

CHANCES AND CHALLENGES OF ONLINE ASSESSMENT: HANOI OPEN UNIVERSITY CASE

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Abstract: *The purpose of this case study is to share the authors' involvement and observations in applying online testing as a reliable and effective academic achievement assessment tool for students of Hanoi Open University before, during, and after the complicated COVID-19 pandemic. This case clearly shows the application of information technology in the field of training, particularly for the organization of online assessments in various ways that combine objective multiple-choice tests and combined with online oral tests between lecturers and students. With over ten years of experience organizing and operating education services in a combined online and offline environment, Hanoi Open University has proactively applied information technology to solve difficulties and challenges in different periods of the world in general and Vietnam in particular. The widespread application of social distancing in Vietnam during the complicated development of the COVID-19 pandemic has created a huge obstacle to assessing learning outcomes at all educational levels. Therefore, the thorough application of information technology to online assessment has become a promising solution to this problem in many parts of the world. Authors with many years of experience in tech have collaborated with educational administrators to create a way to organize online assessments (both practical and theoretical) without physical contact between students and lecturers so that the maintenance of teaching at Hanoi Open University has been and continues with a new impetus following the common new normal trend of Vietnam and around the world.*

Keywords: *Remote online examination, covid19 pandemic, edtech,...*

I. Introduction

HOU was established in 1993 to bring learning opportunities to everyone. Since its establishment until now, HOU has maintained and continuously developed multi-disciplinary distance learning programs. With hundreds of thousands of graduates, HOU has provided high-quality human resources for society.

Currently, HOU has two forms of distance learning: online and face-to-face. With online distance learning EHO: students study and evaluate the process through the University's LMS system. In the form of face-to-face distance learning: students study offline at training stations nationwide. Both forms of distance learning require students to take final exams offline. Although LMS has met very

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well for the learning process/assessment of students, before 2019, the Ministry of Education and Training did not allow the application of online exams. Therefore, HOU still conducts examinations in the traditional way for students in all training systems. The traditional forms of organizing exams using HOU's offline method include multiple-choice and essay. These exams are mainly held at training stations or centralized test sites managed by HOU. The organization of the exam in the form above is also applied to students of the formal training system, but with additional oral testing and presentation.

II. Theoretical basic

2.1. Definition

Online assessment, also known as an e-assessment or computer-based evaluation, refers to using digital technologies to evaluate, measure, and document an individual's knowledge, skills, and abilities. This assessment method has become increasingly popular in various sectors, such as education, corporate training, and certification programs. Online assessments offer advantages over traditional paper-based evaluations, such as increased efficiency, convenience, and accessibility.

With the rapid advancements in technology and internet connectivity, online assessments have evolved to include various forms, such as multiple-choice questions, essays, simulations, and interactive tasks. These assessments can be either synchronous, where participants take the test simultaneously, or asynchronous, where individuals complete it at their own pace simultaneously, or asynchronous, where individuals complete the test at their own pace.

2.2. Benefits of online assessments

Key benefits of online assessments include:

- Flexibility: Participants can take assessments at their convenience, often without the need for physical attendance at a testing centre.

- Immediate feedback: Automated scoring systems provide instant results and feedback, enabling quicker identification of knowledge gaps and areas for improvement.

- Adaptive testing: Online assessments can adapt to an individual's performance, presenting questions of varying difficulty based on previous responses.

- Enhanced security: Digital systems can help prevent cheating by employing advanced security measures, such as proctoring, randomized questions, and time limits.

- Cost-effectiveness: Electronic assessments often have lower administration costs, eliminating the need for paper-based materials and manual scoring.

- Environmental benefits: Online assessments reduce the use of paper, contributing to a more sustainable and eco-friendly approach to testing.

Despite the advantages, some challenges persist, such as technological limitations, accessibility issues for individuals with disabilities, and concerns about the validity and reliability of online assessments. Nevertheless, as technology advances and best practices are adopted, online assessments will play an increasingly significant role in evaluating individuals' knowledge and skills in a digital world.

III. Research methods

This paper aims to investigate the impact of online assessments on student performance and engagement, employing a mixed-methods research design to collect and analyze data from multiple sources. By combining quantitative and qualitative approaches, this study seeks to provide a comprehensive understanding of the effects of online assessment implementation in higher education settings.

The quantitative component of the study will involve a quasi-experimental design, comparing the performance and engagement of students exposed to online assessments with those participating in traditional paper-based assessments. Data will be collected through pre-and post-tests and an online engagement tracking system that measures students' interactions with course materials and assessments.

IV. Background and challenges

4.1. Background

The emergence of the COVID-19 pandemic made it difficult for the whole world to maintain normal activities. The impact of COVID-19 was huge on a global scale for more than two years (the end of 2019 to the end of 2021 was the most stressful period). Education has also been severely affected when the number of people infected with COVID-19 increased rapidly, and the mortality rate and severe symptoms increased, leading governments worldwide to apply social distancing policies on a large scale. Learners of all levels of training across the country cannot go to school; educational activities are at risk of stalling and leading to many harmful consequences if no timely solutions are taken.

