

## PLATFORMS AND APPLICATIONS USED IN TEACHING AND CONSOLIDATION OF VETERINARY PHARMACOLOGY

Ionuț Răzvan DOBRE<sup>1</sup>, Silvia Oana DOBRE<sup>2</sup>

<sup>1</sup>University of Agronomic Sciences and Veterinary Medicine of Bucharest, 59 Marasti Blvd,  
District 1, Bucharest, Romania

<sup>2</sup>Primary School Kinderstar, Berceni, Ilfov County, Romania

Corresponding author email: drrazvandobre@gmail.com

### Abstract

*In the last three years, the economic, social and health situation of the whole world has been deeply tested and not at all predictable. The way of life imposed by Covid-19 changed the paradigm of many human activities, of which education could not be an exception. Taken by surprise, at a very low level of digitization of teaching-learning activities, Romania has suddenly switched to online education. Thus, the use of platforms such as Zoom Video Communications or Microsoft Teams for teaching and moreover, avoided the freezing of the school and university year. The use of applications in support of learning, such as books creator, random cards or random wheel, have also proved their usefulness for consolidating knowledge of veterinary pharmacology.*

**Key words:** teaching, consolidation, platforms, applications, pharmacology.

### INTRODUCTION

In the last three years, the economic, social and health situation of the whole world has been deeply tested and not at all predictable. The way of life imposed by Covid-19 changed the paradigm of many human activities, of which education could not be an exception.

Taken by surprise, at a very low level of digitization of teaching-learning activities, Romania has suddenly switched to online education. Thus, the use of platforms such as Zoom Video Communications or Microsoft Teams for teaching and moreover, avoided the freezing of the school and university year (Sofi-Karim et al., 2022).

Both Zoom and Teams served to create virtual classrooms and workshops where teachers and students could interact online to carry out their teaching-learning activities, despite the social distance imposed by the global epidemic.

These platforms have made it possible to make group video calls from your laptop, PC, tablet or smartphone, by using chat, recording courses, having at your disposal a virtual whiteboard an ideal tool for distance learning.

Thus, video conferencing has become a common medium for many companies and institutions throughout the pandemic given the

fact that the vast majority of meetings, either business related or online courses, were conducted through them.

Given the circumstances of the past years the educational platforms and applications have become useful for any curricular area (Andron et al., 2021). This evolution has been adapted to suit the teaching-learning process of our faculty, including the Pharmacology Discipline (Karacsá et al., 2013).

### MATERIALS AND METHODS

The Zoom platform was founded in 2011 by Eric Yuan, an engineer who, being a Cisco employee, started from the idea that the existing platforms were outdated and dull. With Zoom, video conferencing has become a common workplace for many companies in the context of quarantine, and most online courses and meetings have been conducted through it (Huddleston, 2019). Thus, Zoom has become one of the most important video conferencing software applications in the world, being used in all fields, both for online learning and for tele-working.

Second, Microsoft launched Teams in New York in March 2017 as a useful web application for the modern educational

environment, which in November 2019 numbered 20 million users and in March 2020 it reached 44 million daily users, largely due to the COVID-19 pandemic. Microsoft Teams allows real-time sharing and editing of Word, Excel, Power Point, audio/video files, or screen sharing for up to 10,000 people (Anderson, 2018).

Examples of useful applications for online learning, which allow you to send messages, send files and participate in fully digitized lessons, all with applicability in teaching medical subjects are, among others, book creator, flash cards and or random wheels (Shi et al., 2020).

We also used them in teaching-learning the contents of the subject Pharmacology in quarantine and after that, continuing the educational activity and avoiding the freezing of the academic year (Figure 1).



Figure 1. Keeping the enthusiasm in the pandemic (foto credit Andreea Fira and Andrei Rădulescu)

Both Zoom and Teams help create a virtual classroom, where teachers and students can interact online to carry out their educational activities, despite the social distance imposed by the global epidemic. It allows you to make group video calls from your laptop, PC, smartphone or tablet, by using chat, recording courses, and having a virtual whiteboard, an ideal option for distance learning.

