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Teaching performance of chemistry teachers according to information technology and its relationship to the evaluative thinking skills of their students

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***Abstract*---**The current Research Aimed to identify Availability of Teaching Performance of Chemistry teachers According to Information Technology And its relationship to the evaluative thinking skills of their students, The research sample consisted of (70) chemistry teachers who teaching in the middle school day for boys and their Students they numbered (2800) students In the schools of Directorate of Education Kirkuk Governorate \ Iraq, The researchers used a tool to measure the Teaching performance of chemistry teachers according to information technology "research sample" and they used test to measure Evaluative thinking skills of their students, The tools were presented to a group of Experts and Arbitrators, and their psychometric properties were confirmed, The researchers used a set of statistical methods, including the one-sample t-test, the Pearson correlation coefficient, and Statistical processor for the social sciences (SPSS), The results showed the availability Teaching performance of chemistry teachers according to information technology, and There is a relationship between teaching performance according to information technology and students' Evaluative thinking skills, The Research came out with a set of Recommendations and Suggestions.

***Keywords*---**skills, information, technology, chemistry, evaluative

Introduction

Research problem

The teacher is one of the cornerstones of the educational process, Where he faces in the twenty-first century challenges and obstacles while dealing with students in the era of digital society, digital knowledge, and the free flow of information (Ismail et al., 2020: 422). He needs an environment based on information and communication technology (Internet backbone, electricity, information access points in the community, etc.) (Hussain, 2017: 118). The researchers concluded that chemistry is a prisoner of traditional methods, which were mainly based on formal theoretical aspects, memorization and indoctrination, Instead of focusing on the student and making him the focus of the educational process and developing his thinking, Using interactive techniques and modern technological means, Especially evaluative thinking, which is a type of thinking that modern education seeks to develop among students, The development of evaluative thinking is not an easy process that education undertakes, as it needs to achieve this by creating experiences and activities that fit the different stages of thinking among students. This leads us to the question that we expect to answer through our current research:

- What is the level of teaching performance of chemistry teachers according to information technology and the relationship of evaluative thinking skills to their students?

Research importance

One of the important aspects at this stage is the process of preparing and developing the teacher to suit the new roles imposed on him, Which is one of the most important aspects related to the development of the educational system The teacher is no longer only a transmitter and a source of knowledge, Rather, he became a worker, a thinker, a creator, and a renovator, rooted in values and culture, This change in the characteristics and characteristics of the twenty-first century teacher requires upgrading their competencies to a higher degree, To help them acquire new skills that enable them to implement multiple strategies to lead the teaching and learning process in a way that keeps pace with the knowledge and technological revolution, It enables him to overcome the challenges facing him in the twenty-first century by dealing with his students (Mohammed, 2006: 32).

Teaching performance occupies a unique position in the educational process, The problem of diagnosing and evaluating strengths and weaknesses in teaching practice is a very necessary issue in teacher professional development (Ibrahim, 2020: 736). The study (Al-Khayat and Ahmed, 2001: 45) indicated that the use of educational technologies, especially the computer, contributes to achieving educational goals and attracting students' attention to the topic of the lesson and making them interesting. In addition to the above, the current research came in response to the following:

1- The International Conference on “The Use of ICT in Education: Innovation for Quality, Openness and Inclusion” organized by the UNESCO Institute of Information Technology in Russia, which was held on Monday, the 5th of September 2016, to discuss the latest issues in the use of information technology and communication in education.
2- Recommendations of many conferences and seminars on educational technology in general, and e-learning in particular.

Also, evaluative thinking is of great importance, as it provides the student with various assessment methods and the necessary tools for the systematic and organized collection of information, For the purpose of interpreting evidence that can be used to provide information about progress in solving problems And providing feedback to develop skills in determining the criteria on which the judgment-making process is based to reach new learning (Brookfield, 2012 : 24).
The importance of evaluative thinking emerges as a cognitive process that takes place in the context of evaluating information. Based on the motivation and curiosity of the individual to determine the value of evidence, which involves, Identify assumptions, ask thoughtful questions, seek deeper understanding through reflection and adopt critical perspective, and make informed decisions in preparation for the given activity. Evaluative thinking It includes the attributes of reflection, recognizing the value of evidence, and verifying evidence (Buckley, 2015: 373). Based on the importance of the variables in the current research, the teaching performance of chemistry teachers according to information technology and its relationship to the evaluative thinking skills of their students, the importance of the study was divided into:

1- The importance of teaching according to information technology in facilitating the understanding of chemical concepts.
2- Evaluative thinking as an important variable, as it is the cornerstone of critical thinking, which is considered very important in our country.
3- Research results, tools and steps for subject teachers for the purpose of developing chemistry teaching.
4- The authors of chemistry curricula for the preparatory stage may benefit by employing information technology and evaluative thinking in solving problems that hinder the teaching of chemistry.
5- The results of the current research may contribute to urging the training of chemistry teachers during and after the service on the use of information technology in teaching, as well as developing the skills of evaluative thinking among their students.

Research goals

The current research aims to identify**:**

1- The level of teaching performance of chemistry teachers according to information technology.
2- The level of students' Evaluative thinking skills in chemistry in light of teachers' use of information technology.

Research limits

The current research is limited to the following limits:

1- Preparatory day schools for boys affiliated to the Directorate of Education in Kirkuk Governorate.
2- The first semester of the academic year (2021-2022).
3- Educationally qualified chemistry teachers (holders of a Bachelor's degree in Education), who have served at least three years in teaching chemistry.
4- Students of the teachers of the research sample represented by students of the fifth year of middle school for the academic year 2021/2022.

Defining the terms

The researcher identified theoretical and procedural definitions of the concepts mentioned in the research title, which are:

- ✓ Performance: The degree of achievement and completion of the tasks that make up the individual's job, which reflects how he achieves or satisfies the requirements of the job and is measured on the basis of the results he has achieved (rwayat,2001: 202)**.**

Procedural definition

The degree of achievement and completion of the tasks that comprise the job of chemistry teachers, and it reflects how the chemistry teacher fulfills or satisfies the requirements of teaching chemistry according to information technology and is measured on the basis of the score the teacher scored on the note card.

- ✓ teaching performance: Every educational activity carried out by the teacher during the educational situation, including planning skills, classroom management, the use of technological means, assessment methods, and professional growth (aleamarin, 2011 : 7)**.**

Procedural definition

All the educational activities carried out by chemistry teachers during their teaching of chemistry for the preparatory stages, including lesson planning skills, class management, the use of information technology, all assessment methods, and professional growth.

- ✓ Information Technology: Tools or means that are used in a particular field to achieve certain goals, and that the use of technology is a means or a tool and not an end in itself (birhan,2010 : 32).

Procedural definition

Tools or means that include all kinds of software, hardware, and equipment related to arithmetic and communication, whether it is a personal computer,

telephone, or information systems that are used by chemistry teachers for the preparatory stages during the lesson to achieve certain goals.

- ✓ Evaluative Thinking: A pattern of critical thinking applied in the context of evaluation, motivated by curiosity and knowledge of the value of evidence, It involves making assumptions, asking planned questions, and pursuing a deeper understanding of a situation through reflection and decision-making, in preparation for action (Buckley et al, 2015 : 375).

Procedural definition

A category of critical thinking that includes the three basic skills (The skill of finding criteria or criteria upon which the judgment-making process is based, the skill of proof or proving the accuracy of allegations, and the skill of identifying and identifying errors or misconceptions logically) It is procedurally measured by the degree that the students of the research sample obtain in chemistry when they answer the paragraphs of the evaluative thinking test used in the current research.

Theoretical background and previous studies

1- performance Teaching: Learning outcomes are directly related to the level of performance of the teacher and the quality and efficiency of his teaching, And what he does in behavioral performance and practice related to the teaching skills required of him in order to achieve the desired educational and educational goals (Wahbi, 2002:756)**.**

Components of teaching performance

- The knowledge component: It is represented in the content of the teaching skill specifications, How their psychological and educational performance and their suitability for students, The objectives of the course, its content, the most appropriate methods for its use in the educational situation, and the problems that the teacher may face during the implementation of these teaching skills and methods of overcoming them.
- The skill component: It is represented in the teacher's method to perform the teaching skill and implement the appropriate methods for it during the educational situation, which are commensurate with the objectives of the subject and its content in a way that contributes to achieving those goals and helping students to learn.
- The psychological component (emotional): It is represented in the teacher's desire to learn the required teaching skill and his sense of its importance and his conviction in his role in his behavior, and in his performance as a teacher who manages the educational situation through a group of methods that in total constitute the teaching skills.(Qatami, 2004: 170)

2- Information technology: Its concept includes all computer systems and tools that deal with extremely complex symbolic patterns of knowledge or with mental perceptual abilities and in the field of education and intelligence (Yakhty, 2005: 78).

