BUILD A TRAINING PROGRAM ACCORDING TO ENVIRONMENTAL EDUCATION FOR TEACHERS OF CHEMISTRY LABS AND ITS IMPACT ON VALUES

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ABSTRACT: *The current research aims at building a training program in accordance with the environmental culture of chemistry lab teachers and its impact on environmental values and preventive awareness of students. In order to achieve the objectives of the research, experimental design (prior-subsequent) and partial control of two experimental equal control groups in environmental values and preventive awareness of their students were adopted. The experimental group is subject to the training program, while the control group is not subject to this program. The first research samples were represented in teachers of chemistry labs in the Faculty of Science - Department of Chemistry - University of Diyala, morning study for the academic year (2014-2015), who have received the bachelor's and master's degrees and who are teaching in the laboratories of the chemistry department by (7) for the experimental group and (7) for the control group, while the second sample was the second and third stage students in chemistry department - Diyala University for the academic year (2014-2015), 70 students for the experimental group and 70 students for the control group. The researchers also sought to know the extent of equivalence between groups as much as possible in some extraneous variables that may affect the results of the experiment for each of the teachers (years of service, certificate, qualification, environmental values) and students (Age, gender, measure of preventive awareness, previous qualification). The research tools were prepared as follows: The training program was prepared according to the environmental culture of the chemistry lab teachers. Research tools were set up and they are: The training program was designed according to the environmental culture of the chemistry lab teachers the main steps of which were presented to a group of experts and arbitrators to verify it before finalizing it and was then applied. The experimental group, which consists of (7) training sessions, the training session time is three hours a day, one day a week, for seven weeks. The environmental values measure for teachers was built, consisting of three components (the protection of the environment from pollution component which included 9 paragraphs, and the beauty of nature component (the built environment cleanliness) which included four paragraphs, and the depletion of resources component which included nine paragraphs), With a total number of paragraphs (22 paragraphs). In addition, a measure of preventive awareness was established for students, including the field of knowledge and skills, the number of paragraphs (27 paragraphs), and the emotional area, the number of paragraphs (23 paragraphs). The Psychometric properties of both measurements were verified for reliability and stability. Statistical methods were adopted in the statistical program SPSS which included Pearson's correlation coefficient, the T-test of two independent samples and two interconnected samples, the Man-Whitney equation, the Kay Square equation). The results showed an improvement in the environmental values for teachers of chemistry laboratories (experimental group) who have undergone the training program, which improved preventive awareness of their students, and in the light of the findings made several recommendations and proposals.*

INTRODUCTION

The environment, in general, represents the framework in which man and the rest of species live and practice their various activities. This framework consists of air, water and soil, and its contents of living and non-living organisms and physical elements from which man derives his living requirements. These elements and factors affect the human as human affects them.

Because of the lack of awareness of human beings and their preoccupation with the provision of good means of living, this has led to increasing excesses of the environment, directly or indirectly. This has resulted in the excesses of various environmental issues and problems that led to the need for a modern integrated view of man and the environment. Environmental science has come into being which included the fields of natural and applied sciences and human and economic sciences associated with the human environment, explaining the relationship between man and the environment and the need to maintain balance in this relationship and the enactment of laws and legislation to preserve the environment.

As the laws and legislations cannot alone achieve the goal and ensure proper behaviour towards the environment, but the acquisition of the individual knowledge and environmental culture and environmental values related to appropriate preventive practices, which are the basis of the behaviour of the individual in the community and are reflected in the information and skills and trends related to the environment and conservation and address of environmental problems and disasters.

Research Problem

The researchers interviewed a number of chemistry lab teachers at the Faculty of Science / Diyala University and a number of their students and directed a questionnaire from five questions. There is weakness and indifference to the importance of the environment and its impact on social, economic and cultural life. On environmental culture or environmental values based on it, and there is a weakness in the awareness of the sample of students examined on how to deal with sediments and laboratory work products and experiments and methods of prevention and safety in the laboratory, and the most important air pollutants, Which is one of the essentials of laboratory work and the need to know them.

This is negatively affecting their preventive practices because their future field of work is determined by laboratories whether scientific, health or analytical, which requires them to have high preventive awareness and accurate scientific treatment. Hence the need to build training program for this class of teachers in accordance

with environmental culture and to identify its impact on the acquisition of environmental values and preventive awareness of students.

