Students' Recommendations To Online Examination Organisation

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Article Info	Abstract
	This paper is aimed at presenting the students' assessments and recommendations on how to organize an online exam efficiently. The research was conducted by using quantitative method with 440 samples from the School of Social Sciences and Humanities at a university in the Mekong Delta, Vietnam. The research findings indicate that several techniques such as using camera and microphone surveillance to prevent cheating, providing prompt feedbacks and supports during exam, maintaining exam security, creating question banks that are highly accurate, and designing exams that align closely with the curriculum and student competency are strongly proposed. In addition, students' suggestions to the university, the School and the teachers are included in the paper to enhance the quality of learning outcome evaluations.

Introduction

The organization of online examinations is a form of learner assessment conducted by the majority of training units during the social distancing period by the Covid-19 pandemic. Learners' assessment and suggestions are of growing interest to training institutions and teachers as it is a crucial factor in enhancing quality of education and school prestige. Currently, online learning and examinations due to social distancing have ended; however, 30% of the training program credits at most of universities in Vietnam will continue to be held online, as documented in Regulations on Undergraduate Education (MOET, 2021). Hence, it is necessary to collect students' suggestions in order to enhance the efficiency of organizing online examinations, leading to an objective and accurate evaluation of students' learning outcomes.

The results from this study are expected to benefit the University, the School of Social Sciences and Humanities, lecturers, and students. In particular, the assessment of the online examination organization will enable the University administrators to develop appropriate and timely policies to improve the effectiveness of online teaching and integrate 4.0 technology into the teaching process. Furthermore, the results of this research will be instrumental in reassessing the online examination in other schools, colleges and determining the appropriate direction for university online examinations. Once it is established, this assists the School of Humanities and Social Sciences and lecturers to evaluate students' abilities and attitudes accurately, thereby allowing them to adjust the teaching methods, provide necessary materials for teaching and building reputation for the school. To the students, the efficient organization of online examinations help to ensure fair and impartial assessment of their learning outcomes, thereby motivating them to excel in their studies. Additionally, students' families and parents will gain more confidence in the School and the University when online examination is improved to meet the increased needs of the students.

Research Purpose

The studyaims at finding solutions to improve the effectiveness of online exam organization at the School of Social Sciences and Humanities at a university in the Mekong Delta, Vietnam, contributing to assessing students' learning results fairly and objectively, thereby motivating them to strive more in learning.

Research objectives

The research aims at 2 objectives:
    (1) To investigate students' assessment of the online examination organization
    (2) To get students' suggestions on how to improve the organization of online examinations

Research Questions

To reach these objectives, two research questions are made as follows:

(1) How do the students assess of the online examination organisation at the School of Social Sciences and Humanities at a university in the Mekong Delta, Vietnam?

(2) What should be done to improve the effectness of online examination organisation at the School of Social Sciences and Humanities at a university in the Mekong Delta, Vietnam?

Conceptual Framework and Literature Review

Online examination

Online learning, often referred to as E-learning, is a form of learning that takes place on the internet, not in the traditional mode of classroom learning (Thai Nguyen University, 2021). This is a "remote" learning method, using electronic devices connected to the network to create a connection between teachers and students. Online examination is a form of exam on the online system through electronic tools with internet connection. To do so, the examinee must visit the website or applications. The online test allows candidates to take the test anywhere without having to go to a specific test location (UPM, 2020).

Online exam organisation

Many comments on how to organize the tests and what software to support the online exams have been given. In particular, Duong (2010) said that objective testing is an effective method to assess the quality of students in taking online exams. To ensure the effectiveness of online exam organization, principles to build multiple-choice questions should be applied. They are(1) testing language is suitable for students; (2) students' own views should not be asked, only facts and knowledge are focused on; (3) the wrong options must be reasonable and only 4 or 5 options should be used; (4) every sentence is grammartically connected to every option; (5) only one option is correct; (6) negative or double negative sentences are avoided; and (7) the right option must be different from the misleading ones (Duong, 2010). Duong (2010) further suggested a number of multiple-choice test making tools such as Test Professional 2008 software, UQUIZ software, ExamGen software. These tools all have special features, which can contribute to supporting the organization of online exams. In documenting a close approach to online exam management, Westin (2012) asserted that eTAP software can greatly assist in organizing online exams. This software can solve the problems of monitoring behavior, controlling candidate attendance, checking academic honesty and recording of online exam activity (Westin, 2012).

