

COMBINATION OF MOODLE AND ZOOM SOFTWARE IN TEACHING GEOGRAPHY ONLINE FOR HIGH SCHOOL STUDENTS

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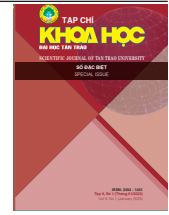
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*Online teaching,
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Abstract:

Online teaching is a form of teaching based on information and communication technology, in which teachers and students are not in the same place, not even at the same time. However, using only one software for teaching will lead to difficulties because of their inherent disadvantages. The authors have used traditional and modern research methods to analyze the advantages and limitations of the online teaching softwares: Moodle and Zoom. From there, they develop a combined process in teaching Geography, and develop a number of plans for teaching Geography in high school. Through practical testing, it shows that the effectiveness of this combined form of teaching is higher than the use of individual software in teaching. These research contents can be developed and applied to many other subjects.



KẾT HỢP PHẦN MỀM MOODLE VÀ ZOOM TRONG DẠY HỌC TRỰC TUYẾN MÔN ĐỊA LÍ CHO HỌC SINH TRUNG HỌC PHỔ THÔNG

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Thông tin bài viết	Tóm tắt
<p>Ngày nhận bài: 15/10/2022</p> <p>Ngày sửa bài: 16/11/2022</p> <p>Ngày duyệt đăng: 10/12/2022</p>	<p>Dạy học trực tuyến là hình thức dạy học dựa trên nền tảng của công nghệ thông tin và truyền thông, trong đó giáo viên và học sinh không ở cùng một chỗ, thậm chí không ở cùng một thời điểm. Tuy nhiên, việc sử dụng một phần mềm duy nhất để dạy học sẽ dẫn đến những khó khăn bởi những nhược điểm sẵn có của chúng. Nhóm tác giả đã sử dụng các phương pháp nghiên cứu truyền thống và hiện đại để phân tích ưu điểm, hạn chế của phần mềm dạy học trực tuyến Moodle và Zoom. Từ đó xây dựng quy trình kết hợp trong dạy học môn Địa lí, xây dựng một số kế hoạch dạy học môn Địa lí Trung học phổ thông. Qua khảo nghiệm thực tế cho thấy hiệu quả mà hình thức dạy học kết hợp này mang lại cao hơn việc sử dụng đơn lẻ từng phần mềm trong dạy học. Các nội dung nghiên cứu này có thể phát triển, vận dụng cho nhiều môn học khác.</p>
<p>Từ khóa:</p> <p><i>Dạy học trực tuyến, kết hợp, phần mềm Moodle và Zoom, môn Địa lí, Trung học phổ thông.</i></p>	

1. INTRODUCTION

Online teaching is a form of teaching based on Information and Communication Technology (ICT), in which teachers and students are not in the same place, not even in the same time. During the period of social isolation due to the COVID-19 epidemic, online teaching have become an optimal solution for teachers and students to continue the teaching process without having to go to class. However, using a single software for teaching will lead to difficulties because of the inherent disadvantages of each of these software. Moodle and Zoom are two of the most commonly used software today. The combination of the two software

aims to promote their advantages and limit their disadvantages in teaching.

2. DATA AND RESEARCH METHODS

2.1. Data

The data is collected from direct interviews, through surveys at some high schools on some issues related to the application of ICT in teaching Geography, especially in online teaching, blended learning.

Data is collected and analyzed from many different sources such as textbooks on theory and teaching methods, articles published in specialized newspapers

and magazines on subject experience activities, some articles that introduce online teaching, using Moodle, Zoom software.

2.2. Research Methods

a) Document research methods: Collect, systematize and analyze documents related to theory and teaching methods, especially online teaching methods, online teaching; and using Moodle and Zoom in teaching.

b) Modeling method: Proposing a combined model using Moodle and Zoom software in teaching Geography at high school.

c) Method of pedagogical investigation and method of summarizing experiences: to determine the current status of the application of ICT in teaching Geography at high school; Investigation of perception, and results after teaching online with the combination of Moodle and Zoom softwares.

d) Methods of using modern teaching facilities: Research on using a number of softwares to support website building, online teaching management software Moodle, online meeting software Zoom ... to deploy teaching Geography online in high school.

d) Pedagogical experimental method: to test the feasibility and effectiveness of the combined teaching form of Moodle and Zoom in Geography subject at high school.

e) Mathematical statistical method: Used in analyzing investigation results and processing pedagogical experimental results in a scientific and objective manner.

