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The Effect of the Information Technology Program on the Perspectives of Physics Teachers Towards E-Learning

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Abstract

The primary purpose of this paper is to discover the influence of the ICT program on physics teachers' perspectives toward e-learning. Throughout the current study, the needs of physics teachers have been identified, the training program has been prepared, and a research tool (a measure of the trend towards e-learning). The research population consists of the morning middle schools affiliated with the General Directorate of Education in Baghdad, Rusafa / 2, and the study sample consists of (15) male and female teachers. After applying the experiment, the researchers used the SPSS statistical program. The results have shown statistically significant differences between the attitudes of physics teachers, the sample of the research towards e-learning, and for the benefit of the experimental group trained according to the Information Technology Program (ICT).

Keywords: Impact, Program, Information Technology, Trends, E-Learning.

Introduction

Education has overarching and specific goals it seeks to achieve through its institutions and components. The first of these elements is the teacher education adopts to negotiate other aspects. For the teacher to assume the roles assigned to him, he requires that he be a degree of qualification to be able to perform his multiple professional roles efficiently, based on the employment of modern technologies that have proven Her merit in the education process is what it is necessary to possess the essential skills that qualify him to go to these roles supported by updates of his ideas and attitudes towards them, and to coexist with the job positives for him and his students in the simplest form, and the effort and money they provide Time and space, in addition to the educational possibilities of opening and exploring vast spaces in the educational process. Providing contemporary teachers with everything related to technological innovation has become essential to liberate families from traditional

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frameworks, allowing them to play a more effective and vital role by stimulating students' minds and revealing their inherent abilities and preparations (Abdul Salam, 2006: 74).

Through the experience of the researcher and her knowledge of many countries experiences and her work as a trainer in continuous education on the one hand, They understand the use of information technology and its impact on various programs in many countries and its benefits in improving the quality of teaching and education, especially physics teaching and alleviating the difficulties faced by teachers and students in teaching. They may lead to improved students' learning tendencies and motivations and it has touched on a large and wide record of the attitudes of teachers and administrators working in these schools about adopting the developments in the information and communications technology in achieving updates Professional and keep up with these developments.

Hence, the research problem was determined to reveal the role of information technology in ICT in enabling physics teachers to deal with information technology through training on its programs to keep pace with rapid developments in this field by answering the following question:

- "What is the impact of the information technology program on physics teachers' attitudes towards e-learning?".

Research Significance

Education, in general, is facing several Educational technologies took place due to the tremendous advances in information technology and the possibility of the era of computer science to cope with the challenges posed by information technology and the emergence of the international information network, the Internet, which required providing physics teachers and students with the skills needed to overcome these challenges. Fusion between concepts. He argued that the idea of information technology, which led to the emergence of new educational models called instructional technological innovations, forced physics teachers to acquire skills to handle them, and it was necessary to change and provide information models. Acquire new life skills, guide their use of information, and help students use information and benefit from education (Abdul Salam, 2006: 551).

Based on all of the above, it can be concluded that the importance of the current research is reflected through the following:

1. Keeping up with scientific development and catching up with developed countries in all fields, including the field of education.
2. Training teachers on information technology (ICT) programs during the service, as they contribute to the development of field performance for them, and then contribute to their professional growth and the diagnosis of negative and positive aspects in their performance for the purpose of their development, which is reflected in the achievement of their academic students.

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3. Information and communications technology is used in the educational process, providing services for both the teacher and the student and school administration.
4. Changing teachers' attitudes towards e-learning in our schools as an assistant and not a substitute for them.
5. The enrichment of teaching physics as its study contributes to changing the student's cognitive and mental structure and its contribution to cognitive development and the acquisition of a scientific methodology that uses all the skills of scientific thinking.

Research Objectives

The current research aims to:

- Knowing the effect of the information technology program on physics teachers' attitudes towards e-learning.
- The following zero hypothesis can verify the objective:
- There is no statistically significant difference at the significance level (0.05) between the attitudes of physics teachers towards e-learning involved in the Information Technology Program and physics teachers not involved in it.