Where (Roger Carter) distinguished between three main important aspects of information technology, which are as follows:

- The first aspect: data recording and storage.
- The second aspect: data analysis.
- The third aspect: data communication (communication) (alam El-Din, 1990: 39)

Justifications for the introduction of information technology in education

a- The social rationale: It is necessary to familiarize students with the uses and determinants of information and communication technology, and to spread digital awareness among them to adapt to the new changes that it brought to students' lives in various fields of life.
b- The vocational rationale: Assisting in qualifying students for future job opportunities related to one of the areas of information technology, such as the use of various applications such as word processing, tabular data and databases.
c- Educational rationale: It contributes to improving the teaching-learning process, and it is distinguished from many traditional means by its contribution to enriching, improving, developing and providing new ways of providing information to students, Which provides for the use of information technology to help teaching and learning; Which is the teaching and learning of academic subjects using the computer, either as a supplement or as a temporary substitute for the teacher (Al-Zayoudi, 2009: 87)**.**

3- Evaluative Thinking: Evaluative thinking links knowledge and evaluative skills, as it is very important to practice evaluation with high quality, as it is the basis on which the student rests for growth, and to provide them with maximum chances of success. Through evaluative thinking, students collect data and are ready to use it and integrate it with the changes and developments that occur, And harmonizing and reviewing evaluation decisions in the face of the events or problems that are being discussed. Evaluative thinking is a pattern of preventive thinking to face risks (Patton,2011:47).

Evaluative thinking skills

Evaluative thinking consists of three basic skills, from which several sub-skills are branched, as follows:

a- Finding criteria or criteria on which the judgment-making process is based and includes several sub-skills, including:
   - Identify the central issues and problems.
   - Recognize the basic assumptions.
   - Evaluation of assumptions.
   - Predicting the consequences of an action.
   - Relay in information.
   - Planning alternative strategies.
b- Proof or proof of the accuracy of the allegations, and several skills fall under it, including:

- Classification of information.
- Compare the similarities and differences.
- Determining the reasons mentioned and not mentioned in the situation.
- Evaluation of arguments, evidence, and arguments.
- Investigate aspects of bias, patterns and vulgar ideas.
- Judging the credibility of the source of information by investigating the credibility of the written reference.
- Recognize the charged language
- Viewing and judging the views reports.

c- Identifying and identifying errors or logically wrong ideas, and it includes three sub-skills:
- Differentiate between facts and opinions.
- Getting to know the relevant information.
- Recognizing the frail mental reasoning or false conclusions (Jarwan, 2007: 73)

Previous studies

1- Studies dealing with information technology
- (Al-Adly, 2011): This study aimed to demonstrate the importance of information technology applications in developing scientific and practical skills for students of information departments and libraries in Iraqi universities**,** The total number of samples studied was 277 distributed among 42 teachers, 176 students, and 59 librarians, Three questionnaires were prepared for the purpose of a comprehensive survey of information related to the study community: the first for faculty members, the second for students, and the third for librarians working in the central libraries of universities (Al-Mustansiriya, Basra, Mosul), The study concluded that there is a limited space for practical training for the vocabulary of the subjects related to the applications of information technology, while the rest of the teaching hours for these subjects focused on the theoretical study.
- (Nassima, 2017): aimed to identify the reality of using the elements of information and communication technology in the educational process, The sample consisted of (406) Algerian university professors from different specializations who were chosen randomly, The researcher used the statistical package for social sciences (spss) and the Microsoft Exel program, t-test for two independent samples, Pearson correlation coefficient, the alpha-kron_bach equation, The researcher applied the methods of interviews and questionnaire to familiarize himself with the subject and give a comprehensive picture of the situation of information and communication technology in Algeria, The results showed the agreement of the professors and students on the lack of it and its insufficiency, which negatively affected the frequency of its use, which appeared to be low in general and limited mainly to the computer and data display.