Applications for teaching and learning (memorization) are just as useful. Of these, Book Creator, random cards and random wheel have found their applicability in the activities carried out both at school and at home.

*Book Creator* allows you to create books in digital format that can then be assigned to a

group or learning unit. It is an application used in educational institutions around the world for teaching all types of subjects. It allows its users to create materials that include images, text or video.

*Flash cards* are cards composed of two sides as follows: The front of the card may include a question or a notion whereas the back includes the answer or the definition/explanation. It is an application that generates collaborative interactions between teachers and pupils or students.

*Random wheel* is an application that allows the teacher to randomize the retrieval of a question from a data set by spinning / actuating a digital wheel.

All these applications can be easily accessed, created and customized according to the specifics of the teaching discipline and can easily be made available to groups of pupils or students (Lee et al., 2018).

## RESULTS AND DISCUSSIONS

We have used the Zoom Meetings platform for more than 2 years given the pandemic conditions of COVID-19 - teaching regularly and continuously, while recording the sessions to be later used as an educational source. As a result of this routine, we understood, together with the students, that the best features of this rather intuitive platform are reserved for paid versions, which can be quite expensive.

The free of charge policy and the huge number of individuals allowed to attain a meeting turned Microsoft Teams into an attractive alternative to Zoom. Experience has shown us the disadvantages of the platform, the expulsion of conference participants, confusing structural files, and limited flexibility.

In both cases, we were able to use chat as an additional means of interaction, with both platforms finally proving their usefulness in overcoming the pandemic crisis.

We mentioned that, in a ranking of digitization in European countries, prepared by the European Commission in 2020 (at the beginning of the pandemic), Romania ranks 26th out of 28 countries, with a percentage of only 49% of households connected to the Internet (Figure 2).

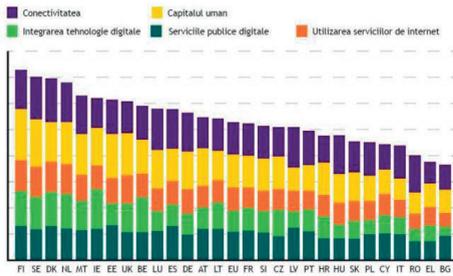


Figure 2. Digitization ranking in European countries in 2020 <https://www.dendrio.com/noutati/fonduri-europene-pentru-digitalizare-profitati-de-opportunitate/>

In this context, we resorted to the virtual learning model, then, as the epidemic showed signs of fading, migrated to a hybrid system. In both cases, the interactive educational applications have proven their worth and are still useful despite the end of the pandemic in February 2022. Together, we created a digital book using Book Creator to present the most commonly used medicinal products in the veterinary clinic for therapeutic purposes. We have named it a memorizer of medicinal products, starting from the intended purpose, that of facilitating the easier memorization of indications and therapeutic doses (Figure 3).



Figure 3. Book sheet made with Book Creator <https://app.bookcreator.com/books/0DDxeeDGTP-NmJvLzUmamg/GbMTXJTBsNiQ1geeTD6HTA>

For flash cards there are countless options with the ability to create, customize and distribute. Several platforms offer the possibility of creating and using Quizlet, World wall, Twinkle, etc. As for us, we note and recommend the use of a set of cards that explain the abbreviations used in pharmacology (Figure 4).

