THE IMPORTANCE OF LISTENING STUDENT’S OPINIONS TO IMPROVE LECTURING METHODOLOGIES

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Abstract

Active learning transfers the ownership of learning from the lecturer to the students. Students need to be encouraged to participate in self-study, avoiding gathering knowledge by just sitting back. During the last years, it has been observed that the attitude of the students in the higher education is very passive and they are not enough motivated to participate in activities and fact-based discussions. In order to change this situation, it is necessary to adjust the teaching to the needs and way of working of the students. Therefore, as a first step, lecturers should be aware of students’ concerns and points of view regarding the way of teaching.

This paper reports the opinion of second and fourth year undergraduate students coursing different Engineering degrees in the School of Engineering of Bilbao in the Materials Engineering department about the methodologies used in lecturing. It is necessary to know the opinion of the students to improve and boost the active learning and improve the relationship between lecturers and students. In this study, we gathered the information and opinion regarding theoretical lectures, laboratory practices and seminars by analyzing a simple questionnaire filled by students.

It is observed that the student’s opinion about teaching varies according to the course grade. It seems that in the last year of the degree they are more motivated to participate and to learn than in the second year. Therefore, they are more willing to make oral presentations and participate in group-working.

Keywords: teacher-students relationship, student’s opinions, active learning.

1 INTRODUCTION

Teaching at higher education has almost been the same for centuries as university teachers seem to be more committed towards conducting research than improving their teaching by using innovative instructional strategies. [1] However, in recent years, teacher innovation has become increasingly important for worldwide reforms in an attempt to improve education and to switch from traditional teaching practices (teacher-centered) to more creative student-centered approaches (e.g., cooperative, project-based learning). [2], [3] Since the Bologna process implementation, the student turns from a passive into an active agent with this new educational model. Recent studies show that motivation of the student and cognition (e.g., self-efficacy, attitudes, goals) are vital for the impetus of their class learning. Nevertheless, in recent years with the process in progress, it has been observed that the students are still unmotivated and they are not yet involved in the learning process. It is noteworthy also the role of the lecturer, thus, lecturer has to able to transmit knowledge but also promote curiosity and general skills, such as critical thinking or collaborative skills for improve the motivation of the students and involve them in an active teaching. [4],[5] To equip students with such as skills, critical thinking, collaboration, communication, and problem solving, lecturer are encouraged to use more student-centered teaching approaches.

In the present study we examined student’s motivation in determining their intentions to participate actively in lecture hours and collaborate to improve the quality of teaching.

2 AIMS AND METHODOLOGY

The objective of this study is to analyze the opinion of the students about the methodology used to teach “Fundamentals of Materials Science” subject in the second year and “Structural Materials” subject in the fourth year of Degree in the Industrial Technology. These subjects are imparted by the department of Metallurgy and Mining Engineering and Materials Science at the University of Basque Country (UPV-EHU). Since the implementation of Bologna Process the subjects are divided in master lectures, seminars and laboratory practices. During the master lectures the lecturer explains the basic
theory with the help of power point presentations that are also available for students in book format. The seminars will be focused on specific topics that require additional exercises to encourage teamwork and participation of students with possible occasional discussions. Thus, deepening the theoretical knowledge of the subject in a more practical and applied way is allowed. In the laboratory practices students will develop experimental work to acquire knowledge and skills of the experimental techniques employed in materials science. During the last years it has been observed that the students show lack of interest during the early years of the degree. The main objective of them is to pass the subject and to pass the course, but they don’t show interest to acquire any knowledge. This situation push lecturer to take new decisions regarding teaching methodologies. Therefore, it was considered that it was necessary to listen the opinion of the students and adapt the existing methodology to their needs. The questionnaire proposed by the lecturers provides information about the concerns and predisposition of the students. This information it is very valuable to improve the quality of the teaching and improve the lecturer-students relationship. The questionnaire is composed of different question about what kind of methodologies students prefer and what they expect to learn during the engineering degree.

3 RESULTS

The students of second and fourth year have answered a form composed for 8 questions. Below it can be observed the results obtained. To simplify the results, the following nomenclature has been used; Q: Question, Stud: Students. For example the nomenclature Q1 Stud 2 corresponds to question two answered for students of second year. These are the results of the different questions:

1 What kind of theoretical classes do you prefer?
   a) Seat, listen and take notes.
   b) Active classes. Classes that I can take part.
   c) Questions, exercises, answers and discussions.
   d) If you don’t agree propose your perfect theoretical class.

   Figure 1. Results of the first question: the figure on the left corresponds to the results of the second grade students and the figure of the right to the results of the fourth grade students.

2 What kind of laboratory practices do you prefer?
   a) Listen and take notes.
   b) Laboratory practices where I can take part after listening the lecturer.
   c) Labs where I have to overcome questions and issues by my own or in teams by proposing ideas and discussing them.
   d) If you don’t agree propose your perfect laboratory practice:
3 What do you expect to do in seminars?
   a) To solve exercises.
   b) To solve test and short questions.
   c) To use tools that bring discussion of lectures studied in class.
   d) Team work and discussion.
   e) Development of topics that are not mentioned in theoretical classes, more actual topic…
   f) If you don’t agree propose your perfect seminar class:

4 When you feel involved in classes…
   a) You learn faster and more.
   b) You feel uncomfortable.
   c) I don’t care to be involved or not.
5 If I am asked to solve question by my own and then make them exposed in front of my mates...
a) I realize that I am more aware about what is explained in class by the lecturer.
b) It is easier to fix concepts and ideas.
c) I don’t like to resolve question and problem by my own.
d) It makes me feel uncomfortable.

![Figure 5. Results of the question 5: the figure on the left corresponds to the results of the second grade students and the figure of the right to the results of the fourth grade students.]

6 Whenever I have to present a work in front of my mates...
a) I feel at first uncomfortable and insecure but then I feel rewarded.
b) It is a positive experience in all the ways.
c) I don’t like presentation cause I think they are worthless.

![Figure 6. Results of the question 6: the figure on the left corresponds to the results of the second grade students and the figure of the right to the results of the fourth grade students.]

7 What makes an engineer to be a good engineer? To be ...
a) Clever
b) Hardworking.
c) Effective.
d) Leader.
e) Persistent.
f) Committed
g) Nice
h) Individualist
i) Good communicator.
j) Problem solver.
Figure 7. Results of the question 7: the figure on the left corresponds to the results of the second grade students and the figure of the right to the results of the fourth grade students

Figure 8. Results of the question 8: the figure on the left corresponds to the results of the second grade students and the figure of the right to the results of the fourth grade students

4 CONCLUSIONS

Taking into account the results shown in the previous section, it is observed that the opinion of the student varies in function of the grade of the course. In general, students of the second year show little interest in acquiring knowledge or other skills, such as, critical thinking or collaborative skills. Their main objective is to pass the subject. This is also reflected in the way they prefer to take seminar
lectures. They prefer to solve exercises instead of being working in teams or developing topics that are not mentioned in theoretical classes. However, the opinion of the students of fourth grade is completely different. They show willingness to work in groups and to take part in fact-based discussions. This result is also reflected when students are asked about their involvement throughout lectures. In contrast to second grade students that show little initiative in taking part actively during lecture hours, the students of fourth grade are much aware that the involvement in class is very positive to learn faster and more.

Regarding presentation skills, even though most of the students think that it is a positive exercise, there is still a fraction that thinks that presentations are worthless.

Interestingly, students of second and fourth grades agree when they were asked which the requirements that a good engineer should fulfill are. It seems that effectiveness is the first requirement for that purpose followed by the capacity to work, leadership and commitment.

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