the answers that show that almost the half of the respondents have now a better opinion of the professor than they have previously to the experiment. Some of the comments reinforced this positive evaluation:

"I have now a better opinion about the teacher since, one way or another, she "pushes" us to pay attention, reducing the possibilities of losing the thread"

"I want to point out that the tone with which the professor gives the lecture while music is hearing also influences positively"

An interesting point, however, is the willingness of having a test using the same methodology. It seems that the importance of an exam still prevails on the perceived benefits of the music and only half of the respondents answered yes to that question.

The answers of the students about the perceived effects of music show that it make them feeling comfortable and more confident but still it is not enough to diminish significantly the tension related with having to face the proves and exams.

Academic results

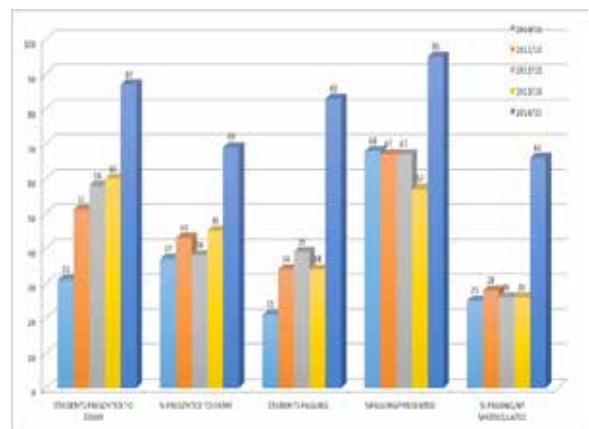
We have measured the academic results of the same exam call in different academic year for the subject of Statistical Inference which syllabus has remained constant and so has the teacher; being the only noticeable change in the last academic year 2014/2015 the introduction of the music and the dynamics in order to create a more favourable

learning environment for the students.

The results in figure 1 show an impressive and positive evolution in all the variables considered. The number of students presented at the first call has increase by almost 30 representing almost a 25% raise regarding the relation with the total number of students inscribed in the subject. This could indicate that the new methodology allows the students to easier follow the lectures and a the comprehension of the contents, thus provoking on them a bigger degree of self-confidence that make them believe more on their possibilities to pass the subject and, therefore, encourage them to assist to the first call.

Figure 1

Comparison of exams' result in the last 5 years



In addition, the number of students passing rose spectacularly and could be an indication that the new methods introduced by the teacher have had very positive effects on the performance of the students during the exams.

Conclusions and discussion. Towards a more comprehensive university

In our opinion, the educational system still does not foster enough between student-professor, the empathy with its age and vital moment and so on which surely harms the development of more technical competences. The mere usage of music does not solve the problem itself. It needs an active involvement from the students – that we have looked through the dynamics – who are open towards a new methodology but also from the teacher that wants to go down from the upper position of controls and accepts that trying to use the same methods with different groups of students year after year is like pretend having a master key that can open every door.

The success of the experience at the very university has provoked that already a bigger study is taking place with the addition of more teachers from different subjects, different backgrounds and with a number of students involved around 400. All with the aim of continuing the good results showed in this pilot experience and create a more comfortable environment for both students and teachers.

We can conclude this paper with probably the best summary to this article: The words of a student that was through the whole experience after he finished it, before passing his final evaluation and obtaining his mark in the subject. *"Encouraging, simply encouraging. If I had to describe in few words the subject as a whole, I would de-*

scribe it as an experience to remember and never forget. Its bet for implementing a logical docent system, human – especially HUMAN – and according with the modern times, makes clear the extremely anachronism of the academic world. You made us belief in your lectures and that in my humble opinion, you demonstrated to be a wonderful human being and a wonderful docent”.

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