Myaloha (2021) proposed several methods to help organize the online exam. Firstly, teachers should choose the appropriate online exam platform/software that can serve both multiple choice and essay. For multiple choice, teachers need to mix questions of the same difficulty and then divide them into codes to avoid students exchanging answers with each other. Moreover, after completing the multiple-choice test, students can know the scores and answers immediately. For the essay, students can type the answer directly into the answer box or upload the answer file to the system, the answer will be saved to be scored. Teachers need to choose systems capable of recognizing and recording fraudulent behaviors such as opening parallel tabs on the browser or opening other software to search for information. Secondly, teachers need to create exam repositories to serve online exams. School should choose simple software to prepare online exam questions to avoid the situation that teachers lack knowledge of information technology. Thirdly, teachers should choose platforms that support the examination, set the number of candidates' entries, count the time, synthesize results, statistics according to information fields ... and ensure absolute integrity while conducting online exams. Fourth, the school needs to promulgate and disseminate regulations on organizing exams and assessments in the online form for all teachers and students. In addition, before the exam begins, the school can bring all students to a Microsoft Teams meeting with the teacher, which is a simple way for teachers to easily test and monitor student activity during the exam. In particular, any student can immediately contact the teacher if they have technical problems (Škopljanac-Mačina, Zakarija & Blašković, 2021). Organizing training sessions for teachers on information technology and how to use online test aids to limit difficulties when organizing online exams is essential (Nguyen, 2022).

Criteria to evaluate online exam organisation

Eight criteria to evaluate online exam organisation based on the suggestions by Duong (2010), Myaloha (2021), Tran (2022), and Tran and Nguyen (2022) were used in this study. They are: (1) Suitable testing dates, (2) Suitable testing time, (3) Suitable testing software, (4) Students were trained how to take online exams in advance, (5) 15 minutes late was accepted, (6) Students' questions during test could be properly answered, (7) Cheating behaviour could be found, and (8) Teachers professionally organize the online exams.

Solutions to improve the efficiency of online exam organization

Many scientific research works have focused on finding solutions to improve the effectiveness of online exam organization. The Ministry of Education and Training requires that the organization of periodic tests must be strictly carried out in accordance with the regulations on proper assessment of the learning quality of students. The content of the test is in accordance with the requirements for learning content and competency components of the subject (Viet Ngan, 2021).In addition, Le (2020) suggests to use one of the methods: taking advantage of online resources, aiming at real life/career, exploiting students' experiences and living environment, promoting cooperation between students, enhancing process evaluation, focusing on assessment methods to limit fraud, and increasing the provision of feedback to students.

The online test can be successfully implemented by providing immediate, detailed responses to students' questions and needs; ensure security and design a highly accurate question bank. In addition, it is also necessary to provide support for students in implementing online assessments (Tran & Nguyen, 2022). The Moodle learning management system can greatly support online learning and exams. This system allows the creation of courses on the Internet or online learning websites. Moodle also provides modules to support teaching, exam organization, assignment submission,... Using Moodle brings high efficiency, fast and accurate results (Tran, 2012). On the other hand, the use of a Learning Management System (Feud) for online learning and exams is also a viable proposition. This system has functions such as supporting test creation, grading, analyzing students' test scores to give a reasonable review direction. Besides, Feud also has a storage function like Cloud to help teachers download, save and share documents to students. In particular, Feud has an anti-cheating feature in the exam. Specifically, Feud will help to compare the candidate's image on the screen with the card image provided earlier to confirm whether it is the right test-taker or not, and this function has an accuracy of up to 99% (Han Giang, 2021).These primary works of online exam organisation are the basis for this research to develop survey questionnaires, debate with research findings and propose appropriate solutions to help improve the quality of online exam organization for the School of Social Sciences andHumanities at a university in the Mekong Delta, Vietnam.

