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The Use of the Learning Management System "Moodle" During the Covid-19 Pandemic and Its Relationship to the Teaching Competence of Lecturers in Palestinian Universities from Their Point of View

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Abstract:
The study aimed to know the relationship of using the learning management system "Moodle" during the Covid-19 pandemic, with the teaching efficiency of lecturers in Palestinian universities from their point of view, where the researcher prepared a questionnaire consisting of (36) paragraphs distributed over four domains, and distributed the questionnaire to (80) lecturers from Gaza University, and received (65) response. After collecting data and analyzing the results, the study found that there are statistically significant differences at the level of ($\propto \leq 0.05$) for the use of the learning management system "Moodle" during the Covid-19 pandemic and its relationship to the teaching efficiency of lecturers in Palestinian universities from their point of view,this is due to the variable of scientific qualification (Bachelor – Master – PhD) in favor of the Ph.D. variant, the study recommended the need to use blended education to enable lecturers and students to complete the educational process, especially at the time of disasters.
Keywords: learning management system Moodle - teaching efficiency.

Introduction:

The Moodle educational system is an approved system in the final evaluation process in Palestinian universities under consideration,(Fares and Ismail, 2017) pointed out that the Moodle system means a dynamic learning environment, normative guidance, and one of the most widely used and widespread learning management systems, (Sabihi et al, 2014) confirmed this as a comprehensive free system to manage all learning work from recording, discussion, liaison and communication between the teacher and the student, providing content, follow-up and evaluation of students, and providing feedback to them.It is no secret that many countries have turned to distance education forcibly with the suspension of study due to the Covid-19 pandemic in March 2020, so many teachers and custodians of the educational process faced challenges in this regard imposed by the technical reality, human resources and available capabilities in each country, in addition to available opportunities that have raised the importance of Distance Education (UNESCO, 2020).There is no doubt that e-learning has an important and fundamental role in the success of the educational process, in light of the great technological development and with the spread of modern means of communication from a computer, the internet, and multiple media, such as: audio, image, and video, which have allowed a large number of people to receive education easily, and with less time and

effort (AbuShakhidem et al, 2021). However, due to the conditions that the entire world is experiencing at the moment, represented by the spread of the coronavirus, educational institutions suddenly found themselves forced to switch to distance learning to ensure the continuity of the teaching and learning process, and the use of the internet, smart phones and computers to communicate remotely with students (Yulia, 2020).Thus, the e-learning system (Moodle) has become one of the most important pillars on which the educational process is based on in light of the new Covid-19 pandemic, one of the most dangerous epidemics that hit the modern world and until this epidemic is eliminated, the developed world is accelerating to find ways and strict preventive measures to protecttheir people from this pandemic; therefore, Palestinian universities had to accelerate the development of their electronic educational websites, and issuing awareness and electronic bulletins about what the use of e-learning (Moodle) for all elements of the educational process, in addition to how it's used for both the student and the lecturer. As a result of this emergency and the transition from traditional face-to-face education to the newly emerging e-learning environment for both the student and the lecturer (Salama et al, 2020).

Theoretical framework and previous studies:

Learning management system "Moodle"

There are several types of learning management systems available, the most common of which is the learning management system based on Moodle, which is open source, free to download, a flexible, easy-to-use e-learning platform, supported by a global community and with more than 68 million users worldwide from all over the world.

Justifications for using the e-Learning Management System (Moodle) in the educational process:

One of the most important uses of e-Learning Management System (Moodle) in the educational process as mentioned by (Al-Khalifa, Abdelkader and Abdelghani, 2008)); Bassiouni (2007) are the following:

1. A suitable tool for building electronic courses in terms of the way they are presented, compiled, classified and designed.
2. The system is available in more than (75) languages, including Arabic, which facilitates its use in the educational process.
3. The system has tools to build and create electronic lessons, which facilitates their use in the educational process.
4. The system allows students to follow up on an ongoing basis, which helps the teacher to provide feedback to the learners.
5. The system can be used in testing and evaluating students continuously as well as correction and recording the results of their evaluation automatically.
6. The teacher can use the system to make discussion groups depending on the tasks and educational level.
7. The system has chat rooms and forums for educational dialogue.

The learning management system Moodle software is used to manage learning and training in various courses for one learner or more, many of the institutions all over the world adopt the learning

management system Moodle to complete the requirements of the education and training compared to the traditional classroom, and each of (Yulia, 2020) (Basilaia, Kvavadze, 2020; Yulia, 2020) sees that e-learning can be effective if the teachers did the following:

1. Organization of educational content.
2. Choose the appropriate teaching aids.
3. Identification of measuring instruments.
4. Individualize learning and meet different learning needs and styles.
5. Professional growth.

Teaching competence:

There is no doubt that the University professor is one of the most important factors in communicating knowledge to students and directing them towards thinking, deduce, and modify their behavior before moving to the labor market,therefore, his scientific and educational sufficiency remains the leading factor in the achievement of quality, effective and influential education outputs in the community (Al-Suwairki, 2018, p.3).