The research problem can be identified by the following question:

- What impact did a training program have on the environmental culture of chemistry laboratory teachers in their acquisition of environmental values and preventive awareness of their students? The research problem can be identified by the following question:
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Significant of the Research

All modern educational systems pay particular attention to the issue of preparing and training teachers before and during service, as the teacher is an essential and important element in the educational process. That if sufficient numbers of teachers are available in an educational system, it means that the system is successful and effective, and then what the community expects to progress as a result of raising its members correctly. The emphasis is on the training of teachers in the modern development of new societies in the programs of this training, which leads to its upgrading [1] as training is a psychological motor application exercised by the trainee in order to access new information or master certain mental or motor skills. The activities vary and vary in their ability to achieve the goals set, based on their relevance to the goal and the extent to which they relate to the experiences of the trainees and their sequence with the knowledge and skill building on the other hand. As well as their ability to stimulate their motivation to interact, and this depends on the experiences of the author of activity and skill in taking into account Trainees' backgrounds and introduction of keys that facilitate the trainee to understand and interact with the activity [2].

Therefore, the preparation of a training program may prepare trainees to practice their new roles as mentors and mentors of students interacting with the data of teaching and learning, and as organizers of exciting and varied educational experiences and practices such as using modern teaching techniques to address environmental disasters according to the maximum benefit required by the educational situation. [3]

The current and future scientific and technological developments and the expansion of technological applications of science have resulted in the spread of industries that have lain off their residues in (air, land and water). This has led to the increasing danger of environmental pollution of water, air and agricultural products. He also finds that such problems are not solved by halting scientific and technological activities, but these activities can be continued provided that there is strict supervision. In order for the community to understand this, it is necessary to spread the environmental culture and environmental values at the public level and to help the community members to provide them with sufficient scientific information to enable them to participate in decision-making on Science applications and Technology and Conservation of the Environment [4][5]. It is therefore important to train the teachers of the chemistry labs on the importance of environmental culture and the environmental values related to them. It is therefore expected that if laboratory teachers have environmental values and are aware of the importance of environmental culture, this may contribute to the preservation of the environment and the environmental problems and disasters facing them and thus lead to the development of preventive awareness of their students while working in laboratories because they will be responsible for laboratories, and their contaminants and environmental hazards.

As the environmental culture is concerned with educating and guiding the importance of the environment for all individuals, whatever their age, whatever their gender and wherever they may be, and to preserve the environment in which they live in order to preserve human health. The existence and survival of other organisms is sound because it is a major component of the environment [6] , It aims to: - Remove existing environmental damage , reduce current environmental problems and hazards , prevent future environmental problems , and develop environmental awareness by providing the right view of the environment and its components to achieve its desired role in the earth as a successor to God

In the opinion of the researchers, the importance of environmental values lies in the deep understanding of the environment and the content of those values and work under it by instilling in the minds of the emerging through the preparation of environmental programs and seminars on a continuous and directed, which prepares the individual behavior together in the direction of himself and towards his society so as to create a state of balance and integration Objectively and then achieves conservation and sustainability of the environment. It is an integral part of the value system of society because it is an effective and fundamental factor in moving environmental behavior and directing it towards individuals to ensure the protection and safety of the natural environment. And social development. Despite the existence of different views on the importance of laboratory work, but there is a general consensus in the literature of scientific education believes that the laboratory achieves many purposes and benefits as the skills and knowledge gained through work and application stick to the minds of students as long as possible .

That the responsibilities of science teachers in laboratory work are in the following areas[7]: the adequacy of the teacher, the safety of laboratory work, the teaching of students (training) principles and safety and safety requirements in laboratory activities , and this term refers to preventive awareness in laboratories and in particular chemical[8]

1 - To know the appropriate knowledge related to some of the issues and health and environmental problems that we live at the present time, and include some information and environmental concepts such as environmental pollution, the phenomenon of desertification, hepatitis, AIDS and others.

2 - Awareness of the effects of industrial activities in the environment and human health and the realization of the real or potential negative effects resulting from the interaction between nature and nature with the sense of the importance of the change of some of these activities and possible alternatives to the activities of this interaction.

