

Implication of Pharmacy degree students in Secondary Education cooperative learning

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Students of Pharmacognosy, a compulsory subject of the 3rd year of Pharmacy Degree at the University of Valencia, have implemented educational activities (flipped classroom/gamification) in the teaching of Biology subject in the Secondary Education Schools, to facilitate knowledge sharing to the students (4^o ESO) and motivate them to continue their university studies in Science. Cooperative learning and gamification may be teaching tools to increase student engagement in Science, avoiding the progressive reduction of enrolment of students in Higher Education.



High Schools involved:

- ❖ IES Escultor en Francesc Badia (Foios)
- ❖ IES Federica Montseny (Burjassot)
- ❖ IES Vicent Andrés Estellés (Burjassot)



Participants:

- ❖ Professors of Pharmacognosy
- ❖ Professors of High Schools
- ❖ Students of Pharmacognosy



Methodology

Undergraduate students prepared a cooperative work session consisting of an exposition on some of the most relevant medicinal plants, and their active constituents, followed by a practice session, in three different High Schools. Tobacco leaf was the biological raw material used for the extraction and characterization of alkaloids, being the identification of the main alkaloid made by thin layer chromatography with a nicotine standard. To motivate the pupils, a free game-based learning platform (Kahoot!) was applied performing five questions about the practice in the laboratory, getting to immediately feedback about the collaborative learning..

- ❖ Theoretical-practical presentation on basic knowledge in raw plant material with therapeutic interest.
- ❖ Most representative medicinal plants and their active constituents.
- ❖ Laboratory session on vegetal drugs control: Tobacco leaf
 - Extraction of plant material
 - Characterization of alkaloids
 - Identification of nicotine
- ❖ Kahoot! and satisfaction survey



Results



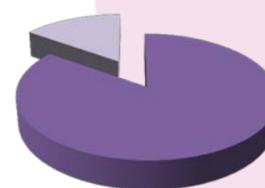
Strengthen knowledge



Teaching source



Global assessment



The activity allows degree students to get both general outcomes (autonomy, communication of information and concepts to a youngster audience), and specific outcomes (capacity for teamwork and interpersonal relationships) to efficiently manage their knowledge acquired through its leading role in the process of learning.

Conclusion

Pharmacy students encouraged High School students to continue Sciences studies, and the satisfaction survey indicated this activity was positive and useful to begin the study on the field of medicinal plants.