Also, the use of modern Information Technology in teaching, made the process of education more accessible, effective and modern, and contributed to taking care of the teaching competencies that must be possessed by the University professor to be able to prepare students, and provide them with cognitive abilities, mobility, emotionality, and strong technical skills that enable them to benefit from the University's resourcesand facilities, and prepare them to compete in the labor market (Al-Zboon, 2014).

The (Hodge et al, 2013) study urged to develop the skills of faculty members in distance education and identify the necessary tasks and skills that should be available to faculty members to modify the subjects and courses accordingly, as well as professionalism in the use of technology methods, and development in the completion of lectures remotely in a way that supports lecturers, through the rehabilitation and training of faculty members and raise their competence on teaching skills.

The (Al-Juhani, 2011) and (Shelton & Rodriguez, 2019) studies proved that the teacher's competence is an integral part of the successful integration of social media in the educational process and the creation of a school atmosphere that achieves security, trust and openness, especially with most students now familiar with social media skills.

(Ahmed, 2020) identified teaching competence in five main domains: personal and subjective characteristics, teaching and evaluation, interaction with others, cognitive domain, and technology employment.

By reviewing the educational literature related to the subject of the study, the researcher identified the teaching competencies of lecturers working at the University of Gaza in four domains as follows:

The first domain: competencies associated with the use of educational methods and techniques.

Second domain: competencies associated with the implementation of the lecture through the Moodle.

Third domain: competencies associated with motivation.

Fourth domain: competencies associated with evaluating students through the Moodle.

Problem's statement:

Before March 2020, no faculty member knew that e-learning would be the only gateway to reach students and interact with them to achieve educational goals, as the Covid-19 crisis resulted in the launch of courses for teachers in the field of e-learning and its various means intensively, to maintain the continuity of teaching and learning and achieve the requirements of the second semester of the academic year 2020, and achieve physical spacing between students to maintain their safety from infection with Covid-19.(Abu Shakhidem et al, 2021)

Hence, the researcher conducted the current study to find out the relationship of the use of the learning management system "Moodle" during the Covid-19 pandemic to the teaching efficiency of lecturers in Palestinian universities from their point of view.

The problem's statement is in the following question:

What does the use of the learning management system "Moodle" during the Covid-19 pandemic relate to the teaching efficiency of lecturers in Palestinian universities from their point of view?

The following sub-question emerges from the main question:

Are there statistically significant differences at the level of ($\propto \leq 0.05$) for the use of the learning management system "Moodle" during the Covid-19 pandemic and its relationship to the teaching efficiency of lecturers in Palestinian universities from their point of view due to the variable of scientific qualification (Bachelor – Master – PhD)?

Hypothesis:

There are no statistically significant differences at the level of (0 0.05) for the use of the learning management system Moodle during the Covid-19 pandemic and its relationship to the teaching efficiency of lecturers in Palestinian universities from their point of view due to the variable of scientific qualification (Bachelor – Master-PhD).

Objective:

The study aimed to identify the relationship of the use of the learning management system Moodle during the Covid-19 pandemic with the teaching efficiency of Lecturers in Palestinian universities from their point of view.

Significance:

- The current study may benefit academics in identifying the importance of using technological means in the educational process, especially in times of crisis.
- The current study may benefit those in charge of higher education institutions in identifying new technical and technological means to manage the educational process in time of crises and pandemics.

Definitions:

Learning management system Moodle: Free open source software, a learning platform also known as a classroom management system, or virtual learning environment. In an effort to provide a tool for educators to create electronic courses with the possibility of interaction.

Teaching competencies: (Abu Diyaʿ, 2020) defines it as the set of knowledge, skills and directions that the teacher needs to plan and implement teaching positions and evaluate them, and achieve more efficient learning in the shortest time and least effort.

Methodology:

First: Study methodology:

The researcher has used the method of analytical method that describes, identifies and clarifies a topic, and analyzes, compares and evaluates in hope of reaching scientific facts fluent in the stock of Science and knowledge through the study of the problem's past to take cues and lesson and study the present to diagnosis the strengths to build them up, and diagnosis the weaknesses to confront them, then predict the future of this problem or the decisions that may be taken in the next stages (Al-Khatib, 2006: 45).

Second: The population:

The study community consists of Gaza university lecturers, during the first semester of the academic year 2020/2021.

Third: Sample:

1- **Survey sample:**

The survey sample consisted of (30) individuals chosen in a random way, so as to ration the study tools on them through the calculation of validity and reliability in appropriate ways, and have been excluded from the sample of the study that has been applied.

2- **Field sample:**

The researcher selected a random sample of 65 lecturers from the University of Gaza who teach in the seven faculties of the University.

Fourth: Statistical description of respondents according to preliminary data:

Table (1): shows the distribution of the study sample by academic qualification

Academic qualification	Repetition	Percentage%
Bachelor	10	15.4
Master	32	49.2
PH D	23	35.4
Total	**65**	**100.0**

Table (1) shows that (15.4%) of the study sample are those who have a bachelor's degree, (49.2%) are those who have a master's degree and (35.4%) are those who have a PhD.