2- Studies dealing with Evaluative thinking:
- (Buckley et al,2015) The study aimed to identify and teach evaluative thinking: a research vision in critical thinking, The research sample consisted of magazines, newspapers and articles published on the Internet, The term evaluative thinking has increased in appearance and spread in journals, including - the American Journal of Evaluation, the Canadian

Journal of Program Evaluation, the Journal of Interdisciplinary Evaluation, by querying the website of each journal (or the publisher's website) using the search term evaluative thinking, They found that since the late 1990s, the term has been used in the published evaluation literature. The term did not appear at all in the evaluation literature until 1996, After that time it appeared about once a year until 2001 when its use started to increase, In 2007, evaluative thinking was mentioned in 12 different articles, With the number reaching its highest number, 15, in 2013, The spread of the term evaluative thinking among presentations in the American Evaluation Society's annual meeting in October 2013 - with 18 listings appearing in the online program search.

Methodology and Procedures

Research Methodology

The descriptive approach was adopted to achieve the objectives of the research, as it is one of the most common and widespread research methods, especially in educational research, works on the investigation of educational and psychological phenomena, as they exist in the present, with the aim of diagnosing them, revealing their aspects and determining the relationship between their elements. (Al-Zoba'i and Muhammad, 1981: 51), By classifying data and facts to reach generalizations about the phenomenon in question. (Atawi, 2011: 172).

Research community

Table (1)
Members of the research community from chemistry teachers and students of the fifth scientific grade for the year 2021-2022

Educational level	number of schools	teachers number	students number
middle School	53	88	3253

Research sample

The selection of the research sample was based on The opinion of experts and arbitrators in the methods of teaching science, measurement and evaluation Previous literature and studies such as (Awda and Al-Khalili, 2000) and (Ibrahim, 2020) and (Zubbar, 2019), The Krejcie & Morgan Equation (607: Krejcie & Morgan, 1970).

Table (2)
Members of the research Sample from chemistry teachers and students of the fifth scientific grade for the year 2021-2022

Educational level	number of schools	teachers number	students number
middle School	21	70	2800

Research tools

1- Preparing a teaching performance observation card according to information technology: The researchers used a set of previous studies to prepare a list of information technology skills and their fields of teaching, such as the study of (Al-Daini, 2019), (Ibrahim, 2020), (Zabar, 2019), (Al-Maqati, 2021), (Al-Shahrani, 2013) and (Mamcg). ,2021), It included seven areas: (lesson planning, teaching organization and development, lesson implementation, lesson processing, teaching methods and teaching aids, use of technology techniques, evaluation), subdivided into (50) paragraphs, and in front of each paragraph, four alternatives (a quadruple estimate) are placed, which are: (Very good, good, average, poor), And set a weight (1,2,3,4) for each alternative, respectively, so that the score of the observation card ranged (50-200).
   - Observation card validity: It was presented to a group of arbitrators in the methods of teaching science, and to determine the acceptance or rejection of each of its paragraphs, the percentage of (80%) for acceptance was adopted according to the Cooper equation, Their observations were taken into account, and some paragraphs were merged and some were deleted. Thus, the number of paragraphs of a note card for the use of chemistry teachers of information technology in its final form became (45) paragraphs, Distributed among seven fields, and thus the degree of the observation card was modified, ranging from (45-180).
   - Observation card stability: The researcher observed an exploratory sample consisting of five teachers from the schools of the research community, as he used two experienced chemistry teachers, and after the tool was clarified to them, they were trained to use it, The two observers observed five teachers, one teacher for each class in the fifth preparatory scientific section, divided into two schools during their teaching where observations begin and end simultaneously for the same school, and each of them puts his estimates independently from the other, After completing the observation, the reliability coefficient was calculated between the estimates of the assistant observers and the stability coefficient was calculated between the estimates of the assistant observers and the researcher, The method of the observers' agreement in calculating stability is one of the most widely used and common methods. After two weeks, the researcher observed the sample of teachers to extract the researcher's stability coefficient with himself.

Applying the Observation card to the research sample of chemistry teachers

The researchers applied the observation card to the research sample of chemistry teachers who study the students of the fifth scientific grade for the academic year 2021-2022, who numbered (70) teachers, And after the researchers obtained a

book to facilitate a task from Al-Mustansiriya University \ College of Basic Education, Obtaining a letter facilitating a task from the General Directorate of Kirkuk Education \ Research and Development Department, They began to observe the teaching performance of the research sample on Wednesday, 15/12/2021, and ended on Tuesday, 25/1/2022, The teaching performance of the teachers was observed and the data was quantified and collected, And give final grades to teachers.