Faced with that situation, the Government of Vietnam has made critical decisions to remove difficulties in the education sector through guidelines and changes in training regulations with the firm application of information technology to transform education into the Internet environment. HOU, with more than 10 years of experience organizing distance learning online, has quickly grasped and implemented the transformation of all training levels into the online form. The Ministry of Education and Training has also issued documents guiding the application of online training in universities and colleges in response to the COVID-19 pandemic. It clearly states the application of online training for learners in all training systems.

In the common spirit of the whole education industry in maintaining training and assessment activities during the complicated situation of COVID-19. With many years of experience organising online training and learning from other organizations - various projects (the KOICA project at HOU, the UNITWIN project), HOU has embarked on building a set of procedures and guidelines for organizing the online inspection and assessment for all training systems.

4.2. Challenges

With a scale of about 30,000 students studying in all training systems, the organization of converting all training activities to the online form will require a lot of effort of the entire staff/lecturers and learners to implement changes to previous training-related actions effectively.

Meanwhile, HOU's IT infrastructure for online training, which previously mainly catered to distance learning students online, needs to be upgraded to

meet the significant changing. HOU's students also are very diverse in regions with many different infrastructure conditions (Internet, mobile devices, laptops, etc.).

4.3. Solution

4.3.1. Policies, Regulations

The current assessment regulations have set out a clear sequence for organizing an exam at HOU. Therefore, even to respond flexibly to the COVID-19 pandemic, the organization of exams on technology platforms still needs to comply with the Ministry of Education and Training regulations.

With that situation, the Ministry of Education and Training also issued new regulations to remove university difficulties. In particular, allowing the broad application of technology in the examination is a very suitable basis for Hanoi Open University to offer a plan to organize the exam via online form.

4.3.2. Technology

HOU has many years of experience in applying IT to distance learning activities. We are also entirely using the support of major Cloud providers like Google Workspace for Education. The Google Meet tool is used for 90% of time-synchronous online learning sessions at Hanoi Open University.

At the same time, through projects funded by the Korean government (KOICA), collaborative research projects (UNESCO UNITWIN - KNOU), and partners from projects (Ubion). HOU's IT staff have accumulated much valuable experience and have more references for applying new technologies in training.

Specifically, HOU has used Moodle

as an LMS for distance training for more than ten years. Besides, HOU has also used LMS for many other activities, such as Private Learning Resource Repositories, Public Learning Resource Repositories – Open Courses, etc. It can be seen that Moodle provides a very large number of learning, practice, interaction, and monitoring activities between learners and instructors. From these powerful features of Moodle, it is very suitable to combine using Moodle in many sequence-controlling-tracking activities flexibly. It must also be mentioned that the high percentage of users (students, lecturers, officials) proficiently using Moodle at HOU will contribute significantly to the successful implementation of Moodle for exam operation.

4.3.3. Scenarios for examination of HOU

After a period of research, we are looking for technological solutions combined with existing regulations related to testing work. Hanoi Open University has developed a new set of online exam regulations with the following common points: Moodle LMS is used as the primary environment to manage and implement exam procedures through activities on the system, such as courses, multiple-choice tests (quizzes), grading (grading), and activity log.

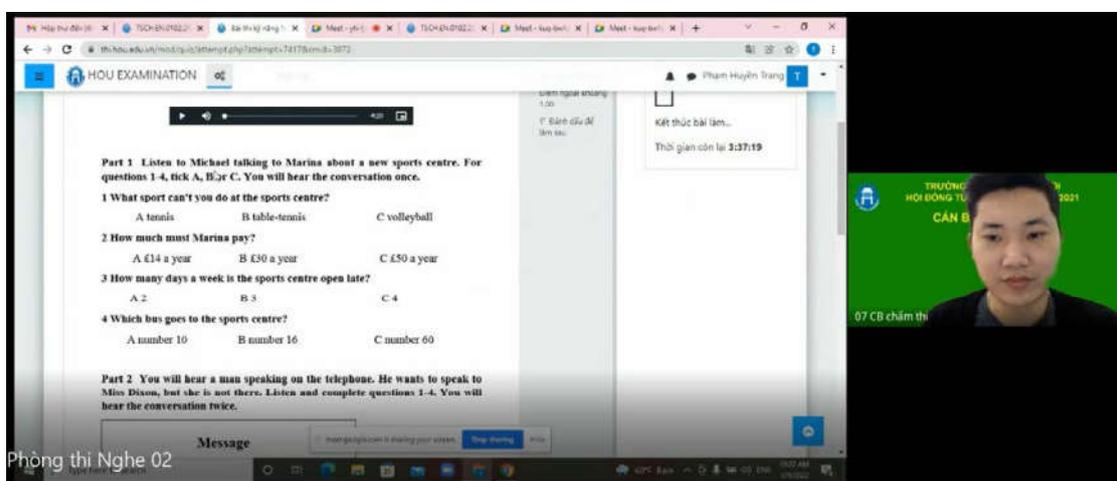
The exam organization process strictly complies with the training regulations of the Ministry of Education and Training and the current rules of the Hanoi Open University. This is the key point to facilitating online exams and ensuring the correctness of regulations. Specifically, the online exam process fully implements the work of building - preserving - distributing exam questions,