Research Limits

1. Male and female physics teachers in secondary and middle schools affiliated with the General Directorate of Education in Baghdad, Rusafa / 2, who teach physics for the intermediate stage.
2. The first half of the school year (2019-2020).

Defining Terms:

Impact/ Defined by:

- (Al-Huthani, 1991): "It is the amount of the change in the dependent variable after its exposure to the effect of the independent variable." (Al-Hithni, 1991, p. 235).

- (Ibrahim, 2009): "The ability of the worker under study to achieve a positive result, but if this result is negated and not achieved, then the worker may be one of the direct reasons for the occurrence of negative repercussions (Ibrahim, 2009: 30).

Theoretical definition

"It is the result expected to appear on the thinking and behavior of learners, as a learning and thinking outcome after subjecting them to programs or studying an educational subject.".

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Procedural definition:

"The difference in the overall performance of physics teachers for the two experimental groups".

Training program introduced by:

- Nasr & Hammadi (1995) quote that "It is a number of proposed educational-learning activities in a way that provides the target with an opportunity for intensive training on a number of skills." (Nasr & Hammadi, 1995: 259).

- For Shehata (2003), it is "A type of training aimed at preparing individuals and training them in a specific field and developing their knowledge and attitudes in line with the educational experiences of the trainees, their growth and their needs for developing a skill." (Shehata, 2003: 77).

Theoretical definition: "A set of experiences that can be used to develop workers in educational and educational institutions."
Procedural definition: "Educational activities and experiences that physics teachers can learn through the training program."

Information Technology / ICT defined by:

- (Al Zoghby et al. 2005): "A set of tools that help us to receive, process, store, retrieve, print and transmit information electronically, whether it is in the form of text, audio, image or video, using a computer." (Zoghby and others , 67: 2005).

Theoretical definition: "The tools that have been provided recently as a result of the evolution, and which work to provide a better presentation of educational materials more interesting."
Procedural definition: "The set of educational innovations according to the scientific development that physics teachers can learn and present to students as part of the educational offer."

Direction: Defined by:
(Behavioral Sciences Dictionary: 1973): It is "an acquired willingness to respond consistently [relatively] in a particular way, negatively or positively, to some people, things, or concepts." (Wolman, 1973, p.34).

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Procedural definition: "Physics teachers response to matter as a result of going through a specific educational program."
Theoretical definition: "An acquired desire for matter due to the availability of a type of motivation in a relative direction."

E-learning / introduced by:

- (Salem 2004): "An educational system to provide educational and training programs for learners and trainees at any time and any place using interactive information and communication technologies such as the Internet, or others simultaneously." (Salem, 2004: 54)

- **Theoretical definition**: "A group of electronic means is done through programming educational material and presenting students more easily and effectively."

- **Procedural definition**: "How to display educational content to middle school students in a way that aims to create a rich interactive learning environment by using multiple sources of technology for the purpose of achieving teaching in the shortest time and effort."

Theoretical background – Literature Review

Training:

It is the intended process that prepares the teaching and learning methods and the cooperation of workers to gain effectiveness in their present and future work. It is the continuous activity to provide the trainee with the experiences, skills, and directions that make him fit to conduct a work, and training in the field of education may be called:

- In-Service Training
- Professional Development
- Staff Development
- Continuing Teachers Education

Training generally represents an ongoing and integrated process that includes different parts and elements, each of which plays a distinct role. Still, the effectiveness of the training and its efficiency in achieving its goals depends on the extent of the complementarity and interdependence between its parts and elements that make up the whole of the training process. It is the systematic process of interconnecting the parts that makes them a system, and an open system specifically.

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Training objectives:

The general objectives of the training are:

1. Educating the trainee about the higher goals of training.
2. Raising the level of the trainee to the extent that achieves the goals of the stage in which he works
3. Completing the qualification of the trainee academically, if there is a deficiency in preparing him at a particular stage.
4. Raising the level of the trainee in his specialization and general culture.
5. Awareness of the trainee with modern research and basic references in his field of specialization.
6. Theoretical and practical leadership training (Al-Rashidi, 2004: 18).