2- Evaluative thinking skills test for students of the research sample.

After the researchers reviewed the content of the chemistry book for the fourth grade of science, (478) skills of evaluative thinking were analyzed, The researchers visited some schools of the research community and discussed with the teachers of chemistry for the fifth scientific grade, as well as reviewed the literature and previous studies to determine the number of paragraphs of the evaluation thinking test, It was agreed that (35) test items for the chapters covered by the research are suitable for their ages, and thus a test map (specification table) was built. After selecting the test items, the researcher formulated (35) objective items of the type (multiple choice), each item included three alternatives, one of which is correct and the rest is false. The instructions for answering the test were clearly formulated, as they included instructions for students explaining how to answer its paragraphs and the time limit for answering. One point was given for the correct answer and zero for the wrong or left out answer, or if the answer was on more than one alternative, so the test score was (0-35).

- Evaluative thinking skills Test validity: The test items were presented with a standard of analysis of main and sub-skills and analysis of skills of the chemistry book for the fourth grade of science to a group of arbitrators specialized in chemistry and methods of teaching science, To ensure the integrity of the paragraphs and their suitability for the specific purposes, the clarity of their formulation, the objectivity and attractiveness of alternatives, and in the light of the experts' observations, some paragraphs were reformulated and modified after calculating an agreement percentage (80%) or higher according to Cooper's equation.
- The difficulty coefficient of the test items: The difficulty coefficient was calculated for the objective items, and it was found that it ranges between (0.44 - 0.63). Thus, all items have an appropriate level of difficulty and (Bloom, 1983: 107) believes that the test items are acceptable if their difficulty coefficient ranges between (0.20 - 0.80).
- Discrimination power coefficient for test items: The discriminatory power was extracted for each of the test items using the discriminatory power equation for the objective items and it was found that its value ranges between (0.52 - 0.89) as the item is good if it is Its discriminatory power is (0,20) or more.
- The effectiveness of the wrong alternatives for the test items: The effectiveness of the alternatives was calculated by applying the formula for the effectiveness of the wrong alternatives, on all the test items, and it was found that the effectiveness coefficient of all the alternatives is negative, meaning that they attracted more answers from the students of the lower group compared to the answers of the students of the upper group and this Evidence of its effectiveness, so it was decided to keep the alternative paragraphs.

- Evaluative thinking skills Test stability: The test was re-applied on Sunday, 28/11/2021, on the same exploratory sample (100) of fifth-grade students who are studying at the (Al-Sharqiya) Preparatory School for Boys of the Kirkuk Governorate Education Directorate, which is one of the schools of the research community, two weeks after the first application**,** It was found that its value (0.93) is considered (0.8) or more as a high value of stability, and thus all test paragraphs were kept and the test became ready for application in its final form, on the research sample.
- Applying the Evaluative thinking skills Test to the research sample students of the fifth year of middle school: The test was applied to the research sample of students of chemistry teachers for the fifth scientific grade on Monday 24/1/2022, after clarifying all the instructions to the teachers and answering their inquiries regarding the test, as it was agreed between the researcher and the teachers to apply the test on the specified day. A score was given to each student and the totals and averages of the students of the research sample were calculated.

Statistical means

The equation of difficulty coefficient, discrimination coefficient, effectiveness of wrong alternatives, agreement ratio equation of Cooper and Alpha Kron-Bach, Pearson correlation coefficient and the Statistical Package for Social Sciences (SPSS) were used.

Research Results

1- The level of teaching performance of chemistry teachers according to information technology

Table (3)
Averages, standard deviations, percentages, T-values, and the sample trend around the in-class teaching performance Observation card items for the first domain (lesson planning)

paragraph number	sequence	paragraph	average	standard deviation	percentage	T, test	sample direction
5	1	Prints the daily lesson plan using the word program	3.357	1.03	83.9	6.98	Very good
11	3	Chooses diverse content from different learning resources	2.857	0.75	71.4	3.98	good
13	4	Selects teaching techniques appropriate to the objectives and content of the lesson	2.643	0.82	66.1	1.46	good
22	2	In the daily lesson plan, images obtained from the Internet are used	2.143	0.75	53.6	-3.98	average