3. RESEARCH RESULTS AND DISCUSSION

3.1. Overview of online teaching

Online teaching is a teaching activity that takes place indirectly, teachers and students are at a distance, that is, there is a separation in terms of geographical space. The forms of content transmission are carried out indirectly such as text, sound, images, computer data, etc. The interactive process of teaching - learning is done instantaneously or slower than transmission with real time. Online teaching is mainly self-study, supported by documents in various forms, by ICT and by teachers.

Online teaching can be classified into interactive teaching and non-interactive teaching. In which interactive teaching is the exchange and interaction between teachers and students through the support of

ICT; and on the other hand, non-interactive teaching is teaching without this interaction. In the study, the authors only consider interactive online teaching activities.

3.2. Online teaching software

3.2.1. The concept of online learning software

Online learning software is a platform that provides learning materials for learners. Users can use the software to learn online and use many other tools such as classroom management, building a document repository, registering for courses, participating in online courses, receiving tests ...

3.2.2. The meaning of online learning software

Online learning software brings many benefits to users such as:

- Shorten the distance in space: Online software allows users anywhere in the world to join the class, as long as there is an internet connection. Therefore, even if you are in the US, you can still attend classes in Vietnam.

- Can teach and learn at any time: Teachers can organize a teaching session or upload teaching videos at any time. And learners can also access the software and study at any time, just have one of the smart devices such as personal computer, laptop, smartphone, tablet...with internet connection.

- Cost savings: Saving costs for building facilities, travel since the software can be used for online learning. It is estimated that learners can save 60% of the cost.

- Save time and effort: Both the teacher and the learner do not take much time and effort to travel. It is estimated that using online learning software, users can save 20-40% of time compared to traditional learning methods.

Optimizing training content: Teachers can build training programs on online learning software with many different levels for learners to choose from. These content will be built consistently and optimally. At the same time, the teacher also knows who is participating in the course, the end time and offers solutions for learners.

High flexibility: Learners can choose courses on online software according to their needs and adjust the learning speed according to their level. At the same time, learners can use the library on the software to improve their own knowledge. Learners can participate

in many courses at the same time and self-check their learning situation and progress.

Make lessons more vivid: Besides teaching, teachers can also add images, videos, and sound to the lecture to make the lesson more attractive and lively.

If online teaching tools only support direct online teaching, requiring both teachers and learners to participate at the same time, the teaching software is different. Besides direct online teaching, online teaching software also supports indirect online teaching. Teachers can upload lectures to the software in advance, and learners can access and learn at any time.

3.2.3. Moodle and Zoom software

Moodle (Modular Object-Oriented Dynamic Learning Environment) software is an open source teaching management information system (LMS). Moodle is founded and implemented by Martin Dougiamas from 1999 to present. Moodle's development strategy is to prioritize education and users. Therefore, Moodle has constantly developed and become a trusted system and is used by many schools and organizations in many countries around the world. Moodle allows you to create online courses or online learning websites with an easy-to-use intuitive interface. Users can self-install, upgrade, and build their own teaching activities with extensive and detailed supporting documents, suitable for many levels and forms of training (see Figure 1).

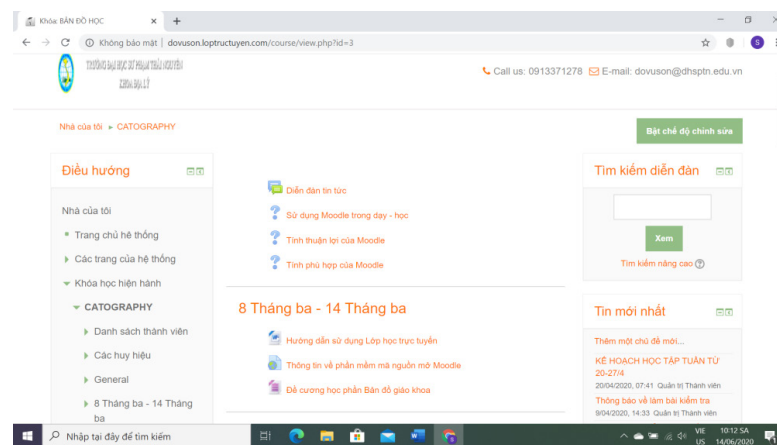


Figure 1. Moodle interface

Moodle has outstanding advantages:

- Customizable and flexible configuration to suit the requirements of teaching.
- With computers, education experts and designers are the people who develop Moodle to produce a product that meets well the user requirements.
- Users can participate in building, sharing and exchanging to make Moodle better and better.
- The Moodle community, employees, and companies are all effective supports for users.
- Users have more choices and never feel “slave” of the software.

Moodle provides the following main teaching activities:

- Website administration includes: creating topics (subjects), changing the interface of the website, adding activity modules, adding new language packs.
- User management including: creating login accounts, creating profiles, enrolling students, activities in the course, creating timetables for each individual student.

Course management including: setting courses, choosing course formats (weekly, by topic, focused discussion, ...); organizing teaching activities such as viewing lecture materials, lecture videos, participating in forums, assessment tests, exercises, ...; manage students' grades; monitor students' activities (what to read, at what time, what activity to participate in, ...); posting instructional notices; feedback information between teachers and students; Surveys include: survey notifications, receiving feedback.

Zoom (Zoom Cloud Meetings) is a simplified messaging and video conferencing software/solution on any device. Zoom was developed in 2011 by Zoom Video Communications Company, an American online conferencing service company headquartered in San Jose, California with CEO Eric Yuan. Zoom creates quick and flexible meetings for many people to join. The strict management of the meeting and many other features such as recording, video recording the meeting, taking attendance roll-call, monitoring meeting participants, etc. are advantages to exploit and use in teaching (see Figure 2).

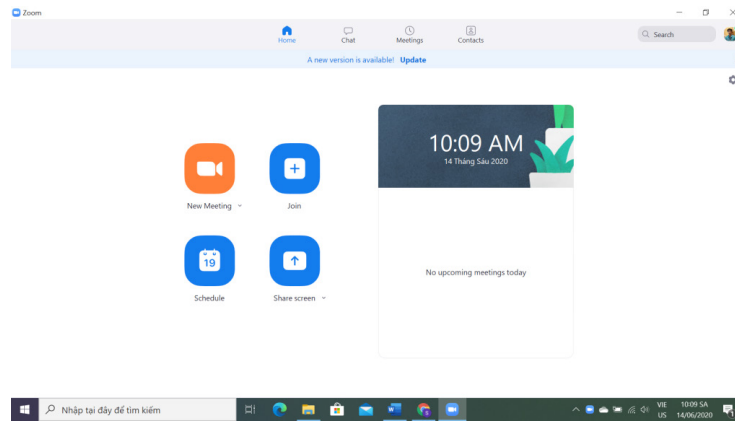


Figure 2. Moodle interface

Zoom's outstanding features:

- The quality of the conversation is good and stable, especially the voice part.
- Supports online video meetings, instant messaging or screen sharing.
- Can make friends, invite to use via Email; Can work through WiFi, Internet.
- Multi-platform support, simple interface, easy to use, suitable for regular online meetings.
- There are full chat tools, file sharing, screen sharing for many people to see together.
- Support sharing Apps on iPhone, iPad, not only on computer; support mouse and keyboard control of other people.

The combination of Moodle and Zoom creates a good solution for online teaching. Moodle is full of management features, teaching organization, testing and evaluation; Zoom Cloud Meetings creates online classes with good quality. The basic thing is to have a scientific and reasonable combination of these two softwares in the teaching process for each specific subject.