Training system features:

1. To be a well-defined, integrated unit.
2. It has specific goals that it seeks to achieve.
3. It consists of multiple parts, interacting and complementing each other.
4. That includes some kind of feedback. (Training Manual, 2009: 11).

The general principles of training can be summarized as follows:

1. Leads to a desired change in behavior. It follows that the behavior is precisely defined, observable and measurable.
2. It mainly works to provide the trainees with specific skills in their work. The trainee's ability to do something measures the extent to which the training goals are reached.
3. It raises the trainees' morale, improves their attitudes towards the profession, increases their confidence in their educational and educational work, and achieves equal opportunities between them.
4. It is an essential and ongoing process that encourages the trainees to continue self-learning and enroll in developmental training courses.
5. Incentives are essential to the success of the training as they guide the behavior of the trainees and seek to fill a lack or satisfy a specific need (Dweik, 1995: 40).

Preparing training programs:

The main stages of the general model in preparing training programs can be explained as follows:

1. Analysis: is the assessment, analysis, and prioritization of training needs.

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2. Design: Design the solution to the training problem, that is, determine the educational and technical specifications of the training program.
3. Development: Produce the training program with all its printed and non-printed materials and sources, formally evaluate and revise it, and produce the final version of the program.
4. Implementation: the use of training materials by the trainees, implementation of the program in the training environment, and collection of evaluation data.
5. Evaluation: Analyzing evaluation data and preparing the evaluation report for the training program. In other words, the report on the effectiveness and efficiency of the training program (Al-Rashidi, 2004: 27).

The concept of ICT:

If attention was focused in the previous decades on the necessity of introducing the computer to educational institutions and spreading its use as a basic means of teaching and learning and working to create harmony between the computer and the student, then these issues began to be outdated today both in developed countries. Today, people's attention is focused on studying how to make full use of modern technologies and methods in the teaching process, improve the quality of education, update educational methods and methods, and develop personal skills and abilities. ICT abbreviation comes from Information Communication Technology (Okasha, 1995: 174).

Benefits and benefits of using Information Technology (ICT):

The use of information technology to modernize and renew education will achieve the following advantages:
1. 1. Enjoyment of Learning: Students are drawn to learning as a result of the excitement of technology.
2. 2. Individualism: Students require individual freedom in self-learning since they have varying backgrounds and talents when it comes to individual or individual education.
3. 3. Interactive Learning: This learning method entails conversation and communication with the instructional software using interactive computers.
4. 4. Reduction in Learning Time: Numerous studies have demonstrated that computer-based learning cuts down on learning time compared to conventional learning by around 30%.
5. 5. Their ability to use simulation and modeling to teach some topics not covered by the mechanism helped them overcome their frustration, which is reflected in the caliber of the instruction they offer and has a detrimental impact on student achievement and the acquisition of knowledge. (Al-Hadi, 2007: 36).

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E-Learning:

ICT has provided capabilities and tools that play an important role in developing teaching and learning methods today. A learning environment that effectively motivates students and addresses individual differences is essential. Recently, the concept of e-learning has emerged as the most suitable design for incorporating information technology into education. (Alnawashi, 2010: 73).

E-learning features:

1. The system is meticulously designed and organized, encompassing inputs, processes, and outputs.
2. It offers a versatile form of education that can be accessed anytime and anywhere, as long as the necessary tools are available and at a pace that is convenient for the student.
3. It goes beyond mere content presentation and encompasses all aspects of the curriculum.
4. The content is delivered through multimedia platforms. 5. Distance education is not obligatory but can also occur in a traditional classroom setting. (Al-Mousa, 2007: 89).

Trends:

The trend is defined as "a stable psychological organization of the individual's cognitive, cognitive and emotional processes, which greatly contributes to determining the final form of its responses to things in terms of acceptance or aversion", and is also defined as "the mental state that directs individual responses" (Zaidan, 1979: 316).