Methods
Quantitative method
The study was conducted using quantitative method with 440 samples based on Krejcie and Morgan's (1970) sample size suggestion. A random sampling survey scored the highest proportion as the sophomores with 44.2% (n = 195). In contrast, apart from students who were behind schedule, seniors were the lowest proportion of students participating in the survey with 3.9% (n = 17) (Figure 1).
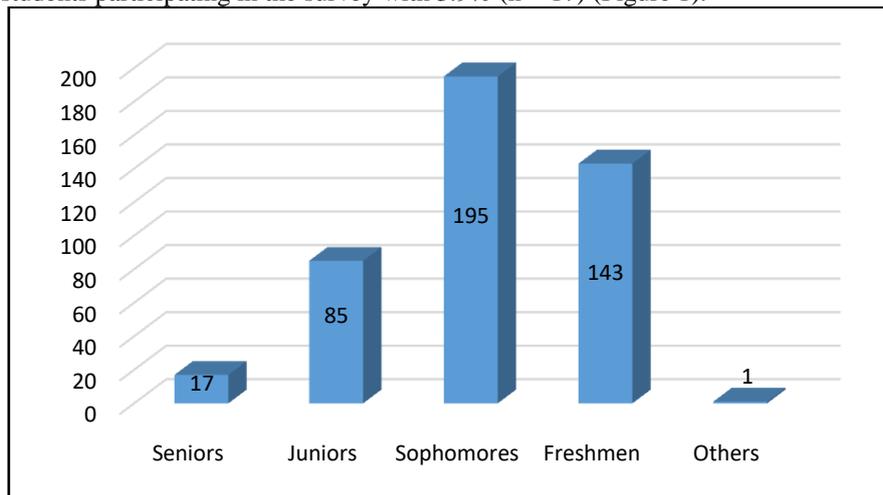

Figure 1: Sample size by course
(Source: Survey data in 8/2022)

Reliability
The Cronbach's Alpha was used to test the reliability of survey questionnaires in quantitative research. According to Vo and Huynh (2016), the Cronbach Alpha confidence factor is used to eliminate inappropriate variables, where the Cronbach Alpha confidence factor > 0.7 is suitable for use; however, it should be noted that if Cronbach Alpha is too high (> 0.95), it is likely that the yield of excess observed variables in the scale. Similarly, according to Hoang and Chu (2008), if the coefficient is less than 0.6, the questionnaire is unreliable and the closer to 0.9 is the higher reliability.

Table 1: Cronbach's Alpha

Reliability Statistics	
Cronbach's Alpha	N of Items

Reliability Statistics	
Cronbach's Alpha	N of Items
.838	99

(Source: Survey data in 8/2022)

Cronbach's Alpha coefficient analyzed from the survey's SPSS software is 0.838, which can be concluded that the survey question is reliable and entitled to use in the study. Of the 99 survey items, none had a < 0.3 credibility.

Data collecton method

Quantitative data were collected based on the actual survey of online exams at the School of Social Sciences and Humanities. A parallel survey (in-person and online) was used for data speeding without duplication of information since the online questionnaire requires participants not to respond to the electronic questionnaire if they have completed the printed ones and vice versa.

Data analysis method

SPSS software features such as descriptive statistical analysis, frequency of occurrence, percentage level, cross-comparison were used to analyze the data with regard to students' assessment on the online exam organisation and the design of online test.

Findings
Students' assessment on online exam organization

Table 2: Assessment on online exam organization

N^0	Assessment criteria	Mean
1	Suitable testing dates	4.2
2	Suitable testing time	4.11
3	Suitable testing software	4.08
4	Teachers professionally organize the online exams	3.96
5	Students' questions during test could be properly answered	3.89
6	Cheating behaviour could be found	3.8
7	Students were trained how to take online exams in advance	3.72
8	15 minutes late was accepted	3.58

(Source: Survey data in 8/2022)

Table 2 shows the findings of a general assessment on how to organize the online exams by students of the School of Social Sciences and Humanities. The average score of all views is at the agreed level (Mean from 3.41 to 4.20), of which the views are the appropriate test date and time (Mean: 4.2), Suitable test time (Mean: 4.11), suitable test software / platform (Mean: 4.08) and Lecturers professionally organize online exams (Mean: 3.96), these views have a higher percentage of completely agreed votes (5 points) than the rest, specifically accounting for over 30%. From the assessment results, it can be seen that the majority of students of the School of Social Sciences and Humanities are satisfied with the online exam organization.

