Analysis of the importance of preparing a textbook for Radiation Protection courses in an active learning methodology

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One of the objectives of European Higher Education Institutions to improve the formation of their graduates is to promote the use of active learning methodologies.

It is sometimes called a new methodology but it is as old as the teaching activity. Just remember Socrates, Plato and the Ancient Greek Academy.

Active learning methodology means active participation of students in the class.

They need a previous information to prepare discussion.

A textbook is highly necessary.
ACTIVE METHODOLOGY

Active learning Methodology

Active participation of students in their own learning

Role of teachers

- Just leading the learning process.
- Preparing necessary material to help students to achieve learning objectives.
- To provide this material.

They will learn – if they want!
**ACTIVE METHODOLOGY**

- **Students** must be the active subject of their own learning.
- **Teachers** should just supervise and direct this learning process to optimise teaching results.
  - Involving students in the development of lessons.
  - It is indispensable the personal motivation of students.

Lessons are not exposed in a traditional way. No masterclass lectures any more.

Active participation of students by discussing each lesson, even without background on the field.

Participative classes
In few words:

Main role of teachers: To stimulate students.

Main quality of students: To work, but first of all to think.
DEVELOPMENT OF EACH LESSON

- The discussion at the classroom will follow some guidelines, with several objectives in mind.
- Students must prepare the lesson previously.
- They obviously need some information to prepare the discussion.
This information can be provided in a web page (Micro Web), including notes about the matter.

Bibliography.

Exercises and questions.

Students can also use different books, journals or websites to complete the study of the lesson.

Textbook
A textbook is highly interesting (necessary) to follow an active learning methodology.

Objectives of each lesson can be clearly exposed, motivating students to participate in the class.

Furthermore, the textbook is an important tool to plan the development of the course.
A textbook was published some years ago for a course on “Radioactive Contamination”.

It includes basic concepts on radiations and radiation protection as well as the main contamination features and decontamination techniques.

Applications to radioactive and nuclear installations are also studied.
A textbook is highly interesting (even necessary) to follow an active learning methodology, so that objectives of each lesson can be clearly exposed motivating students to participate in the class.

A textbook was published some years ago for the ancient course on "Radioactive Contamination".
Despite the title, it is useful and can be used for courses such as...

“Radiation Dosimetry”

“Radioprotection”

“Radioprotection in Nuclear and Radioactive Installations”

...among other courses of the new Study Plans.
At the end of each chapter of the book it is included a summary. Its goal was to help students to reinforce concepts of the lesson. However, this summary can discourage students to deeply study the chapter writing their own summary.
Active participation of students in the class improve their learning.

Instead of a master class, a discussion is maintained, with questions addressed to the comprehension of concepts of each lesson.

It is indispensable an adequate motivation of the students.

It is necessary to provide students with information (web page, books, bibliography) so that they can prepare lessons in advance.
A textbook is highly necessary.

The importance of the textbook lies in providing the necessary information to students to prepare the class.

It is also a useful tool for the planning of the course.

And a consulting tool for the future professional life of graduates and/or engineers.
Thank you for your attention!!!