Fifth: Instruments:

The researcher used a questionnaire in this study consisting of two main sections:

1. The first section: personal data and consists of (academic qualification, affiliated college).
2. The second section consists of the main study variables which are:

The use of the Moodle during the Covid-19 pandemic and its relationship to the teaching competence of lecturers in Palestinian universities from their point of view and consists of (36) paragraphs distributed on (4) domains, which are:

1- The competencies associated with the use of teaching methods and techniques and consists of (9) paragraphs.
2- The competencies associated with the implementation of the lecture through Moodle and consists of (9) paragraphs.
3- The competencies associated with motivation and consists of (9) paragraphs.
4- The competencies associated with the evaluation of students through the Moodle and consists of (9) paragraphs.

Validity and reliability:

First: questionnaire validity:

The researcher codified the questionnaire paragraphs, in order to ensure the sincerity of the study tool, and the sincerity of the questionnaire paragraphs has been confirmed in two ways:

1: Virtual validity of the instrument (validity of arbitrators):

1. The researcher presented the study tool in its initial form to a group of arbitrators consisting of (5) members of the teaching staff in Palestinian universities.
2. The researcher asked the arbitrators to express their views on the appropriateness of the phrases to measure what it was developed for, the clarity of the wording of the phrases and the extent of the suitability of each phrase to the domainto which it belongs, and the adequacy of the phrases to cover each domainof the main study variables.
3. The researcher modified the wording of the statements or deleted them, or added new phrases to the study tool, as well as expressing their opinions regarding the initial data (personal and functional characteristics) required from the respondents, along with the Likert scale used in the questionnaire.
4. Some arbitrators advised the need to reduce some phrases from some areas and add some phrases to other areas.
5. Based on the observations and directions given by the arbitrators, the researcher made the amendments agreed by most of the arbitrators, where the wording of the phrases was modified and some of them were deleted or added. In the light of those views, some paragraphs were excluded and others modified to (36) paragraphs instead of (43).

2: Validity of internal consistency of the questionnaire's paragraphs:

Valid internal consistency means the consistency of each paragraph of the questionnaire with the area to which it belongs. The internal consistency of the paragraphs of the questionnaire was calculated on the survey sample size (30), and that's by calculating correlation coefficients between each paragraph and the total score of its domain.

First domain: competencies associated with the use of educational methods and techniques

Table (2) shows the correlation coefficients between each paragraph of the domain and the total degree of the domain to which it follows, which shows that the correlation coefficients shown are indicative at the level of significance (0.05), where the level of significance for each paragraph is less

than (0.05), and thus the paragraphs of the competencies domain associated with the use of teaching methods and techniques are true to what they were designed to measure.

Table (2): shows the correlation coefficient between each paragraph of the domain and the total degree of the domain of competencies associated with the use of teaching methods and techniques

#	Paragraph	Correlation coefficient	Probability value (Sig)
1.	Moodle helps me use various teaching methods and techniques to achieve the objectives of the lecture.	0.803	0.000
2.	Moodle helps me use multiple media in teaching (PowerPoint, email, multimedia, screen recording)	0.814	0.000
3.	Moodle helps me present the course in sequence	0.760	0.000
4.	Through Moodle, students can be encouraged to use the internet to obtain information.	0.804	0.000
5.	Through Moodle, students can be encouraged to use the National Remote Authentication Systemsndl.	0.661	0.000
6.	Teaching students the skills of using digital sources of information through Moodle.	0.828	0.000
7.	Moodle allows me to use multiple techniques in the presentation of the material (use of symbols, diagrams and use of images to display ideas).	0.889	0.000
8.	Moodle helps provide the content of the course in line with scientific and technological progress.	0.764	0.000
9.	Students can be encouraged to self-learn through the use of Moodle.	0.734	0.000

***The correlation is a statistic indicator at the level ($\alpha = 0.05$)**

Second domain: competencies associated with the implementation of the lecture through Moodle.

Table (3) shows the correlation coefficients between each paragraph of the domain and the total degree of the domain to which it follows, which shows that the correlation coefficients shown are indicative at the level of significance (0.05), where the level of significance for each paragraph is less than (0.05), and thus the paragraphs of the competencies domain associated the execution of the lecture via Moodle is valid to what it was put to measure.