assigning proctors, supervising exams, marking exams, and announcing exam results. In addition, for some practice-oriented subjects, presentations will be organized as online presentations with individual students or in groups. Below are the online forms of HOU that have been and are currently operating:

- Oral testing form

The oral exam format can be used for subjects of language training majors. Currently, HOU has two majors: English and Chinese, that can apply to this exam

well. Depending on the size of the exam (for example, there are basic subjects that can be organized for the whole university, and there are separate subjects that each Faculty will organize their exams) that the Faculty or the Training Management Department will create the exam rooms (which are Moodle courses) on the LMS. The Department of Examinations and Quality Control will manage the exam questions and post them to the exam rooms to ensure the previous procedures of HOU.



Combination of oral testing and multiple-choice testing

During the test, the proctor and the candidate will meet face-to-face through Google Meet Rooms inside the exam rooms on the LMS. The proctor can set up two separate Google Meet rooms: 1 room will be used as a waiting room (candidates will gather in this room until the assigned time frame will move to the exam room), and 1 room will be used as an interview room (only the proctor and one candidate are answering). The supervisor will set the division of time frame for each candidate through the Quiz override function in the Quiz activity of Moodle. To provide better and faster support for proctors when doing this, HOU has developed a plug-in that integrates inside Moodle to generate

Quiz overrides according to the proctor's parameters automatically. After the candidate completes their question, the proctor will enter the score into the Quiz attempt on Moodle and continue with the next candidate.

For some general subjects of language training, such as basic English, HOU will conduct a general exam for the whole university in a combination of multiple choice and oral testing. Accordingly, candidates must take multiple-choice tests in 3 skills Listening, Reading, and Writing. The test results of these 03 skills will be used as a reference for the proctor's grading in the oral exams

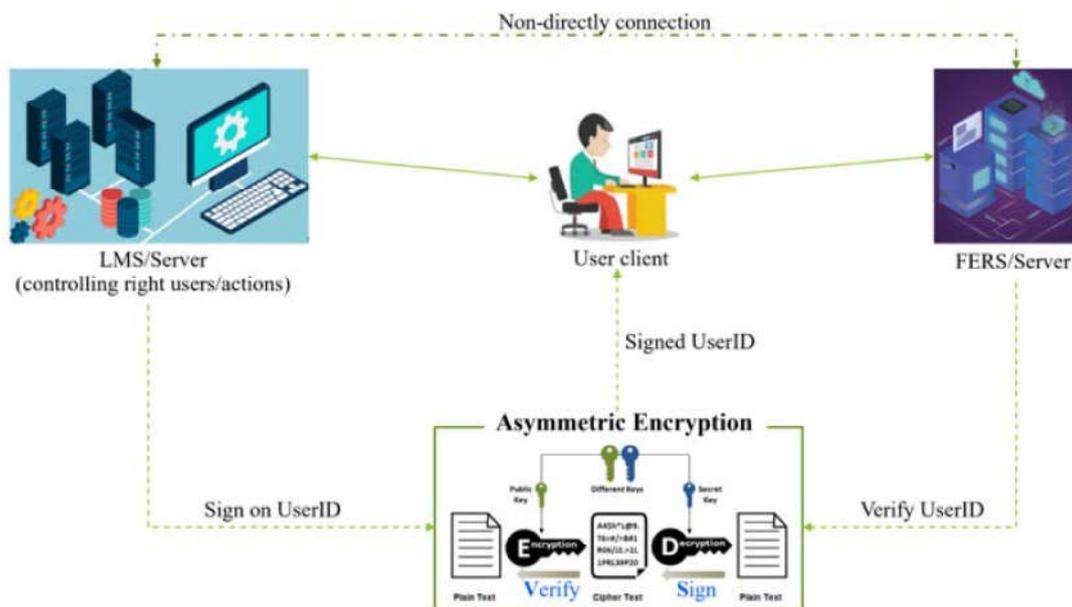
with Speaking skills.

These multiple-choice tests will be opened on LMS according to HOU's exams schedule, and candidates can only take them once for each skill. The method of organizing the speaking test sessions will be carried out in the same way as the final exam in the oral testing form mentioned above.