34	8	Some computer programs are used to prepare the activities	1.743	0.78	43.6	-8.13	poor
37	5	It provides educational technologies outside the school	1.643	0.98	41.1	-7.34	poor
40	7	Uses search engines to browse websites	1.443	0.68	36.1	-13.01	poor
45	6	Include in the daily plan to use the Internet to search for information	1.371	0.67	34.3	-14.09	poor

Table (4)
Averages, standard deviations, percentages, T-values, and the sample trend around the in-class teaching performance Observation card items for the second domain (teaching organization and development)

paragraph number	sequence	paragraph	average	standard deviation	percentage	T, test	sample direction
2	10	Organizes in-class activities	3.686	0.71	92.1	13.93	Very good
3	9	Providing an easy environment for learning	3.629	0.67	90.7	14.09	Very good
6	11	Efficient use of lesson time	3.229	0.99	80.7	6.14	good

Table (5)
Averages, standard deviations, percentages, T-values, and the sample trend around the in-class teaching performance Observation card items for the Third domain (Execution of the lesson)

paragraph number	sequence	paragraph	average	standard deviation	percentage	T, test	sample direction
9	15	Asks questions in order to connect previous knowledge with new knowledge	2.914	0.74	72.9	4.68	good
10	12	Motivates students during the lesson to ensure the reliability of the sources	2.886	1.1	72.1	2.95	good
12	14	Students are encouraged to search for the topic of the lesson in search engines	2.657	0.9	66.4	1.46	good
23	16	He sends a summary of the lesson via social media to students	2.114	0.83	52.9	-3.87	average
30	13	Prepares for the topic of the lesson by viewing a video tutorial	1.886	1.1	47.1	-4.67	average

41	17	Supports activities with multimedia files	1.414	0.73	35.4	-12.41	poor
44	18	Overcomes technical problems that occur while using the computer	1.386	0.99	34.6	-9.46	poor

Table (6)
Averages, standard deviations, percentages, T-values, and the sample trend around the in-class teaching performance Observation card items for the fourth domain (Lesson processing)

paragraph number	sequence	paragraph	average	standard deviation	percentage	T, test	sample direction
1	19	Proficient in the scientific material of the topic of the lesson	3.786	0.56	94.6	19.11	Very good
8	24	It links the theoretical aspects and their applications	2.929	0.58	73.2	6.21	good
14	22	Expands the handling of content elements	2.5	0.51	62.5	0	average
15	20	The content of the lesson is honest and up-to-date	2.443	0.94	61.1	-0.51	average
16	23	It presents a variety of examples that are sufficient to achieve clarity of content elements	2.4	0.58	60	-1.45	average
17	21	The content is related to the environment of the students	2.357	0.99	58.9	-1.21	average
33	25	Converts the content of activities into simple and attractive online lessons	1.771	0.69	44.3	-8.82	average

Table (7)
Averages, standard deviations, percentages, T-values, and the sample trend around the in-class teaching performance Observation card items for the Fifth domain (Teaching methods and teaching aids)

paragraph number	sequence	paragraph	average	standard deviation	percentage	T, test	sample direction
18	32	Uses teaching aids that increase the role of students in the lesson	2.286	0.94	57.1	-1.91	average
19	27	The teacher chooses teaching methods appropriate to the	2.229	0.73	55.7	-3.1	average

		circumstances affecting the lesson					
20	29	Encourages the active participation of all students during the lesson	2.186	0.86	54.6	-3.06	average
24	31	Use appropriate reinforcement methods	2.1	0.84	52.5	-3.97	average
25	36	He sends his students books in pdf format related to the topic of the lesson	2.086	0.8	52.1	-4.34	average
27	30	Treats the content of the lesson in an interesting, interesting and clear manner	2	0.68	50	-6.15	average
29	34	Displays a topic on the data projector	1.957	0.91	48.9	-5	average
31	28	Learn about different teaching methods from different educational sources	1.829	0.68	45.7	-8.26	average
32	26	The teacher chooses teaching methods that are consistent with the objectives of the lesson	1.814	0.6	45.4	-9.55	average
39	35	It provides its students with links to important online libraries	1.529	0.95	38.2	-8.58	poor
43	33	The voice recorder is used to record lessons	1.4	0.75	35	-12.25	poor