Table (3): shows the correlation coefficient between each paragraph of the domain and the total degree of the domain of competencies associated with the implementation of the lecture through Moodle

#	Paragraph	Correlation coefficient	Probability value (Sig)
1.	Start with an introduction before proceeding to the lecture through Moodle with the elements of excitement and suspense	0.813	0.000
2.	Define my lesson with previous requirements for new learning.	0.745	0.000
3.	Start with the introduction of the lecture so that it is relevant to the topic of the lecture.	0.800	0.000
4.	Identify the actions and exercises that students perform individually or in groups through Moodle.	0.729	0.000
5.	Moodle enables me to connect the lecture to the lives of the students.	0.843	0.000
6.	Distribute the time available for the topic of the lecture among the various parts according to the need of each part.	0.862	0.000
7.	Moodle enables me to keep up with the students during the course of the lecture.	0.809	0.000
8.	Take the students' impressions of the lecture through Moodle	0.752	0.000
9.	Moodle enables me to present the ideas of the lecture topic in a coherent manner.	0.928	0.000

***The correlation is a statistic indicator at the level ($\alpha = 0.05$)**

Third domain: competencies associated with motivation

Table (4) shows the correlation coefficients between each paragraph of the domain and the total degree of the domain to which it follows, which shows that the correlation coefficients shown are indicative at the level of significance (0.05), where the level of significance for each paragraph is less than (0.05),Thus, paragraphs of the competencies' domains associated with motivation are true to what they were designed to measure.

Table (4): shows the correlation coefficient between each paragraph of the domain and the total degree of the domain of competencies associated with motivation

#	Paragraph	Correlation coefficient	Probability value (Sig)
1.	Encourage students to ask questions and train them in dialogue skills.	0.895	0.000
2.	Ask thought-provoking questions.	0.904	0.000
3.	Motivate students participating in the lecture topic.	0.879	0.000
4.	My voice is audible and I change my tone up and down with the educational situation during the recording of the lecture via Moodle.	0.866	0.000
5.	Encourage my students to work as a team.	0.883	0.000
6.	Students have the opportunity to participate through Moodle and express their thoughts and opinions	0.836	0.000
7.	Moodle enables students to contribute to the planning of educational activities	0.817	0.000
8.	Moodle gives students the opportunity to answer questions.	0.775	0.000
9.	Engage the participating students via Moodle to answer the questions asked.	0.810	0.000

***The correlation is a statistic indicator at the level ($\alpha = 0.05$)**

Fourth domain: competencies associated with evaluating students through Moodle.

Table (5) shows the correlation coefficients between each paragraph of the domain and the total degree of the domain to which it follows, which shows that the correlation coefficients shown are indicative at the level of significance (0.05), where the level of significance for each paragraph is less than (0.05),Thus, paragraphs of the competencies' domains associated withthe evaluation of students via Moodle true to what was developed to be measured.

Table (5): shows the correlation coefficient between each paragraph of the domain and the total degree of the domain of competencies associated with the evaluation of students through Moodle.

#	Paragraph	Correlation coefficient	Probability value (Sig)
1.	Moodle enables me to ask verbal questions directed towards the objectives of the lecture.	0.816	0.000
2.	Moodle enables me to give activities geared towards the objectives of the lecture.	0.921	0.000

3.	Moodle enables me to use feedback to tell students their progress in learning step by step.	0.934	0.000
4.	Moodle enables me to explain the mistakes of the students with proof and evidence.	0.844	0.000
5.	Moodle enables me to end each paragraph with a step-by-step evaluation question to ascertain the progress of the students in gaining the targeted abilities.	0.821	0.000
6.	Moodle enables students to be assigned homework oriented towards the objectives of the lecture.	0.860	0.000
7.	Moodle enables me to correct students' mistakes.	0.897	0.000
8.	Moodle enables me to put the answer key to the exam questions.	0.823	0.000
9.	Moodle enables me to announce the results of the exam on time.	0.834	0.000

***The correlation is a statistic indicator at the level ($\alpha = 0.05$)**

Second: Validity of structural consistency of the questionnaire areas:

Table (6): shows the correlation coefficient between each domain of the questionnaire with the total questionnaire score.

#	Domain	Correlation coefficient	Probability value (Sig)
1.	**Competencies associated with the use of teaching methods and techniques**	0.939	0.000
2.	**Competencies associated with the execution of the lecture via Moodle.**	0.954	0.000
3.	**Competencies associated with motivation**	0.953	0.000
4.	**Competencies associated with student assessment over Moodle.**	0.925	0.000

***The correlation is a statistic indicator at the level ($\alpha = 0.05$)**

It is clear from the table that the correlation coefficients shown are indicative at the level of significance (0.05), where the level of significance for each paragraph is less than the level of significance (0.05), and thus the domains of questionnaire of the impact of use of Moodle during the Covid-19 pandemic on the teaching efficiency of lecturers in Palestinian universities from their point of view is true to what was developed to measure.

Third: stability of the questionnaire's paragraphs.

The researcher has performed the stability steps on the survey sample itself in two ways: Cronbach's alpha and split-half coefficient

1. **Cronbach's Alpha method:**

Table (7): shows the results of Cronbach's Alpha to measure questionnaire constancy

#	Domain	Number of paragraphs	Cronbach Alpha coefficient
1.	**Competencies associated with the use of teaching methods and techniques**	9	0.919
2.	**Competencies associated with the execution of the lecture via Moodle.**	9	0.933
3.	**Competencies associated with motivation.**	9	0.952
4.	**Competencies associated with Student Assessment over Moodle.**	9	0.956
Total questionnaire score		**36**	**0.981**

It turns out that the stability coefficients range between (0.919 – 0.956) and the coefficient of total stability of total degree of questionnaire is equal to (0.981), which indicates that the study tool has a high degree of stability reassuring the researcher on its application.