3 – Acquisition of thinking skills and making appropriate decisions to solve some problems.

4. Sense of responsibility aimed at reducing the risks to human life and the environment.

5. Developing positive attitudes towards the environment, such as conserving natural resources, rationalizing the use of diverse sources of energy, promoting environmentally friendly technologies and how to preserve human health in the light of changes occurring in the world and others. Most of the health and environmental problems faced by the individual may be due to poor knowledge of proper health and preventive behaviour, which prevent diseases and accidents, and that many of the threats to the human being, become more dangerous when the individual is not fully aware of these problems and how to confront them, but be the cause of the spread of these problems, as the individual contributes in some cases by his wrongdoing in increasing material and human losses. Thus, the goal of preventive education is to educate individuals and develop them to prevent these dangers and to maintain their health and provide them with the ability to act in a scientific and orderly manner in the face of the occurrence of accidents or disasters, so the ultimate goal of preventive education is to regulate the relationship between man and his environment [9].

Hence, the concept of protective education to preserve the safety of the environment and the health of students and prevent them from accidents or falling into the foreseeable dangers and develop their awareness of the behavior in a systematic scientific manner in the face of the occurrence of accidents or disasters [10]

Recently, environmental and health problems and associated risks affecting human health, life and environment have increased [11].

If a person is primarily responsible for many of these problems with his wrong behaviour as confirmed by the study of Nur al-Din, 2000, groups and peoples must begin to confront human behavior by observing the complex and interrelated relationships between the components of the environment and their relation to man and its environmental and health impact. Because of such problems it is necessary to prepare the person who is the decisive factor in making any change or preventing any danger, and this requires modification of human behavior. [12]

This can only be achieved through proper behavior, which is developed through preventive education as a fundamental goal in the life of every individual and its success in achieving its objectives. It changes the nature of what we observe in our lives from loss of life and avoid many health and environmental problems. Preventive education is merely a reaction to what happens from disasters. Rather, attention must be paid to raising students' preventive awareness to maintain their health and safety and prevent them from falling into the foreseeable danger. Awareness of environmental problems and the search for appropriate solutions to them and create an interest and a sense of responsibility and develop skills in the follow-up of environmental issues and health as the dissemination of preventive awareness among students to develop the cultural behavior of students and thus change their attitudes towards the best.

Consciousness is not merely the collection of information, but the perception of the individual and his or her behavior towards certain subjects by acceptance or rejection and the development of that feeling, which appears in the results of learning, which is easily observable and measured directly by behaviour or indirectly by certain.

Abdul Majid believes that awareness of the thing involves the integration of the cognitive and emotional aspects. It is also the link between these two aspects. It is also the awareness of the first step in the formation of positive attitudes that control the behavior of the individual in the future. [14] This can be achieved only through well-planned educational attitudes in which the basic elements of a sound curriculum and an efficient teacher are integrated [15].

Research Objectives

The research aims at:

1 - Building a training program for chemistry laboratory teachers according to environmental culture.

2. Verification of the impact of the training program on:

- Environmental values of chemistry laboratory teachers.
- Preventive awareness of students.

Research Hypotheses

For the purpose of verifying the objectives of the research, the following zero hypotheses were formulated:

1.There was no statistically significant difference at the level of (0,05) between the average grade of the chemistry laboratory teachers (the experimental group) who underwent the training program and the average grade of the chemistry lab teachers who did not undergo the training program according to the environmental values scale of the teachers .

2. There was no statistically significant difference at the level of (0,05) between the average grade of the chemistry laboratory students (experimental group) who underwent the training program and the students of the chemistry lab teachers who did not undergo the training program according to the preventive awareness scale.

Search Limits

The research is defined as follows:

1 - Teachers of chemistry labs in the Faculty of Science / University of Diyala / morning study with a master's degree and a bachelor's degree who teach in the laboratories of the Department of Chemistry.

2 - Students of chemistry department for the second and third stages in the Faculty of Science / University of Diyala / morning study.

3 - The first semester of the academic year 2014-2015

Terminology: -

1. Training program

"That planned human activity aims to bring about positive changes in the trainees in terms of information, skills, experience, trends, performance rates, methods of work and behavior."