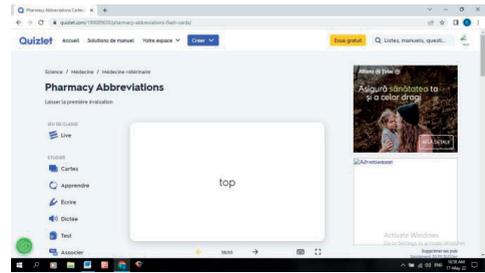


Figure 4. Set of cards with notions of pharmacology <https://quizlet.com/190089650/pharmacy-abbreviations-flash-cards/>

Random wheel can also be used in learning activities, as a way to extract the topic to be discussed/verified. Once all the clarifications have been made and all the unclear aspects have been clarified, the teacher can exclude the subject from the range of subjects. The wheel can be spin again thus choosing another topic of discussion for another student (Figure 5).

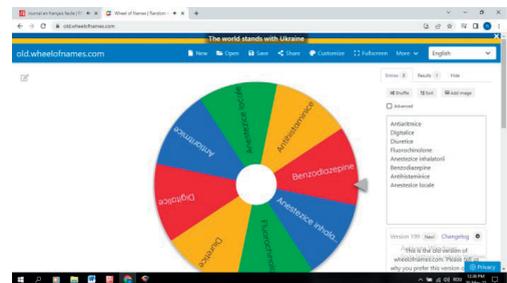


Figure 5 Random wheel <https://old.wheelofnames.com/>

All these applications are used for better learning, interaction and training of students in the learning-assessment approach taken by the Pharmacology Discipline of our faculty. By the end the pandemic most individuals enhanced their digital experience through the use of online platforms and applications.

Despite the return to the traditional teaching approach, we can still apply the experience acquired throughout recent years to improve our learning process. With the pandemic in mind, we continue our veterinary medical education.

## CONCLUSIONS

For the past three years, veterinary medical education has experienced virtual and hybrid

models. Institutional digitization has been improved with the skills of teachers and students to use digital Internet solutions.

The use of Zoom, Teams and institutional platforms created the framework for continuing the teaching-learning-assessment activity at a time when the risk of stop education activities was discussed.

Book Creator, Flash Cards, Random Wheel applications used by teachers and students increase the level of attractiveness and interaction in educational activities.

In our turn, we have used and are using these applications in the process of teaching the contents to the Pharmacology Discipline of the Faculty of Veterinary Medicine.

Educational platforms and applications continue to prove their usefulness even when it comes to returning to physical learning.

## REFERENCES

Andron, D., Kifor, Șt. (2021). Tehnologii digitale în activitatea didactică. Editura Universității Lucian Blaga din Sibiu, 150–160.

Anderson, K. (2018). Microsoft Teams for Education adds assignments and grading features. On MSFT

Jr, Tom Huddlestone (2019). "Zoom's founder left a 6-figure job because he wasn't happy and following his heart made him a billionaire". *CNBC*.

Karaksa, A., Grant, G., Anoopkumar-Dukie, S., Nirthanan, S. (2013). Student engagement in pharmacology courses using online learning tools. *American Journal of Pharmaceutical Education*, 77(6)

Lee, C. Y., White, P. J., & Malone, D. T. (2018). Online educational games improve the learning of cardiac pharmacology in undergraduate pharmacy teaching. *Pharmacy Education*, 18, p 298–302.

Shi, J., Zhou, W., Wang, Y. (2020). A preliminary study on the design of mobile educational game applied to Pharmacology teaching. *International Conference on Artificial Intelligence and Education*, 47-51.

Sofi-Karim, M., Bali, A. O., Rached, K. (2022). Online education via media platforms and applications as an innovative teaching method. *Education and Information Technologies*

[www.dendrio.com/noutati/fonduri-europene-pentru-digitalizare-profitati-de-opportunitate/](http://www.dendrio.com/noutati/fonduri-europene-pentru-digitalizare-profitati-de-opportunitate/)

[www.outreach.psu.edu](http://www.outreach.psu.edu) - Curs practic de pedagogie digitală și învățare colaborativă pentru profesori. Teach for Romania Innovation in Distance Education

[https://en.wikipedia.org/wiki/Zoom\\_Video\\_Communications](https://en.wikipedia.org/wiki/Zoom_Video_Communications)