The trends are at two levels:

1. Temporary or instant preparedness results from the immediate interaction between the teacher or student and the elements of the environment in which he lives. This represents the hungry trend towards food at the moment of hunger, and this temporary setting ends once the hunger is full.
2. Long-term preparedness: This trend is characterized by stability, and this represents the direction of the teacher or student towards a friend is relatively stable and is often not affected by temporary harassment and; therefore the most important characteristics of this type of trend that are characterized by the nature of stability or relative stability, which naturally follows the development Teacher or student in conflict with the social and physical environment (Kattit, 2009: 238).

Specialists mention many benefits and functions of trends, including:

1. Determine the path of behavior and its interpretation.

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2. The motivational, emotional, cognitive, and cognitive processes are organized around some aspects of the field in which the teacher or student lives.
3. It is reflected in the teacher's or student's behavior, sayings, actions and interaction with others in different groups in the culture in which they live.
4. The attitudes of the teacher or student are directed toward people, objects, and topics in an almost constant manner.
5. Get the teacher or student to realize and think in a specific way about the issues of the external environment (Melhem, 2005: 319).

Previous Studies

1. Study of (Samurai 2003):

The study aims to know how computer teaching affects achieving scientific thinking for fourth-graders. The sample of the research was (48) students at Al-Shariqya Preparatory School for Girls in Baghdad, where the sample was divided into an experimental and observational group (29) students for each group for the use in teaching the control group and performed parity between the two groups in the previous achievement of students of Mathematics and physics (third intermediate grade) and intelligence and previous knowledge and scientific thinking. The researcher prepared an achievement test and the use of the scientific thinking scale prepared by (Al-Saadi) his results are obtained by appropriate statistical methods (t-test), *Cooper coefficient*, and *Cronbach equation.* The results showed that the students of the experimental group studied using computer (individual learning) from the students of the control group who studied the usual method of achievement and a large difference, as well as distinguished themselves in the test of scientific thinking (Samurai: 2003).

2. Study (Zain Al-Deen 2006):

The effect of the e-learning experience in Egyptian middle schools on students' educational attainment and their attitudes towards it. (17) Schools: The study sample consisted of (211) students who were intentionally chosen from three preparatory schools for boys in *Port Said Governorate*. D was a measure of the trend towards e-learning and was applied to students of the three classes of the experiment just before the experiment, and three teachers carried out the experiment after they received all instructions from the license in the relevant The first test was applied to all students in the three groups. A measure of the trend towards e-learning has also been applied. The researcher calculated the mean and the standard deviations for the student's grades and the direction toward e-learning before and after the experiment. The study found that there were no statistically significant differences between students of experimental groups and control students. A group in completion. There are statistically

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significant differences between the intermediate grades among the experimental and control group students regarding e-learning (Zain Al-Deen 2006).

Research methodology and procedures

Selecting the suitable experimental design, identifying the research community, choosing the sample, and outlining the steps involved in preparing and executing the training program are crucial aspects. Additionally, it encompasses the presentation of research tools and their construction methodology, the procedures for experimenting, and the statistical methods employed for analyzing the obtained results. We will review them as follows:

First, choose the experimental design:

The researcher employed the semi-hermetic experimental design for the two groups of teachers. This design involved dividing the participants into an experimental group and a control group, with a post-test being administered. The selection of this design was based on its compatibility with the research procedures employed in the current study.

Table1. Experimental design scheme

Group	Independent	Dependent	Test
Experimental	Training with the ICT program	The trend towards e-learning	A measure of trends towards e-learning
Controlling	Without training		

Second: The research community and its sample:

The research community consists of all the teachers () who teach physics for the second intermediate grade in the morning schools at the General Directorate of Education in Baghdad, Rusafa / 2 academic year (2019/2020).

Morning schools at the General Directorate of Education in Baghdad, Rusafa / 2 academic year (2019/2020).

2- The research sample:

The researcher of the experimental group of physics teachers (research community) made the deliberate selection, whose number was (15) teachers who have the desire and volunteer to participate in the training program.

As for the control group, they were randomly selected from the schools of the research community, with (15) male and female teachers[1].

[1] Teacher imples (male and female) gender.