2. **Split-Half coefficient method:**

The Pearson correlation coefficient was found between the rate of single-rank questions and the rate of rank questions for each domain, and the correlation coefficients were corrected using the Spearman-Brown Coefficient according to the following equation: $\frac{2r}{1+r}$ where r is the correlation coefficient, and the following table clarifies it:

Table (8): Split-Half results for measuring questionnaire constancy.

#	Domain	Number of paragraphs	Correlation coefficient	Corrected correlation coefficient
1.	**Competencies associated with the use of teaching methods and techniques**	9	0.854	0.921
2.	**Competencies associated with the execution of the lecture via Moodle.**	9	0.807	0.893
3.	**Competencies associated with motivation.**	9	0.816	0.899
4.	**Competencies associated with Student Assessment over Moodle.**	9	0.809	0.895
Total questionnaire score		**36**	**0.908**	**0.952**

***The correlation is a statistic indicator at the level ($\alpha = 0.05$)**

It is clear from the results shown in Table (8) that the value of the adjusted correlation coefficient (Spearman Brown) is statistically high, thus, the questionnaire is in its final form, and the researcher has made sure of the sincerity and stability of the study questionnaire, which makes her fully confident in the validity of the questionnaire, and its validity to analyze the results, answer the questions of the study, and test its hypotheses.

Statistical treatments:

The questionnaire was unpacked and analyzed through the statistical analysis program "Statistical Package for the Social Science (SPSS)".

The following statistical tools were used:

- Percentages, repetitions, and relative weight: this is mainly used for the purposes of knowing the frequency of a variable's categories, and is used to describe the sample of the study investigated and answer the main question and the first sub-question.
- The Cronbach's Alpha test and the Split-Half test; to reveal the validity of the questionnaire.
-Pearson Correlation Coefficient; To measure the degree of correlation, this test is based on the study of the relationship between two variables, and has been used to calculate internal consistency, structural validity of the questionnaire, and the relationship between variables.
- (T-Test) in the case of one sample to see if the average response score has reached the average score of (3), or increased or decreased, and was used to confirm the average indicator for each paragraph of the questionnaire.
- (F- test) in the case of multiple samples (One Way Anova) to see if there are statistically significant differences between several groups of independent samples.

Results:

The answers to the research's questions:

The researcher answered the study questions by analyzing the data, focusing on the highest and lowest paragraphs, interpreting their results andcomparing them with previous studies.

The answer to the main question:

What is the relationship of using Moodle during the Covid-19 pandemic to the teaching efficiency of lecturers in Palestinian universities from their point of view?

To answer this question, the (T-Test) was used on one sample to determine whether if the use of Moodle during the Covid-19 pandemic is related to the teaching efficiency of lecturers in Palestinian universities and is different from the average score, namely (3). Average, standard deviations and relative weights were calculated.

Table (9): shows the results of questionnaire's domains analysis

#	Associated competencies	Average	Standard deviation	Relative weight	Value of t-test	Probability value (sig)	Ranking	Degree of impact
1.	By means and techniques of Education	3.72	0.629	74.40	9.256	0.000	4	Big
2.	By the lecture	3.80	0.619	76.00	10.450	0.000	2	Big
3.	By motivation	3.94	0.719	78.80	10.530	0.000	1	Big
4.	By evaluating of students over Moodle	3.78	0.728	75.60	8.742	0.000	3	Big
Total questionnaire score		**3.81**	**0.602**	**76.20**	**10.898**	**0.000**		**big**

It is clear from Table No. (9) That all the averages of the different domains in terms of their relative weights, ranged between (74.40%, 78.80%), and the total score of the questionnaire as a whole has obtained a relative weight of (76.00%),this indicates that the assessment of the study sample members on the use of Moodle during the Covid-19 pandemic and its relationship to the teaching efficiency of lecturers in Palestinian universities from their point of view, came to a large degree, and the researcher attributes this to the technological awareness of lecturers and their knowledge of the importance of using electronic technological means in education, especially in times of crisis.

The order of domains according to their relative weights was as follows:

1. The third domain: motivation, it was ranked first with a relative weight of (78.80%), which indicates that it came with a high degree rating, and the researcher attributes this to the use of Moodle which motivates students and attracts them to learn and breaks the barriers of shame and fear that they face during facial learning.

2. The second domain: The actual lecture,it received the second place with a relative weight of (76%), which indicates that it came with a high rating, and the researcher attributed this to the use of Moodle which helps the lecturer implement his lectures better through the use of educational techniques.

3. The fourth domain: Students' evaluation over Moodle,was ranked third with a relative weight of (75.60%), which indicates that it came with a high rating, and the researcher attributed this to the use of Moodle which helps in evaluating students in a better way than traditional normal methods.

4. The first domain: means and techniques of Education, received the fourth place with a relative weight of (74.40%), which indicates that it came with a high rating, and the researcher attributes this to the use of teaching methods and various techniques help to learn characterized by fun and thrill and better than traditional methods.