3.3. Using a combination of Moodle and Zoom in teaching High School Geography

3.3.1. The process of using a combination of Moodle and Zoom in teaching High School Geography

Step 1: Identify teaching content on Moodle and teaching content on Zoom

Determining teaching content on Moodle and teaching content on Zoom depends on the specific requirements and content of each lesson. Teachers actively divide content and activities for each lesson to ensure the highest teaching effectiveness. However, the selection of teaching content/form follows the general principle:

- Teaching content on Moodle is the content that students can read by themselves and perform self-study according to the instructions of the program while still ensuring the quality of learning. Moodle will support most activities in the process of organizing online teaching.
- Teaching content on Zoom is the content that needs explanation, guidance, direct exchange between teachers and students, helping teachers and students communicate with each other directly through images and sounds, almost like a face-to-face class learning.
- The division of teaching content on both softwares must take into account the balance in the lesson, teaching content and psychological problems, and students' self-study ability.

Step 2: Guide to use the softwares to organize teaching

Based on the instructions of software manufacturers, teachers guide the students to learn and log-in to conduct learning. This instruction needs to be through the support of Internet services (zalo, E-mail, facebook,...).

Bước 3: Organize combined teaching

- Organizing teaching on Moodle: Students log-in and participate in the course, including the following activities: Read the notices of the teacher; Participating in reading documents, watching video lectures, reading reference materials; Join online forums; Do exercises online (individual/group); Take the test online. These activities are completely arranged by students on their own initiative and are not required to follow a fixed schedule. Students are also proactive about the content of learning activities (what to watch, which activities to participate in, which activities before, after, ...)
- Organizing teaching on Zoom: Students log-in and conduct learning like in a traditional class, the only difference is they are not concentrated in the same place.

Step 4. Check and evaluate learning results

Teachers combine testing and assessment using Moodle (online objective multiple-choice tests, exercises ...) with direct testing and assessment through the teaching process on Zoom. Through the test results, teachers adjust teaching methods, students self-adjust the learning process. The final assessment score must be objective, accurate, and evaluate the entire learning process of the student.

3.3.2. Designing a teaching plan using Moodle and Zoom in High School Geography

Example of Geography 11 – High School (current textbook program):

LESSON 5 - SOME ISSUES OF CONTINENTS AND POLE AREAS

SECTION 5- SOME ISSUES OF AFRICA

I. LEARNING OBJECTIVES

After the lesson, students need to understand and present the lesson.

1/ Knowledge:

- Knowing that Africa has a diverse landscape, rich in minerals, but there are many difficulties due to the hot dry climate, ...

- Young population, rapidly growing, abundant labor force but low quality of life, many diseases, ethnic wars.

- Although the economy has prospered, it is still basically underdeveloped.

2/ Skills:

- Practice map reading skills, map exploitation to analyze the meaning of the geographical position of Africa having an important strategic position in trade on two continents

- Practice the skills of exploiting pictures, tables of data about nature, population - society

- Active feedback/listening; present thoughts/ideas

- Searching and processing information, pondering/ reminiscing, contacting

3/ Attitudes: Correct awareness of natural and social phenomena occurring in the African region

4/ Orientation of forming capacity.

Competence in Geography	Competence in the lesson
Ability to use IT, Internet	X
The ability to self-study territorial integrative thinking	X
Problem solving ability	X
The ability to use the map	X
The ability to use statistics	X
Ability to use pictures, videos, models	X
The ability to draw graphs	X

II. LESSON DESIGN MATERIALS

Geography Textbook 11 - Vietnam Education Publishing House.

- Standard of Knowledge - Skills of Geography 11.

- Nature map of Africa.

- Administrative map of the world.

- Some other illustrations of pictures, videos.

III. LEARNING PROGRESS

No.	Content	Activities on Zoom	Activities on Moodle
1	- Preparation - User guide	Teacher: Instructions for using Zoom Students: Practice operations using Zoom.	Teacher: Design a timetable for students: distribute time and tasks for each work of each group of students; Moodle user manual Students: Practice operations using Module.
2	I. Some natural issues - Geographical location. - Landscape - Natural resources. - Climate. - Exploiting and using nature.	Activity 1: Learn about natural problems Teacher: Lecture, guide students to read detailed content on the document. Students: Listen to lectures, answer questions; working with the model of the globe, the natural map of Africa, generalizing about the area, population and outstanding features of the territory and geographical position, landscape, climate, minerals of the Africa; know the advantages and disadvantages from geographical location, nature.	Teacher: Guide to watch videos of lectures, illustrations, reference materials; posting topics on the forum and moderating the forum; Students: Watch videos of lectures, illustrations, read reference materials; participate in the forum, raise and answer questions on the forum.