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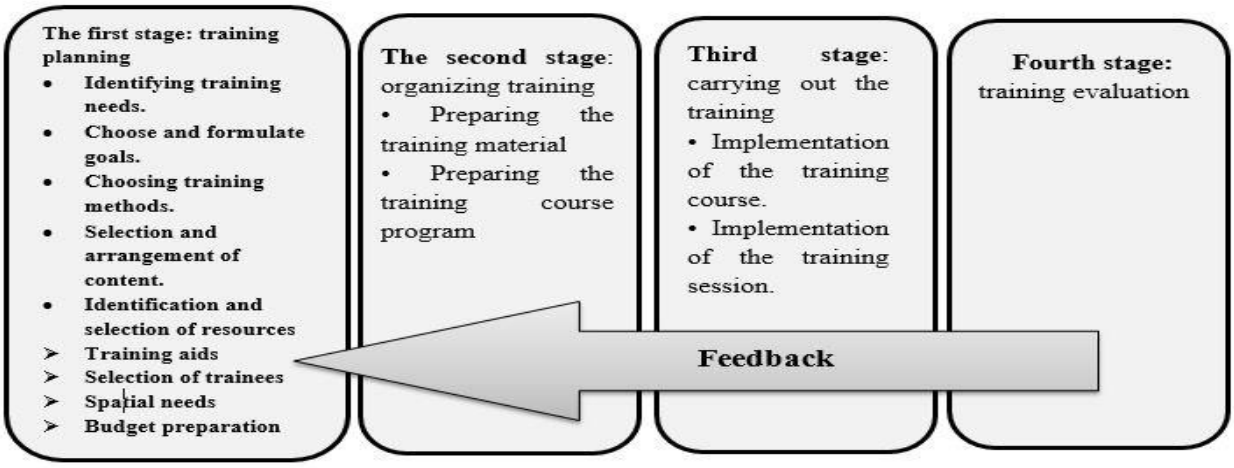
Table 2. Teachers sample data

Group	Number	Gender		Years of Experience
		Males	Females	
Controlling	15	7	8	7
Experimental	15	6	9	10

Third: Preparing the research requirements:

Selection of the training program for teachers of physics on information technology ICT:

Whenever the application of the training program is correct, its results are valid and the chances of its success are great and it achieves the goal for which the training process was completed, and preparing the appropriate training program for the training goals is one of the most important steps. Based on the researcher's experience, the nature of his work, and his knowledge of the approved teacher training programs, he decided to use the information technology program that UNESCO adopted to develop educational cadres in the Middle East. Qualification and training of teachers and the effective delivery of educational content to students. And this training content was approved by (85%). In order for the program to fit the goals of the current research, the researcher made some changes to how it was applied to suit the target group with training. The training program was prepared and applied according to the following four stages: (1- Planning, 2- Organizing, 3- Implementation, 4- Evaluation), noting that for each stage, there are steps that include specific items, as in chart (2), which shows the stages of implementing the training program.



Scheme (2) : Stages of preparing and applying the training program.

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First stage: planning:

This stage consists of five steps:

The first step: is inventory and identification of training needs:

After the researcher diagnosed through collecting information and data related to the knowledge gap generated between the teaching community and the training material (Information Technology) and according to the open questionnaire previously discussed in the research problem that was directed to the research community in addition to a group of specialized supervisors who discussed the following issues:

1. Uses of information and communications technology in the educational process.
2. The use of e-learning in Iraqi schools.
3. The background of their participation in training programs related to this topic.

Through the results of the questionnaire which showed that (90%) of the sample are not aware of the uses of ICT in the educational process and that (80%) of the sample aspire to use e-learning in Iraqi schools, and that (75%) of the sample seemed willing to participate in Training programs related to this topic. The researcher also collected information on the subject of e-learning, as the topic is, according to the researcher's knowledge, a recent topic and was not dealt with by specialists in Iraq in a broad or specialized manner, and these steps were necessary to complete the current research. Based on the foregoing, it became clear that there is a need to implement this training program and reveal the associated effects.

Step Two: Choosing and formulating training objectives:

The objectives guide the training program's work, which outlines its steps and directs its activity. It is a result of which the program is intended to reach, as the results of the program are measured in light of what it achieved from the previously set goals (Al-Khatib, Waddah: 1996: 87).

