

Histology and Histopathology

From Cell Biology to Tissue Engineering

Volume 36 (Supplement 1), 2021

<http://www.hh.um.es>

HISTO TEACHING 2021
(The teaching of Histology in the 21st century)

HISTODOCENCIA 2021
(La enseñanza de la Histología en el siglo XXI)

September 3, 2021, Madrid, Spain

Organized by:



Centro Universitario
de la Defensa **Madrid**



Universidad
de Alcalá

DOI: 10.14670/HT21

Proposal of adaptative flipped classroom in Histology

M.P. Álvarez Vázquez

Departmental Section of Cellular Biology, Medicine School, Complutense University of Madrid. 28040 Madrid, Spain.
pilaralv@ucm.es

The flipped classroom is a blended learning methodology that reverses the traditional educational model by delivering instructional content online outside of class and spending class time on practical application assignments. In the adaptative flipped classroom, students must fulfill some reflexive questionnaires online before coming to class so that they let the teacher know what items students understand by themselves, whether there are some misconceptions and what are their difficulties so classes will be focused on the students' needs. We present a proposal to introduce this pedagogical model in the subject Cellular biology and Histology taught during the first course of the Dentistry Degree at the Complutense University of Madrid. As first-year students are not familiar with this educational model we propose to implement it in 5 out of 25 items of the syllabus. For each one, the teacher must prepare some instructive resources, mainly interactive videos and readings of documents as well as online questionnaires to check students' study. Videos and readings should be emailed one week before class with motivating and clear instructions of what they are expected to do and the deadlines. Edpuzzle and H5P embedded in Moodle are two simple and easy-to-use platforms to create interactive videos. Google Forms will be used for preparing the questionnaires. Excell program will be used to process students' answers combined to the Flip in colours approach (Prieto-Martín et al., 2019) for sorting and highlighting different kinds of answers. In-class time is re-defined and re-purposed for focus on the most difficult items, for inquiry and application and to delve into molecular and physiological aspects so students could integrate and construct their own knowledge. It is important that students realize classes will be adapted to what they have admitted not to understand or have asked for a more detailed teaching so they could appreciate teacher's feedback in class. Different gamification strategies may be applied to promote students' engagement and sustained motivation in learning. We propose to use badges, true-false and multiple-choice quizzes in Moodle and classroom response systems (Kahoot, Socrative, Mentimeter). Peer-to-peer discussions and team tasks should also be key to create active learning contexts. The flipped classroom has been proved to get not only much better formative learning and academic results but better learning experiences for both students and instructors (Prieto-Martín et al., 2017; van Alten et al., 2019).

Prieto-Martín, A., Díaz-Martín, D., Lara-Aguilera, I., Monserrat-Sanz, J., Oliva-Martín, R. y Barbarroja-Escudero J. (2017). Aspectos críticos para aplicar con éxito el modelo flipped classroom a la enseñanza de la inmunología: resultados de 5 años de experiencias en la Universidad de Alcalá. *Teach. Learn. Innov. J.*; 18-24

Prieto-Martín, A., Barbarroja-Escudero, J., Lara-Aguilera, I., Díaz-Martín, D., Pérez-Gómez, A., Monserrat-Sanz, J., Corell-Almuzara, A. y Álvarez de Mon-Soto M. (2019). Aula invertida en enseñanzas sanitarias: recomendaciones para su puesta en práctica. *F.E.M.*; 22 (6): 253-262

van Alten, D.C.D., Phielix, C., Janssen, J. y Keste, L. (2019). Effects of flipping the classroom on learning outcomes and satisfaction: A meta-analysis. *Educ. Res. Rev.*; 28: 100281