The analysis:

First: Analysis of the paragraphs of the first domain: competencies associated with the means and techniques of Education.

Table (10): shows the average, relative weight and order of the domains' competencies' paragraphs associated with the means and techniques of Education

#	Paragraph	Average	Standard deviation	Relative weight	Ranking	Degree of impact
1.	Moodle helps me use various teaching methods and techniques to achieve the objectives of the lecture.	3.89	0.770	77.80	2	Big
2.	Moodle helps me use multiple media in teaching (PowerPoint, email, multimedia, screen recording)	3.90	0.764	78.00	1	Big
3.	Moodle helps me present the course in sequence	3.88	0.773	77.60	3	Big
4.	Through Moodle, students can be encouraged to use the internet to obtain information.	3.76	0.931	75.20	5	Big
5.	Through Moodle, students can be encouraged to use the National Remote Authentication Systemsndl.	3.26	0.815	65.20	9	Medium
6.	Teaching students the skills of using digital sources of information through Moodle.	3.58	0.882	71.60	8	Big
7.	Moodle allows me to use multiple techniques in the presentation of the material (use of symbols, diagrams and use of images to display ideas).	3.70	0.785	74.00	6	Big
8.	Moodle helps provide the content of the course in line with scientific and technological progress.	3.84	0.712	76.80	4	Big
9.	Students can be encouraged to self-learn through the use of Moodle.	3.64	0.925	72.80	7	Big

The results from the table show that the two highest paragraphs by relative weight in this domain were:

1. Paragraph (2) which stated **"Moodle helps me use multiple media in teaching (PowerPoint, email, multimedia, screen recording)"**. It ranked first with a relative weight (78.00%), which indicates that the paragraph has received a degree of approval (large) by the respondents, and the researcher attributes this to the use of multiple methods in teaching helps to learn better.

2. Paragraph (1), which stated **"Moodle helps me use various teaching methods and techniques to achieve the objectives of the lecture."** .It ranked second with a relative weight (77.80%), which indicates that the paragraph has received a degree of approval (large) by the respondents, and the researcher attributes this to Moodle helping using several means to achieve the objectives of the lecture.

The results from the table show that the two lowest paragraphs by relative weight in this area were:

1. Paragraph (5), which stated that **"Through Moodle, students can be encouraged to use the National Remote Authentication System sndl."** It ranked last with a relative weight (65.20%), which indicates that the paragraph has obtained a degree of approval (average) by the sample members, and the researcher attributes this to the fact that most students are unable to use modern documentation systems through Moodle.
2. Paragraph (6), which included **"Teaching students the skills of using digital sources of information through Moodle."** It was ranked second last with a relative weight of (71.60%), which indicates that the paragraph has received a degree of approval (large) by the respondents, and the researcher attributed this to the difficulty in providing students with some skills through Moodle.

Second: analysis of the paragraphs of the second domain: competencies associated with the implementation of the lecture through Moodle.

Table (11): shows the average, relative weight and order of the domains' competencies' paragraphs associated with the implementation of the lecture via Moodle.

#	Paragraph	Average	Standard deviation	Relative weight	Ranking	Degree of impact
1.	Start with an introduction before proceeding to the lecture through Moodle with the elements of excitement and suspense	3.80	0.711	76.00	5	Big
2.	Define my lesson with previous requirements for new learning.	3.96	0.684	79.20	4	Big
3.	Start with the introduction of the lecture so that it is relevant to the topic of the lecture.	4.20	0.642	84.00	1	Big
4.	Identify the actions and exercises that students perform individually or in groups through Moodle.	4.00	0.739	80.00	2	Big
5.	Moodle enables me to connect the lecture to the lives of the students.	3.60	0.880	72.00	7	Big
6.	Distribute the time available for the topic of the lecture among the various parts according to the need of each part.	3.95	0.769	79.00	3	Big
7.	Moodle enables me to keep up with the students during the course of the	3.33	1.004	66.60	9	Medium

	lecture.					
8.	Take the students' impressions of the lecture through Moodle	3.58	0.966	71.60	8	Big
9.	Moodle enables me to present the ideas of the lecture topic in a coherent manner.	3.75	0.866	75.00	6	Big

The results from the table show that the two highest paragraphs by relative weight in this domain were:

1. Paragraph (3), which stated **"Start with the introduction of the lecture so that it is relevant to the topic of the lecture"**. It was ranked first by a relative weight (84.00%), which indicates that the paragraph has received a degree of approval (large) by the respondents, and the researcher attributes this to the ability of the university lecturer to manage the lecture easily via Moodle.

2. Paragraph (4), which stated **"Identify the actions and exercises that students perform individually or in groups through Moodle".** It ranked second with a relative weight (80.00%), which indicates that the paragraph has received a degree of approval (large) by the respondents, and the researcher attributes this to the ability of the lecturer to organize and plan the lecture better through Moodle.