As is well known, the goals should be built on the basis of the training needs of the participants in the training program, and general objectives for the program have been identified and they number (6). In addition to special goals, their number is (18), a goal derived from the general objectives, distributed according to the following fields: knowledge: their number (5), including (7) skill goals, and (6) emotional goals.

In light of the general and special objectives of the program, the behavioral goals for each training session were formulated. The number of behavioral goals in its first formulation was (125) goals, including (52) cognitive goals, (44) skillful goals, (29) emotional goals, as in Table (2), and in a manner consistent with the available time and material capabilities. It was distributed according to the training sessions. The general and specific objectives of the program and behavioral objectives were presented to the group of specialized arbitrators, Appendix (1). In light of the agreement percentage (80%), of the competent arbitrators, some goals were modified and reformulated, but none of them were deleted.

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Items	Number of Cognitive Goals	Number of Skillful Goals	Number of Emotional Goals	Total
ICT				
operating system				
MICROSOFT WORD				
MICROSOFT EXCEL				
MICROSOFT POWERPOINT				
MICROSOFT ACCESS				
MICROSOFT INTERNTE EXPLORER				

Step Three: Choosing and arranging the content:

After defining the teachers' training needs, they were matched with the content of the chosen training program. The priority given by supervisors and physics teachers was taken into consideration, which presented them with a questionnaire for the training needs of information technology, and also took into account the duration of the program, which is (8) separate days and (2) training sessions except the last Designated for the final evaluation and presentation of the scale for the direction towards e-learning, the vocabulary of content was defined in the light of the behavioral goals of the program. Data and software contained in the ICT program and how to use them and employ them professionally. Therefore, the researcher determined the theoretical content of the academic subject for each of the educational goals in each session that was included in the program, which dealt with seven vocabulary types of software and skills for information and communications technology and how to benefit from them in the educational process during and after training.

Step 4: Choosing training methods:

Training methods are the methods adopted in transferring the information and knowledge to be delivered to the trainees or to provide them with certain skills. (Ministry of Planning, 1991: 53), and the researcher used the traditional methods such as the method of lecture, group and individual discussion, questions, answers, and discussion lecture in addition to modern training methods such as brainstorming, simulation, presentation and re-presentation in addition to the summary method for the purpose of displaying information related to the theoretical scientific content either training activities have been used Group, individual and practical activities.

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Step Five: Defining and selecting training resources, including:

- **Training aids:**

The researcher has used the following aids: publications, illustrations, photographs, paintings, illustrations, paper whiteboard, and magnetic whiteboard. In addition to making use of a device (DATA-SHOW) to display these diagrams, drawings, exercises and activities. ,and the Internet.

- **Human Resources: It includes:**

Trainees: Trainees were chosen from physics teachers in middle schools affiliated to the General Directorate of Education in Baghdad, Al-Rusafa / 2, based on their desire to train according to the conditions previously mentioned in the sample item, and basic approvals were obtained to free them two days per week (Sunday and Tuesday) to join the training program.

1. Trainers: The researcher conducted the training and preparation of the necessary supplies.
2. The Administrative Staff is represented by the Administration of the Training and Development Center in the Preparation and Development Division of the General Directorate of Education, Baghdad, Al-Rusafa / 2.

Spatial needs:

The training hall designated for the institute was chosen, and it is characterized by adequate lighting and good ventilation, and provides comfort in sitting and moving, computer equipment, communication tools and display.

Preparing the budget:

The researcher bears the material cost of the program by preparing some training supplies that need printing and reproduction, especially the theoretical content distributed to all participants in the program, plans, posters, pictures, educational disks, and providing hospitality services. It was commissioned to operate the generator during training time. In addition to providing a means to transport teachers from their schools to the training center and vice versa.

The second stage is organizing training:

- **Preparing the training material**: The researcher adopted the theoretical material included in the training program on information technology ICT supported by MicroSoft and implemented by UNESCO in most Arab countries. Looking at the specificity of the target sample for training, the researcher added practical activities that dealt with introducing the

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vocabulary of the subject's curriculum entrusted to them with the task of teaching them to their students.