Table 3: Assessment on online exam organization by course

Assessment criteria	Seniors		Juniors		Sophomores		Freshmen	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Suitable testing date	4.29	2	4.32	1	4.21	1	4.12	1
Suitable testing time	4.35	1	4.18	2	4.09	4	4.07	2
Suitable testing software	3.88	3	3.99	3	4.15	2	4.06	3
Online exam training in advance	3.41	5	3.54	7	3.88	6	3.65	7
15 minutes late was accepted	2.53	8	3.31	8	3.74	8	3.64	8
Students' questions during test could be properly answered	3.65	4	3.79	4	3.94	5	3.92	5
Cheating behaviors could be detected	3.29	7	3.65	6	3.78	7	3.98	4
Online exams were professionally organized	3.41	5	3.74	5	4.13	3	3.92	5

(Source: Survey data in 8/2022)

Table 3 displays the assessment by course on how to organize online exams at the School of Social Sciences and Humanities at a university in the Mekong Delta, Vietnam. Specifically, seniors, juniors and sophomores strongly agree with the view of the appropriate test date and time, and the freshman students also agrees with this point of view (Mean: 4.12). In addition, the suitable testing time was agreed with an average score of 4.35, which is the highest average score by the fourth year students. In addition, most of the remaining views received an average score of yes, however only *students who entered the online exam rooms up to 15 minutes late* were assessed by the seniors with an average score of disapproval ($1.81 \leq$ Mean ≤ 2.60) and the juniors assessed with a neutral average score ($2.61 \leq$ Mean ≤ 3.40). At the same time, the seniors were also neutral from the point of view that lecturers could detect students cheating during the exam (Mean: 3.29).

Students' evaluation on online test

Table 4: Evaluation on online test built

Principles to build online test	No		Unsure		Yes	
	n	%	n	%	n	%
Suitable testing language	6	1.4	20	4.5	414	94.1
Questions were mixed and divided into multiple codes	10	2.3	96	21.8	334	75.9
Only one correct answer	31	7.0	92	20.9	317	72.0
Wrong options must be reasonable	22	5.0	124	28.2	294	66.8
The answers and scores are known right after submitting the test	47	10.7	110	25.0	283	64.3
Sentences were grammatically combined	35	8.0	130	29.5	275	62.5
Maximum 4 or 5 choices	39	8.9	158	35.9	243	55.2
Correct option was not too different from the interference options	38	8.6	185	42.0	217	49.3
Students' own views were not focused, except knowledge & facts	110	25.0	154	35.0	176	40.0
Negative and double negative questions were not used	59	13.4	236	53.6	145	33.0

(Source: Survey data in 8/2022)

Table 4 presents the findings of the assessment of the guidelines employed in developing the multiple-choice tests of the School of Social Sciences and Humanities, based on the principles outlined by Duong (2010). The proportion of *Yes* responses was observed and indicated that suitable testing language (94.1%, n = 414) is a principle that the majority of teachers adhere to when administering online multiple-choice exams to students of the School of Social Sciences and Humanities. Furthermore, two principles, namely mixing questions with the same difficulty and dividing them into multiple codes (75.9%, n=334) and specifying that there is only one correct option among the choices in the same question (72.0%, n=317), are implemented in 70% of online tests. According to the students, the guidelines of designing the wrong options (66.8%, n=294), providing students with immediate answers and scores after completing the test (64.3%, n=283), constructing grammatically correct sentences (62.5%, n=275), and using only four or five options (55.2%, n=243) are met by more than 50% of teachers in implementing multiple-choice exams online. The remaining principles are agreed by less than 50% of the total number of online multiple-choice test-takers.