Table (8)
Averages, standard deviations, percentages, T-values, and the sample trend around the in-class teaching performance Observation card items for the sixth domain (Use of technology)

paragraph number	sequence	paragraph	average	standard deviation	percentage	T, test	sample direction
21	38	Uses the interactive board	2.157	1.02	53.9	-2.81	average
28	40	Uses social media to communicate with parents	2	0.61	50	-6.82	average
35	39	Displays images using the projector	1.657	0.64	41.4	-11.09	poor
42	37	Uses a laptop during the lesson	1.414	0.72	35.4	-12.6	poor

Table (9)
Averages, standard deviations, percentages, T-values, and the sample trend around the in-class teaching performance Observation card items for the seventh domain (Evaluation)

paragraph number	sequence	paragraph	average	standard deviation	percentage	T, test	sample direction
4	41	Determines various assessment methods that fit the lesson objectives	3.414	0.64	85.4	12.03	Very good
7	42	He has the ability to evaluate students' activities	2.971	0.88	74.3	4.5	good
26	45	Prepares and prepares appropriate and useful electronic assignments to achieve learning and its objectives	2.014	1.15	50.4	-3.52	average
36	43	Uses questions that prompt students to think and infer the purpose of the lesson	1.657	1.06	41.4	-6.63	poor
38	44	It raises a contradiction to correct the misunderstanding of the students	1.643	1.04	41.1	-6.93	poor

Table (10)
Averages, standard deviations, percentages, T-values, and the sample trend around the in-class teaching performance Observation card domain

sequence	Domain rank	domains	average	standard deviation	percentage	T, test	sample direction
1	2	Teaching organization and development	10.543	8.43	87.8	7.98	Very good
2	4	Lesson processing	18.186	16.7	64.9	7.86	Very good
3	1	Lesson planning	17.2	15.9	61.4	7.73	good
4	7	Evaluation	11.7	10	58.5	7.7	good
5	3	Execution of the lesson	15.257	13.6	54.4	7.85	good
6	5	Teaching methods and teaching aids	21.414	20.3	48.6	7.79	good
7	6	Technology Use	7.229	6	45.1	6.59	good

Table (11)
The quality of teaching performance according to information technology for teachers of chemistry on the Observation card as a whole

n	Average teacher grades	The hypothetical mean of the scale	Df	T value		Indication level	indicate
				calculated	tabular		
70	121,73	112.5	69	3.448	2	0.05	statistically significant

2- Teaching performance of chemistry teachers according to information technology with the scores of their students' assessment thinking skills test

Table (12)
Correlation between teaching performance and evaluation thinking skills test scores

n	Average teacher grades	Average students grades	Df	T value		Indication level	indicate
				calculated	tabular		
70	121.73	22	69	12	1.6	0.05	statistically significant

Table (13)
Correlation coefficients between Observation card domains and students' evaluative thinking skills

sequence	domains	average	Average evaluative thinking skills	correlation coefficient	T, test		indicate
1	Teaching organization and development	17.2	22	0.955	1.88	1.22	signify
2	Lesson processing	10.5		0.89	1.42		signify
3	Lesson planning	15.2		0.333	0.34		Not signify
4	Evaluation	18.1		0.66	0.784		Not signify
5	Execution of the lesson	21.4		0.32	0.33		Not signify
6	Teaching methods and teaching aids	7.22		0,93	1.65		signify
7	Technology Use	11.7		0.822	1.16		Not signify

Conclusions

1- The chemistry teachers in the research sample have teaching skills according to information technology according to the observation card.

2- The relationship between the teaching performance of chemistry teachers according to information technology and the skills of evaluative thinking is a medium positive relationship.

Recommendation

The researchers recommend the following:

1- Holding cultural awareness sessions for teachers in education to make them aware of the importance of using information technology in the teaching process in the classroom.
2- To achieve the requirements of teaching according to information technology, it is necessary to keep pace with global changes and developments as a step to modernize schools and continuous improvement and permanent development of teaching performance, to ensure that teachers acquire the skills of the twenty-first century teacher, including the skills of teachers' use of information technology.

Suggestions

The researchers suggest conducting many of the following studies and research such as:

1- A parallel empirical study between information technology and other educational strategies and models and their impact on evaluative thinking.
2- A similar study to the current study on male and female teachers of other subjects.
3- An experimental study to reveal the effect of using information technology to teach chemistry on dependent variables other than evaluative thinking, for example (decision making, science processes, scientific tendencies, critical thinking)

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