The results from the table show that the two lowest paragraphs by relative weight in this domain were:

1. Paragraph (7), which stated **"Moodle enables me to keep up with the students during the course of the lecture"** has ranked last with a relative weight (66.60%), which indicates that the paragraph has obtained a degree of approval (medium) by the sample members, and the researcher attributes this to the fact that education through Moodle is basically distance learning and there is no direct contact between the lecturer and the student, which makes the direct follow-up process rather difficult.

2. Paragraph (8), which stated **"Take the students' impressions of the lecture through Moodle"**. It was ranked second last by a relative weight of (71.60%), which indicates that the paragraph has received a (large) approval score by the respondents, and the researcher attributes this to the fact that it is difficult through distance learning to recognize the impressions of students during the course of the lecture.

Table (12): shows the average, relative weight and order of the domains' competencies' paragraphs associated with motivation

#	Paragraph	Average	Standard deviation	Relative weight	Ranking	Degree of impact
1.	Encourage students to ask questions and train them in dialogue skills.	3.92	1.013	78.40	6	**Big**
2.	Ask thought-provoking questions.	3.90	0.842	78.00	8	**Big**
3.	Motivate students participating in the lecture	3.99	0.856	79.80	3	**Big**

	topic.					
4.	My voice is audible and I change my tone up and down with the educational situation during the recording of the lecture via Moodle.	4.03	0.883	80.60	2	**Big**
5.	Encourage my students to work as a team.	3.98	0.856	79.60	4	**Big**
6.	Students have the opportunity to participate through Moodle and express their thoughts and opinions	4.07	0.834	81.40	1	**Big**
7.	Moodle enables students to contribute to the planning of educational activities	3.69	0.917	73.80	9	**Big**
8.	Moodle gives students the opportunity to answer questions.	3.93	0.826	78.60	5	**Big**
9.	Engage the participating students via Moodle to answer the questions asked.	3.91	0.804	78.20	7	**big**

The results from the table show that the two highest paragraphs by relative weight in this domain were:

1. Paragraph (6), which stated that "**Students have the opportunity to participate through Moodle and express their thoughts and opinions".** It ranked first with a relative weight of (81.40%), which indicates that the paragraph has received a degree of approval (large) by the respondents, and the researcher attributes this Moodle providing an opportunity for communication and communication between the lecturer and the student.

2. Paragraph (4), which stated that **"My voice is audible and I change my tone up and down with the educational situation during the recording of the lecture via Moodle"** It ranked second with a relative weight (80.60%), which indicates that the paragraph has obtained a degree of approval (large) by the sample members, and the researcher attributes this to the lecturer using all audio-visual means during the recording of the lecture to get it out properly.

The results from the table show that the two lowest paragraphs by relative weight in this domain were:

.1. Paragraph (7), which stated **"Moodle enables students to contribute to the planning of educational activities"**, ranked last with a relative weight of (73.80%), which indicates that the paragraph has obtained a degree of approval (large) by the sample members, and the researcher attributes this to the Moodle not enabling students to participate with the lecturer in the planning of educational activities.

2. Paragraph (2), which stated **"Ask thought-provoking questions".** It was ranked second last by a relative weight of (78.00%), which indicates that the paragraph has received a (large) approval score

by the respondents, and the researcher attributes this to the fact that the lecturer has difficulty asking thought-provoking questions through Moodle.

Fourth: analysis of the paragraphs of the fourth domain: competencies associated with the evaluation of students through Moodle.

Table (13): shows the average, relative weight and ranking the domains' competencies' paragraphs associated with the evaluation of students through Moodle.

#	Paragraph	Average	Standard deviation	Relative weight	Ranking	Degree of impact
1.	Moodle enables me to ask verbal questions directed towards the objectives of the lecture.	3.64	0.925	72.80	8	**Big**
2.	Moodle enables me to give activities geared towards the objectives of the lecture.	3.78	0.856	75.60	5	**Big**
3.	Moodle enables me to use feedback to tell students their progress in learning step by step.	3.79	0.855	75.80	4	**Big**
4.	Moodle enables me to explain the mistakes of the students with proof and evidence.	3.55	0.848	71.00	9	**Big**
5.	Moodle enables me to end each paragraph with a step-by-step evaluation question to ascertain the progress of the students in gaining the targeted abilities.	3.67	0.868	73.40	7	**Big**
6.	Moodle enables students to be assigned homework oriented towards the objectives of the lecture.	3.90	0.842	78.00	3	**Big**
7.	Moodle enables me to correct students' mistakes.	3.72	0.943	74.20	6	**Big**
8.	Moodle enables me to put the answer key to the exam questions.	3.98	0.838	79.60	2	**Big**
9.	Moodle enables me to announce the results of the exam on time.	4.04	0.779	80.80	1	**Big**

The results from the table show that the two highest paragraphs by relative weight in this domain were:

1. Paragraph (9), which stated **"Moodle enables me to announce the results of the exam on time"**. Ranked first place by a relative weight of (80.80%), which indicates that the paragraph has obtained a degree of approval (large) by the respondents, and the researcher attributes this to the use of Moodle which helps the lecturer in announcing the results of the exams on time.