[16]

Procedural definition:

An organized work plan that includes a set of knowledge, activities and skills aimed at the teachers of the experimental group of chemistry labs for the purpose of introducing them to environmental culture and training them, which are expected to promote environmental values

2. Environmental culture:

"The individual's knowledge, values, beliefs and behaviors concerning the environment in which he lives and the possibility of directing practices and behaviors to protect and develop his environment". [17]

Procedural definition:

Knowledge of chemistry laboratory teachers who are subject to the training program with adequate information on the environment and understanding of their problems and personal behavior to maintain them and positive attitudes towards them.

3. Environmental values: Ecological values

"The decisions issued by the individual preference or lack of preference for environmental issues in the light of his assessment and appreciation of these environmental topics This process is carried out through the interaction between the individual knowledge and experience and representatives of the intellectual framework in which he lives and gained through these experiences and knowledge. [16]

Procedural definition:

Is the set of attitudes, principles and principles that the chemistry lab teachers are expected to acquire and follow to preserve the environment and its components and the correct ways to exploit its resources, measured by the degree obtained in the standard prepared for that purpose?

4. Preventive awareness

Was defined by: - [16]

"Proper and sound preventive practices in order to raise the level of prevention of individuals and identify the risks of diseases, disasters and environmental pollutants and guide them to preventive means." .

Procedural definition:

Is the students' awareness of the correct preventive practices when dealing with chemicals inside or outside the laboratory, facing disasters and pollutants and ways to address them and reducing their environmental and social effects and measured by the degree to which students receive the preventive awareness scale prepared for it?

Research Methodology

First: Experimental Design:

The partial experimental design was adopted for two independent experimental and control groups, the pre-test of the environmental values of the teachers, and the pre-test of the preventive awareness measure of their students.

Second: The Two Research Communities: -

A) Teachers' community:

The research community is a teacher of chemistry labs in the Faculty of Science - Department of Chemistry - University of Diyala, (22) teachers and schools.

B) Students community:

The student community consists of all students of the Department of Chemistry for the second and third stages in the Faculty of Science - the morning study for the academic year 2014-2015 (140) students.

Third: The two research samples: The research has two samples:

A) Teachers sample:

The research sample was chosen by the teachers of the chemistry labs in the Faculty of Science - Department of Chemistry - University of Diyala morning study for the academic year (2014-2015) and holders of the bachelor's and master's degrees who are teaching in the laboratories of the chemistry department by (7) For the experimental group and (7) for the control group.

B) Sample of students:

The study sample was randomly chosen from the students and on the basis of the stages taught by the chemistry teachers, which were identified in the second and third phases of the students of the Faculty of Science, Department of Chemistry, University of Diyala, the morning study for the academic year 2014-2015, (70) students for the experimental group, and (70) students for the control group, table (1) table (2).

Fourthly: Equivalence of Research Groups:

Researcher keen that the equivalence procedure for groups of search in a number of variables that saw way they may affect Allen results, both teachers and students are as follows: -

1. **Teachers** :

A. Years of service

Data were obtained years of service for teachers of the sample information form, which was distributed to the teachers of chemistry laboratories before starting the training program, and calculates the calculated value of the test (Mann-Whitney) for two independent samples equal appeared the lack of a statistically significant difference between the two groups in the number of years of service table (3).

B. The Certificate

The information about the graduation certificates carried by the sample teachers was obtained from the information form, which was distributed to the chemistry lab teachers prior to the start of the training program, and it emerged that the participants were holders of the MA and BA degrees.

C. Qualification

The information on the number of courses conducted by the participants in the training programs in accordance with the environmental culture was obtained from the information form, as well as their question about these courses. The answer was that they did not participate in any previous training course in this field. If found it was away from environmental culture.

D. Environmental values:

The scores of environmental values were obtained by applying the previous environmental values measure of the teachers to the experimental and control groups. In calculating the calculated value of the Mann-Whitney test for two independent samples, there was no statistically significant difference between the two groups in the environmental values variable.

2 . Students:

A. Age:

The information about students of both experimental and control were obtained from the registration department at the Faculty of Science, and found that they fall within the age group (19-22) years of age in months, and when processing statistical values, it appeared that there were no statistically significant differences between the two groups table (5).