No.	Content	Activities on Zoom	Activities on Moodle
2	<p>II. Some population and social issues</p> <p>-Some population indicators: crude birth rate, crude death rate, natural population growth, average life expectancy...</p> <p>- Education level, ethnic conflicts, epidemics...</p> <p>-Some solutions.</p>	<p>Activity2: Learn about population - social issues</p> <p>Teacher: Guide students to read the content in the textbook, answer questions and concerns; monitor the learning process of students; synthesize opinions and give comments;</p> <p>Students: Read the content; working with the African socio-demographic data table, seeing the outstanding socio-demographic characteristics of Africa; know the advantages and disadvantages of population - society.</p>	<p>Teacher: Continue to run content reading activities, forums; monitor student learning progress.</p> <p>Students: Continue reading content, watching videos, participating in forums, participating in online group activities.</p>
3	<p>III. Some economic problems</p> <p>-Diverse resources but underdeveloped economy.</p> <p>- The economy is developing in a positive direction.</p>	<p><u>Activity 3:</u> Learn about some African economic issues</p> <p>TEACHER: Can you tell us that the area has rich natural resources, but African countries are poor and underdeveloped?</p> <p>Students: Read textbooks, charts, references, exchange, discuss in groups => Group representatives report the results.</p> <p>Teacher: Comment, add more knowledge => Standardize knowledge.</p> <p>Teacher: Cause, solution of the area has implemented?</p> <p>Students: Read textbooks, charts, references, exchange, discuss in groups => Group representatives report the results.</p> <p>Teacher: Comment, add more knowledge => Standardize knowledge.</p>	<p>Teacher: Continue to run content reading activities, forums; monitor the learning process of students; online quiz design.</p> <p>Students: Continue reading content, watching videos, participating in forums; Take a short quiz at the end of the lesson.</p>

3.3.3. Comment on the combination of Moodle and Zoom in teaching Geography in high school

Combining two softwares in teaching Geography at High school is suitable for the subject. With the condition that it is not possible to organize centralized teaching, this is the optimal form of teaching that makes teaching almost as effective as teaching directly in the classroom. In addition, this form of teaching also has a number of advantages over face-to-face teaching, that is: Teachers and students do not have to travel, not necessarily synchronized teaching and learning time; strengthen capacity to use ICT; not limit the communication and exchange; rich and diverse sources of materials, especially the use of multimedia technology in teaching; the test and evaluation are objectively, accurately and quickly; The monitoring of the learning process closely, in a timely manner,...

4. CONCLUSION

The authors have used traditional and modern research methods to analyze the advantages and limitations of the online teaching software Moodle and Zoom. From there, they develop a combined process in teaching Geography, and develop a number of plans for teaching Geography in high school. Through practical testing, it shows that the effectiveness of this combined form of teaching is higher than the use of individual software in teaching. This is also the general trend of education in the world, especially in the digital era of 4.0. Successful teaching in Geography at High School is a premise to expand to other levels and subjects. This is also an opportunity for teachers to access modern teaching methods and techniques in the teaching process.

REFERENCES

- [1]. The Central Committee of the Communist Party of Vietnam (November 2013), *Resolution of the 8th Conference, the XI Central Committee (Resolution No. 29-NQ/TW), Fundamental and comprehensive renovation education and training, meeting the requirements of industrialization and modernization in the context of a socialist-oriented market economy and international integration*, Hanoi.
- [2]. Ministry of Education and Training (2018) *General Education Program - Geography*, issued together with Circular No. 32/2018/TT-BGDĐT dated December 26, 2018 of the Minister of Education and Training, Hanoi.
- [3]. Do Vu Son (2016), *Geography Online Teaching Textbook*, Thai Nguyen University Publishing House, Thai Nguyen.
- [4]. <https://vi.wikipedia.org/wiki/Wikipedia> accessed 11/18/2022.