

**Distance learning for teaching “simple  
colloids” with the assistance of moodle**

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# Introduction

- This research presents the teaching of the module “Simple Colloids” using a course management platform, based on the widely used Moodle platform.
- The main objective of the presented educational site is to enhance the teaching procedure both for students and teachers.
- The evaluation and the statistical analysis of the overall results indicate that the use of the educational site is a very useful tool to fulfill this goal. As a result students were highly engaged and satisfied with their training.

# Results

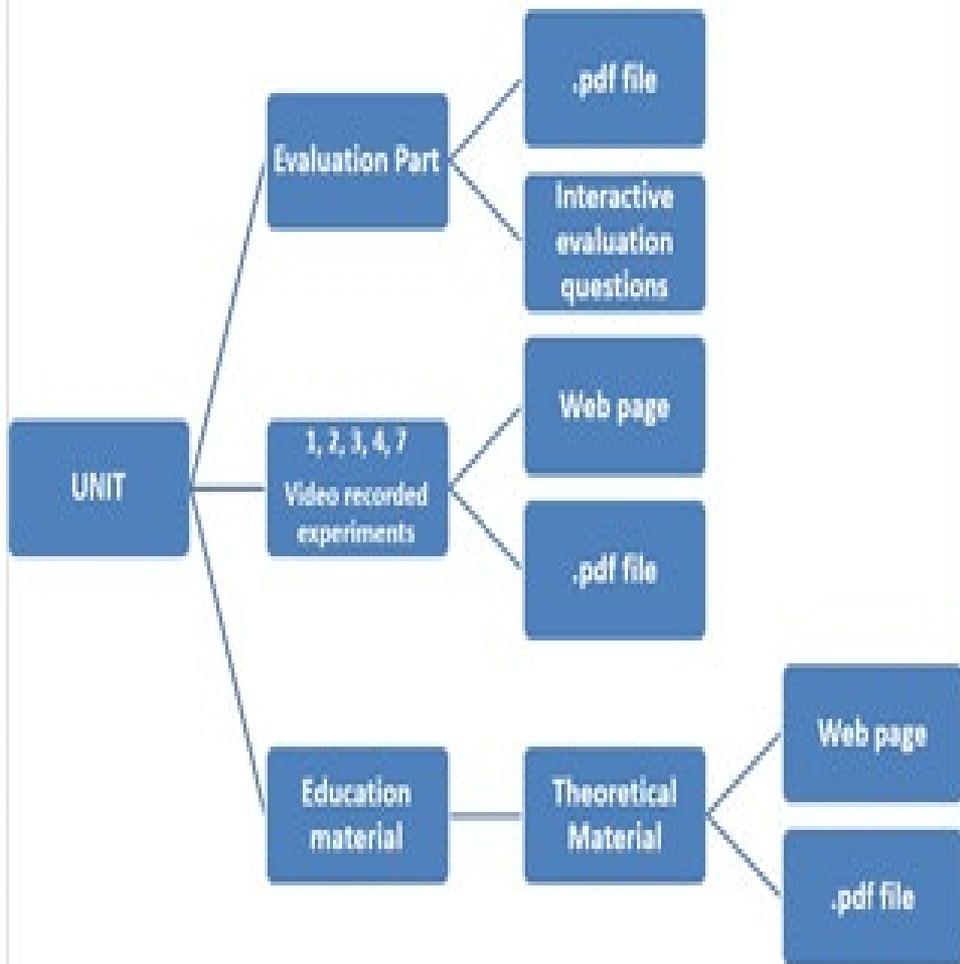


Fig.1. The nine units of the Moodle Platform

Fig.2. The educational material of each unit

# Results

TABLE 1 EXPERIENCE OF THE PARTICIPATED STUDENTS WITH PC

	Novice	Intermediate	Advanced	Superior	Distinguished
Experience with pc	0,00%	1,67%	23,33%	50,00%	25,00%