Supervised multiple choice testing

Besides, HOU has also tested and successfully organized the final course exams in the form of supervised multiple-

choice. The way the exam rooms are deployed and the distribution of multiple-choice questions takes place on the LMS is set up expressly for the organization of the exam (removed or disabled unnecessary Moodle modules). However, there is a difference compared to taking regular multiple-choice tests; these exam rooms will be set up with monitoring mechanisms - webcam monitoring (the candidate's face view and the entire space of the candidate sitting in their room) and take screenshots of students and their computer's screen during the multiple-choice test.



University entrance exam (for Drawing subjects)

In addition, a secure browser tool (Safe Exam Browser) was also used instead of the common browser to control the opening of applications - documents are not allowed during the exam. HOU has also previously organized multiple-choice Information Technology certification exams using the Safe Exam Browser for almost five years.

In 2020 and 2021, HOU also successfully carried out a ministerial-level scientific research project on facial

recognition - learners' expressions in the online learning environment. With the results of this topic, HOU has also, step by step, applied facial recognition techniques to candidates when participating in online exams on the LMS.

Especially in 2021, to solve the university entrance exam with students applying for the Design and Arts major. It was difficult to move to the centralized exam place for students (at this stage, the Vietnam government was using

regulations restricting movement between localities). The Hanoi Open University has boldly pioneered to organize the entrance exam for the Drawing exam in an online form.

How the exam is organized will combine the distribution of exam question through multiple-choice tests on the LMS, and candidates will take the paper-based drawing test (HOU send it to their home), then the candidate seals the work and submits it by the post office to HOU. Thanks to its initiative and rich experience in applying LMS in many different situations, HOU has been one of the first universities to complete the organization of the entrance exam for the Design and Arts majors in 2021.

V. Result

Since 2020, Hanoi Open University has continuously maintained online exams for all training systems. The percentage of students passing the exam is around 80% (almost the same as the traditional examination form). Specifically for the general exam subjects: approximately 700 exam rooms have been opened, and 18,000 turns of students - 700 turns of lecturers participated in the combined

multiple choice test and oral test format for English subjects; opened approximately 1800 exam rooms and had 38,000 turns of students - 1800 turns of lecturers for political theory subjects (philosophy, etc.). For the individual exams of each faculty in the form of oral testing, about 3,000 exam rooms have been held since 2020 until now. For a supervised multiple-choice test, HOU has successfully piloted the exam organisation for more than 2000 students of the Faculty of Economics. For the entrance exam for the Design & Arts major in 2021, Hanoi Open University successfully organized the exam for about 600 candidates from many different provinces/cities.

Hanoi Open University has also conducted a large-scale survey with students studying in different HOU training systems to collect students' opinions and evaluations about the online exam organization. With more than 6000 responses, in general, the organization of the assessment in the online form of HOU has brought about many effects and positive feedback from learners. Below is the survey statistic result (the percentages have been rounded up):

Survey questions	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Infrastructure & Technology platform					
Does the online exam system meet the exam requirements of learners?			2%	18%	80%
Examination organizing					
Does the proctor log in on time and ensure enough time for the online exam?				5%	95%
The exam schedule and duration are arranged scientifically, convenient for students to take the online exam.				10%	90%
The LMS is designed for students to submit exams smoothly.					
Online examination forms					

Exam forms are designed and organized in accordance with online exam activities.			5%	15%	80%
Is the online examination and submission organized scientifically, and convenient for students?					
University's supporting					
Specific, detailed, and widely available online exam guidance process?				7%	93%
The online exam plan is disseminated publicly and in a timely manner?				10%	90%
Does the university provide guidance, training, and practice tests for students before starting the official exam?				20%	80%
Does the university support timely resolution of difficulties during the beginning of the online exam?			2%	13%	85%
The university supports providing services such as calling, and communicating through channels (Zalo, Facebook, ...) to solve problems?				8%	92%
General satisfaction					
I am satisfied with the university's online exam system			1%	5%	94%
I am satisfied with the university's support during the online exam			3%	13%	84%
I am satisfied with the quality of the university's online exam organization				10%	90%
I still hope that the online exam will be organized by the University in the near future			7%	23%	70%

IV. Conclusion

“Difficulties are just things to overcome, after all”, said Ernest Shackleton – a famous Antarctic explorer. The COVID-19 pandemic has come to the world and brought about many positive and negative changes in all aspects of the previous life. However, those difficulties and obstacles will further promote the rapid transformation and adaptation of society in general and the education sector, in particular. Hanoi Open University has made good use of the available experience and timely grasped the flexible reform of the education sector in Vietnam to overcome the most difficult times in the past two years. With this paper, we would like to share our experiences and absorb experiences from the open universities in the region and other partners to improve

the quality of training and assessment of open education in Vietnam and the region.

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