Table 5: Evaluation on online test built by course

(Source: Survey data in 8/2022)

Principles to build online test	Seniors		Juniors		Sophomores		Freshmen	
	Yes	%	Yes	%	Yes	%	Yes	%
Suitable testing language	16	94.1	82	96.5	187	95.9	129	90.8
Students' own views were not focused, except knowledge & facts	4	23.5	21	24.7	87	44.6	64	45.1
Wrong options must be reasonable	6	35.3	53	62.4	147	75.4	88	62.0
Maximum 4 or 5 choices	4	23.5	32	37.6	122	62.6	85	59.9
Sentences were grammatically combined	7	41.2	45	52.9	140	71.8	83	58.5
Only one correct answer	9	52.9	68	80.0	155	79.5	85	59.9
Negative & double negative questions were not used	0	0.0	18	21.2	76	39.0	51	35.9
Correct option was not too different from the interference options	6	35.3	37	43.5	105	53.8	69	48.6

Table 5 displays the results of evaluations from different courses regarding the frequency of applying certain principles when teachers create the online multiple-choice exams. More than 50% of students in all four courses agreed that teachers ensure two principles when constructing multiple-choice questions for online exams: using appropriate language and stipulating only one correct answer among the options in the same question. The principle of using appropriate language received over 90% agreement from students, while

stipulating only one correct answer among the options in the same question received 80% agreement from junior students. Additionally, over 50% of freshmen to junior students agreed that the principles of designing reasonable wrong options and connecting sentences according to grammar had been applied in online multiple-choice exams.

Students' recommendations on how to organize online exams effectively

Table 6: Students' recommendations on how to organize online exams effectively

Students' recommendations	Yes		No	
	n	%	n	%
Monitoring test-takers via cameras and microphones	**376**	**85.5**	64	14.5
Transparency in scoring and assessing academic performance	**356**	**80.9**	84	19.1
Evaluating student abilities through the process, products, and online exams	**355**	**80.7**	85	19.3
Providing timely feedback and help	**340**	**77.3**	100	22.7
Increasing student engagement to reinforce pre-exam knowledge	**339**	**77.0**	101	23.0
Ensuring security and designing a highly accurate question bank	**338**	**76.8**	102	23.2
Developing tests based on the curriculum and students' competencies	**326**	**74.1**	114	25.9
Focusing on assessment methods to limit fraud	**276**	**62.7**	164	37.3
Taking advantage of online resources	**260**	**59.1**	180	40.9
Giving comments on exam results	**257**	**58.4**	183	41.6
Using software to see sudents' faces and gestures	**254**	**57.7**	186	42.3
Applying artificial intelligence (AI) technology and IP address	**242**	**55.0**	198	45.0
Using fraud recognition system	**238**	**54.1**	202	45.9
Participating in online exam training	**237**	**53.9**	203	46.1
Resognizing students by name	**228**	**51.8**	212	48.2
Tapping into students' experiences and environments	**221**	**50.2**	219	49.8
Using traditional fraud detection methods	214	48.6	226	51.4
Using a fingerprint and eye tracking system	171	38.9	269	61.1
Using Proctor Track	143	32.5	297	67.5
Using Moodle	134	30.5	306	69.5

(Source: Survey data in 8/2022)

Data of Table 6 shows the findings on the students' suggestions to help teachers improve the effectiveness of online exam organisation. Over 80% of students agree that solutions such as monitoring test-takers via camera and microphone to prevent cheating (85.5%, n=376), transparency in scoring and evaluation of learning outcomes (80.9%, n=356), and combining evaluation of student abilities through the process, products, and online exams (80.7%, n=355) should be applied. In addition, providing timely feedback and assistance when students need it (77.3%, n=340), increasing interaction with students to reinforce knowledge before the exam (77%, n=339), ensuring security and designing question banks with high accuracy (76.8%, n=338), and creating exams that follow the curriculum and student abilities (74.1%, n=326) are solutions supported by over 70% of students. Moreover, some other solutions such as emphasizing limited cheating assessment methods (62.7%, n=276), utilizing online resources (59.1%, n=260), allowing students to receive comments on their test/exam results on the online system (58.4%, n=257), allowing students to take online question and answer exams using software that allows for face and gesture recognition (57.7%, n=254), applying artificial intelligence (AI) and IP addresses to online exams (55%, n=242), participating in online exam training sessions (53.9%, n=237), regularly calling out the name to confirm the test-taker is still in front of the computer screen (51.8%, n=228), and exploiting the students' experiences and living environment (50.2%, n=221) are considered effective solutions to improve online exams by more than 50% of students. These research findings are based to draw certain suggestions to the University, School of Social Sciences and Humanities, and the teachers.