- **Preparing the training program**: The researcher prepared the training program according to the needs of the target sample and the specificity of the study subject according to a specific schedule.

The third stage: carrying out the training:

The training program was identified with (7) separate training days, and the number of training sessions reached (14) training sessions and the rate of two sessions per day (one session takes 120 minutes) in addition to allocating another day in which some feedback procedures were carried out that included retrieving and grouping activities and making sure of preparations The trainees in addition to conducting a post-test of their attitudes using the first research tool (scale of attitudes toward e-learning) and coincided with the beginning of the second semester and before starting to apply the second part of the research experience.

Fourth stage: training evaluation:

For the trainee to pass this stage, he is required to commit to attending the sessions and perform a set of activities and other requirements, where the final degree or degree of success was determined (75%) according to the opinions of the specialized arbitrators who were offered the training program, including the following:

1. Attending all training sessions (20% score)
2. Theoretical tests and implementation of daily activities (25% score).
3. Participation in group discussions (25% score)
4. Activities and duties during the period of external practical training (30% degree).
5. The teachers' grades were calculated accordingly, and it was considered an achievement for the program's final evaluation, Appendix (4). The fourth stage of the program, the training evaluation, was achieved from this evaluation.

Fourth: Preparing the research tool:

Preparing a measure of the trend toward using e-learning:

Since one of the aims of the research is to know the effect of the training program on the attitudes of physics teachers enrolled in the training program towards e-learning compared to the perspectives of those who are not enrolled in the program, the researcher adopted a ready-made measure previously prepared by Dr. (Majida Al-Bawi 2008) consisting of (25) items and he sought to update it by adjusting a number Of the items and the addition of other items, as the number of items reached (30) items. In order to authenticate the accuracy of the items and their coherent connection with the notion of trends toward e-learning, the items were evaluated by experts in the fields of education, psychology, and teaching methods. This

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evaluation was conducted in accordance with Appendix (1) and took into consideration the valuable insights provided by the arbitrators. As a result of this collaborative effort, certain items were modified to align with Ben Pric agreement (80%), while no items were removed from the assessment.

Appendix (3). The investigator employed three options (agree, uncertain, disagree), and assigned corresponding scores (2, 1, 0) to each option. Consequently, the scores ranged from 0 to 90. Additionally, the researcher ensured the endorsement of knowledgeable arbitrators and their concurrence on any score surpassing the threshold of 80%, which signifies the tool's transparency.

Structural validity of the scale:

The building's validity was determined by analyzing data collected from a group of physics teachers within the research community. The researcher did not randomly select the sample, but instead visited 20 schools and selected 50 teachers and schools from them. After grading the papers and excluding those that did not meet the criteria, a total of 41 sheets remained. Using the SPSS statistical program, the Pearson correlation coefficient was calculated to assess the relationship between the paragraph's score and the overall score of the scale. The results showed a statistically significant correlation at the 0.05 level, ranging from 0.28 to 0.60, which indicates reasonably acceptable values. (Return, 2005: 457).

C – Scale Consistency

The scale's stability was assessed by calculating the stability factor using Cronbach's alpha equation. The survey application data was obtained from a sample of (50) teachers and schools within the research community, rather than relying solely on the researcher's own sample. After applying exclusions and utilizing the statistical program SPSS, it was determined that the stability coefficient was (0.83). This value is highly commendable, indicating a strong level of reliability for the instrument. It is important to highlight that some literature suggests that stability below (70%) is considered weak, further underscoring the robustness of the obtained stability coefficient. (Back, 2005: 450).

Fifth: Application of the experiment:

The teacher training program has been successfully implemented following the necessary official approvals. The program's location and schedule have been determined, and the teachers who are eligible for training have been informed in coordination with the Baghdad Directorate of Education, Al-Rusafa / 2. Each session of the program lasts for one hour, with a total duration of two hours. The first session, held on Wednesday, 11/12/2019, was attended by 15 teachers and school representatives. This session served as the program's opening session, where the trainees were warmly welcomed and introduced to the researcher. The purpose of the training program, as well as the methods of its implementation and evaluation,

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were thoroughly explained during this session. The pre-test was applied to measure the trend toward e-learning, and the implementation of the training program continued until Wednesday, 2/19/2020. On this day, some feedback procedures were conducted for physics teachers participating in the training program on information technology ICT, and the post-test was applied to measure the trend toward e-learning.
The post-test was also applied to measure the trend towards e-learning.