TABLE 2 THE PERCENTAGES OF THE STUDENTS RELEVANT WITH THEIR PARTICIPATION IN THE LESSONS

	Never	Occasionally	Sometimes	Often	Always
How often do they attend distance learning courses?	8,3%	8,3%	16,7%	33,3%	33,3%
How often did they attend life lessons?	4,2%	8,3%	8,3%	41,7%	37,5%

# Results

TABLE 3 EVALUATION OF ONLINE COURSES ACCORDING TO THE STUDENTS

	Poor	Fair	Good	Very Good	Excellent
The general design of the distance learning media encouraged me to show interest in the subject of the course.	4,17%	8,33%	16,67%	45,83%	25,00%
The application used for the online lessons was easy to use.	3,33%	10,83%	17,50%	47,50%	20,83%
The content of the distance learning courses was properly organized into sections.	2,50%	13,33%	26,67%	32,50%	25,00%
The help offered to me regarding this application was enough.	4,17%	16,67%	22,50%	34,17%	22,50%
The internet tools used (webcam lectures, slides, instructional videos) were quality in terms of video and audio, etc.	4,17%	15,00%	23,33%	40,83%	16,67%
It was possible to participate in the distance lecture, for a better understanding of the course.	3,33%	20,00%	23,33%	29,17%	24,17%
Distance learning encouraged me to look for other ways to learn online.	3,33%	13,33%	24,17%	30,83%	28,33%
The educational material posted in the e-class (slides, lecture notes) covered the subject of the course completely.	7,50%	10,00%	28,33%	30,00%	24,17%
The educational material is easier to use in its electronic form.	12,50%	12,50%	16,67%	41,67%	16,67%
The lecture slides combined with the teacher's explanations helped me to understand basic concepts and terminology.	7,50%	8,33%	12,50%	50,83%	20,83%
My digital skills were enough to attend and participate in distance learning courses.	4,17%	7,50%	15,83%	48,33%	24,17%
I had the necessary equipment to attend online courses.	5,83%	1,67%	20,00%	37,50%	35,00%

# Results

TABLE 4 THE SATISFACTION OF THE STUDENTS RELEVANT OF LIFELONG LEARNING COURSES

	Poor	Fair	Good	Very Good	Excellent
Communication / interaction with the teacher is easier and more effective in the classroom.	5,00%	10,83%	19,17%	40,00%	25,00%
The educational material (notes, books) is better manageable in printed form.	4,17%	11,67%	20,83%	31,67%	31,67%
Physical contact-communication with fellow students / colleagues makes the lesson more enjoyable	12,50%	12,50%	21,67%	32,50%	20,83%
Lifelong learning largely meets my learning needs in relation to online courses.	8,33%	15,83%	22,50%	25,00%	28,33%

TABLE 5 SHOWS SUGGESTION FOR BETTER E-LEARNING EDUCATION PROCEDURE

	Poor	Fair	Good	Very Good	Excellent
More student participation during the courses.	8,33%	20,00%	29,17%	21,67%	20,83%
Better information of educational staff, in order to meet the requirements of technology.	10,83%	10,00%	19,17%	24,17%	35,83%
Re-examination in the process of distance examinations.	0,83%	10,83%	12,50%	34,17%	41,67%
Creating more classes with fewer students.	19,17%	20,83%	28,33%	23,33%	8,33%
Greater attention to the planning and conduct of the course.	0,83%	10,00%	10,00%	34,17%	45,00%
Increasing the teacher-student interaction in order to make the course more contagious.	10,00%	10,00%	10,83%	40,83%	28,33%
Posting more educational material on asynchronous education platforms.	8,33%	10,00%	19,17%	34,17%	28,33%
Better organization of media related to audio and video quality.	10,00%	10,00%	17,50%	31,67%	30,83%

# Conclusions

- The educational tool developed in this paper is a proposal for the unit concerning Simple Colloids, in the teaching of chemistry, in order to be the first contact with the basic concepts of Simple Colloids.
- Moodle and other virtual teaching platforms have strengthened the ability and motivation of educational bodies concerning the support of distance learning.
- Aimed it will help with the tools provided towards a deeper understanding of Simple Colloids and finally offer a small piece of help in clarifying the broader meaning of this matter.