To the university

In terms of policy, the university needs to proactively organize and implement training courses to train skills of taking exams for the students and organizing online exams for the teachers. At the same time, the university should promote and encourage students and teachers to participate in training courses of the online exam. In terms of infrastructure and equipment, the university needs to equip systems to support exam organization, such as monitoring test-takers through cameras and microphones, recognizing faces and gestures, artificial intelligence (AI) technology, IP addresses, etc. and provide training for teachers to use these systems. Weaknesses in information technology can be addressed by training teachers and students to use IT skills (through training courses, integrating IT-related subjects into the curriculum, introducing reputable websites that guide IT skills, etc.). In addition, Moodle and Fued can be deployed and guided for students and teachers to use

since these are two software programs with many special features designed and researched to better serve the online exam process. To control and ensure fairness, the university needs to provide specific regulations and penalties for students who cheat during online exams. To ensure that all students have sufficient conditions to participate in online exams, the university can support students with difficult circumstances who lack online exam equipment by giving away old phones/laptops (or new devices if possible), supporting internet connection, or lending devices for exams.

To the School of Social Sciences and Humanities

The most useful solution is thatthe School should continue to use and develop the advantages of both multiple-choice and essay formats, as well as leverage the strengths of using phones and laptops by introducing students more useful features or software for online exams. In terms of training, the School should train and advise students and teachers on how to handle unexpected situations, specifically quickly switching from wifi to 3G/4G or vice versa when there is a transmission error, seeking help (using wifi) from neighbors,... If there is a system error, quickly notify the teacher (directly in class or through phone, email, social media account, etc.), and at the same time return to the exam room or switch to another online exam device if the teacher allows or try some troubleshooting methods (based on the teacher's instructions, online or from experiences).

In terms of supporting students, the School needs to encourage teachers to promptly grasp the situation of students and provide appropriate solutions. If the problem cannot be resolved at that time, the student needs to be scheduled to retake the exam on another day with a new test. Additionally, students can be encouraged to participate in online exam training sessions by adding points for training, issuing certificates, or giving awards.

To the teachers

To ensure the effectiveness of online exams, the teachers' preparation and attentiveness are essential. In terms of training content, instructors need to guide students to proficiently use user-friendly platforms such as Azota, Gmail, Google Form, Google Meet, and Zoom. To ensure accurate responses to essay questions during online exams and to prevent incidents that could affect exam results, instructors need to provide detailed and specific instructions for both direct response entry and file submission to the system. In terms of exam construction principles, instructors should reinforce principles of constructing online multiple-choice exams through training classes, materials, and references to domestic and international studies on online learning and testing, as well as select appropriate solutions to apply to the organization of online exams. Regarding regulations, to ensure the quantity of students and quality of online exams, instructors should send exam schedules and instructions to students and parents via email, phone, etc., to create the most suitable environment for the online exam process. In terms of psychology, to minimize the stress of students due to continuous, intensive exams and the impact on their health from prolonged exposure to computer screens, instructors should know student schedules to arrange appropriate exam schedules that are not too continuous but still ensure the exam progress and establish appropriate exam completion times that are just enough but not too long. Regarding fairness, to limit cheating behaviors, instructors need to study and anticipate behaviors that students may perform during the exam process, clearly establish penalties for cheating, require students to turn on their cameras during exams, and use software that can detect cheating behaviors (control screen exit, open parallel tabs, leave the screen, etc.).

Conclusion

Students' recommendations to improve the quality of online exam organisation in the School of Social Sciences and Humanities at a university in the Mekong Delta, Vietnam are necessary. There are several potential measures that can assist instructors in administering exams efficiently, such as using camera and microphone surveillance to prevent cheating, ensuring fair assessment of students' learning outcomes, integrating assessment of student competency with their learning process, providing timely feedback and support when necessary, promoting interaction with students to strengthen their knowledge before the exam, maintaining exam security, creating question banks, and designing exams to align with the curriculum and student competency. The operation of these students' recommendations helps to ensure fair assessment of their learning outcomes as well as the quality of education.

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