2. Paragraph (8), which stated **"Moodle enables me to put the answer key to the exam questions"**. Ranked second place by a relative weight of (79.60%), which indicates that the

paragraph has obtained a degree of approval (large) by the respondents, and the researcher attributes this to the Moodle helping the teacher in the use of exams and put an answer key that's easy to correct in a better way than traditional methods of evaluation, which saves time and effort.

The results from the table show that the two lowest paragraphs by relative weight in this domain were:

1. Paragraph (4), which stated **"Moodle enables me to explain the mistakes of the students with proof and evidence"**. It was ranked last by a relative weight of (71.00%), which indicates that the paragraph has received a degree of approval (large) by the respondents, and the researcher attributes this to the use of Moodle not helping the lecturer in discussing the mistakes made by students.
2. Paragraph (1), which stated **"Moodle enables me to ask verbal questions directed towards the objectives of the lecture"**. It was ranked second last with a relative weight of (72.80%), which indicates that the paragraph has received a degree of approval (large) by the respondents, and the researcher attributes this to the Moodle not allowing the lecturer to ask verbal questions and verbal evaluation, perhaps because some lectures are recorded.

Second: answer to the first sub-question:

Are there significant differences at the level of significance ($\alpha \leq 0.05$)between the average scores of the study sample members on the use of Moodle during the Covid-19 pandemic and its relationship to the teaching competence of lecturers in Palestinian universities due to the variable (scientific qualification)?

To answer this question, one-way analysis of variance was used to test the differences between the average scores of the study sample members on the use of Moodle during the Covid-19 pandemic and its relationship to the teaching efficiency of lecturers in Palestinian universities, attributed to the scientific qualification variable, and the results are shown in Table (14)

Table (14): shows the results of the one-way analysis of variance

Domain	Source of disparity	Sums of squares	degree of freedom	Average of squares	Value of "F"	Probability value (sig)	statistical significance
Competencies associated with the use of teaching methods and techniques	**Between groups**	2.849	2	1.424	3.918	0.025	**Statistical indicator**
	Within groups	22.537	62	0.364			
	Total	25.386	64				
Competencies associated with the execution of the lecture via Moodle.	**Between groups**	1.251	2	0.625	1.662	0.198	**Not a Statistical indicator**
	Within groups	23.336	62	0.376			
	Total	24.587	64				
Competencies associated with motivation.	**Between groups**	1.371	2	0.685	1.337	0.270	**Not a Statistical indicator**
	Within groups	31.791	62	0.513			

	Total	33.162	64				
Total questionnaire score	**Between groups**	3.765	2	1.882	3.866	0.026	**Statistical indicator**
	Within groups	30.189	62	0.487			
	Total	33.954	64				
	Between groups	**2.121**	**2**	**1.061**	**3.118**	**0.051**	**Not a Statistical indicator**
	Within groups	**21.092**	**62**	**0.340**			
	Total	**23.213**	**64**				

***The value of tubular "F" at the degree of freedom "62, 2" and the level of significance 0.05 equals 3.14.**

It turns out from the table that the probability value (Sig) of the total degree of the questionnaire is equal to (0.051), which is greater than the level of significance (0.05) and the value of the calculated "F" is equal to (3.11), which is greater than the value of Tubular F, which is equal to (3.14),which indicates that there are no significant differences at the level of significance ($\alpha \leq 0.05$) between the average scores of members of the study sample on the relationship, of the use of Moodle during the Covid-19 pandemic, with the teaching efficiency of lecturers in Palestinian universities attributed to the variable of scientific qualification, as well as in the domain of competencies associated with the implementation of the lecture through Moodle, and the domain of the competencies associated with motivation except the domain of competencies associated with the use of teaching methods and techniques and the domain of the competencies associated with the evaluation of students through Moodle where the probability value (sig) for them is less than the level of significance (0.05), and to find out the statistical differences in favor of who, the Bilateral comparisons were determined varbally, the results are according to the following table, No(15):

The domain	**Academic qualification**	**Bachelor**	**Master**	**PH D**
Competencies associated with the execution of the lecture via Moodle	**Bachelor**	0		
	Master	-0.12500	0	
	PH D	-0.33333	*-0.45833	0
Competencies associated with Student Assessment over Moodle.	**Bachelor**	0		
	Master	0.28542	0	
	PH D	-0.24251	*-0.52793	0

*Differences are statistically significant at 0.05

It was found that there are statistical differences in the competencies associated with the implementation of the lecture through Moodle between the holders of master and PhD and for the benefit of the PhD holders. Also in the competencies associated with the evaluation of students through Moodle between the holders of master and PhD and for the benefit of the PhD holders.

Recommendations:

Through the findings of the researcher, she recommends the need for:

- Using e-learning alongside face-to-face education in the so-called blended learning to face any emergencies or pandemics such as the Covid-19 pandemic.
- Intensify the training of all lecturers in universities on how to use technological means in general and electronic means in particular
- Increase teachers' awareness of the importance of e-learning, especially in time of emergency.

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