Sixth: Statistical means:
The researcher utilized the SPSS statistical program for educational sciences.

Presenting and Interpreting the results

For the purpose of verifying the research goal through the zero hypothesis which states that: There is no statistically significant difference at the level of significance (0.05) between the attitudes of physics teachers towards e-learning involved in the training program for information technology ICT and physics teachers who are not involved in it. After I calculated the trend scale data for the experimental and control group teachers after training ، The data was presented in a structured manner, with distinct tables illustrating the average trends of the experimental group, which did not undergo any training, and the control group. The average trend for the experimental group was found to be 82.00, with a standard deviation of 4,706. On the other hand, the control group exhibited an average trend of 52.47, with a standard deviation of 9,576. In order to determine the significance of these differences, the researcher employed the T-test equation for two independent samples. The calculated T value was determined to be 10,720, surpassing the tabular T value of 2,048, at a significance level of 0.05. Additionally, the degree of freedom was found to be 28, further supporting the statistical significance of the observed differences, as in Table (3).

Average differences, standard deviation, calculated T value, and statistical significance of physics teachers' attitudes toward e-learning for the two research groups (control and experimental)

Group	*Teachers Number*	*Mean*	*Standard Deviation*	*Freedom Degree*	*Calculated T value*	*tabular T value*	*Significant Value*
Controlling	15	82,00	4,706	28	10,720	2,048	Significant for the experimental group
Experimental							

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This indicates statistically significant differences between the attitudes of the research sample teachers toward e-learning and the benefit of the experimental group trained according to the information technology program ICT.

Results explanation

In light of the research results, it was found that the attitudes of the physics teachers participating in the training program towards e-learning have changed positively from their attitudes before the training. This is clear evidence of the impact of the training program for information technology, which led to a positive change in the attitudes of physics teachers towards e-learning and made them excited to use the information and communications technology that they were trained for and their work in the classroom, technology skills that they were unaware of, and even most of them did not even know how to use a calculator. In addition to the teacher's lack of sufficient time, his preoccupation with the routine burdens of teaching, and the lack of material and moral incentives, these reasons generated reluctance, fear, and awe to employ educational technologies in teaching physics. Their participation in the training program and familiarity with the advantages of ICT technologies and software have eliminated their fear and encouraged them to employ this technology in teaching, which showed a positive trend towards them for e-learning. Thus, it is consistent with the results of a study and (Al-Samarrai, 2003) (Zain Al-Din, 2006). Also, the exchange of experiences between the trainees during and after the program has an impact in developing their knowledge and expertise and thus raising the level of their production of the software as well as its use . all of these things have positively reflected on the process outputs Educational as it increased students' desire to learn and thus increased their achievement.

Conclusions

In light of the research results, the researcher concluded:

1. The positive impact of the training program for information technology became clear through the change in the attitudes of physics teachers the sample of research towards the use of e-learning in teaching.
2. The ability of physics teachers who are trained in the ICT program to produce various educational software after they undergo the training program, benefiting from the training.
3. Within the research sample's limits, physics teachers were very enthusiastic about employing ICT in teaching physics such as e-learning.

Recommendations

In light of the research findings and conclusions, the researcher recommends:

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1. Holding training courses for all teachers, and sequentially, during the school year on information technology software so that this does not affect the course of the studies.
2. The interest of colleges of education in adding topics related to information technology software, design and production of educational software, and e-learning within the subjects of curricula, teaching methods and practical education.
3. Educate students and parents about the importance and usefulness of ICT in life and education.
4. Provide an electronic library in each school that covers the curriculum and works to update it constantly.
5. Provide computerized curricula on CD and distribute them with the student's textbook.

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