Table (1)
Research community and sample (teachers)

the group	Total number of teachers before exclusion (Research community)	Number of teachers after exclusion (The Research Sample)	Number of years of service (sample)	Academic achievement (The research sample)	
				Masters	BSC
Experimental	11	7	7, 1, 13, 6, 6, 2, 8	4	3
Control	11	7	10, 7, 12, 12, 8, 6, 6	4	3
Total	22	14	-	8	6

Table (2)
Research community and its sample (students)

The Group	Number Of Students From The Second Stage	Number Of Students From The Third Stage	TOTAL
Experimental	35	35	70
Control	35	35	70
Total	70	70	140

Table (3)
The value of (Ui) calculated and the statistical significance of the variable number of years of service for the teachers of the two groups

The Group	The Number	Average grade	Total grade	Degree of freedom	Values(Ui)Calculated	Values(Ui) Table	Statistical significance at (0.05)
Experimental	7	5.93	41.50	138	13.5	8	Not functional
Control	7	9.07	63.50				

Table (4)
Values of (Ui) Calculated, tabular and statistical significance of the values of the previous environment of the teachers of the two groups Experimental and control

The Group	The Number	Average grade	Total grade	Value Of calculated (Ui)	Value Of tabular (Ui)	Statistical sign at (0.05)
Experimental	7	9.14	64.00	13	8	Not functional
Control	7	5.86	41.00			

Table (5)
Arithmetical mean, standard deviation, T calculated and tabular value, and statistical significance of the variable age of students of experimental and control groups

The Group	The Number	SMA	standard deviation	Degree of freedom	T calculated value	T table value	Statistical significance at (0.05)
Experimental	70	241.24	10.79	138	0.056	1.96	Not functional
Control	70	241.14	10.39				

Table (6)
The value of the calculated and tabulated "Kay" box for the sex variable for the students of the experimental and control groups

The Group	Males	Female	Total	Degree of freedom	Ka 2 Calculated	Ka 2 Table	Statistical significance at (0.05)
Experimental	37	33	70	1	0.26	3.841	Not functional
Control	34	36	70				
Total	71	69	140				

Table (7)

Arithmetical mean, standard deviation, calculated and tabular T value of two independent groups for the two research groups in the variable preventive measure of students' preventive measure

The Group	The Number	SMA	Standard Deviation	Degree of freedom	T calculated value	T table value	Statistical significance at (0.05)
Experimental	70	75.84	8.24	138	1,910	1.96	Not functional
Control	70	73.14	8.47				

Table (8)

The arithmetic mean, the standard deviation, and the calculated and tabular T value of two independent groups of the two groups in the previous student achievement variable

The Group	The Number	SMA	Standard Deviation	Degree of freedom	The Value Calculated T	T Table Value	Statistical significance at (0.05)
Experimental	70	73.07	10.40	138	1.72	1.96	Not functional
Control	70	70.36	8.17				

Table (9)

Components of the scale of environmental values and the proportion of its paragraphs

T	THE INGREDIENTS	NUMBER OF PARAGRAPHS	PERCENTAGE
1	Protecting the environment from pollution	9	41%
2	Beauty of Nature	4	18%
3	Resources depletion	9	41%
Total		22	100 %

B. Sex

The students' information were obtained from the registration department at the Faculty of Science. The number of students in the experimental group was 37 students, 33 students, 34 students, 36 students. When the values were statistically treated, using (kai square) it showed no statistically significant differences between the experimental and control groups in the sex variable (Table 6).

C. Preventive measure of awareness

The scores of the preventive measure of previous awareness were obtained by applying the measure to the experimental and control groups. When the values were statistically treated, there were no statistically significant differences between the two groups in the students' preventive awareness scale (Table 7).

D. Previous Qualification

Students were rewarded for the previous achievement of the grades of organic chemistry because it is the most subject with the highest number of units. When the values were processed statistically, there were no statistically significant differences (Table 8).

Fifth: Research tools:

1) Building of the training program

The main terms of the training program were presented to a group of experts and arbitrators to express their opinion, identify strengths and weaknesses and make appropriate adjustments in the light of their views. Three phases were developed to build the training program, which includes a set of processes and overlapping elements that work to achieve the objectives of the target group, They are as follows:

First: Planning Stage (Inputs) the following steps are included:

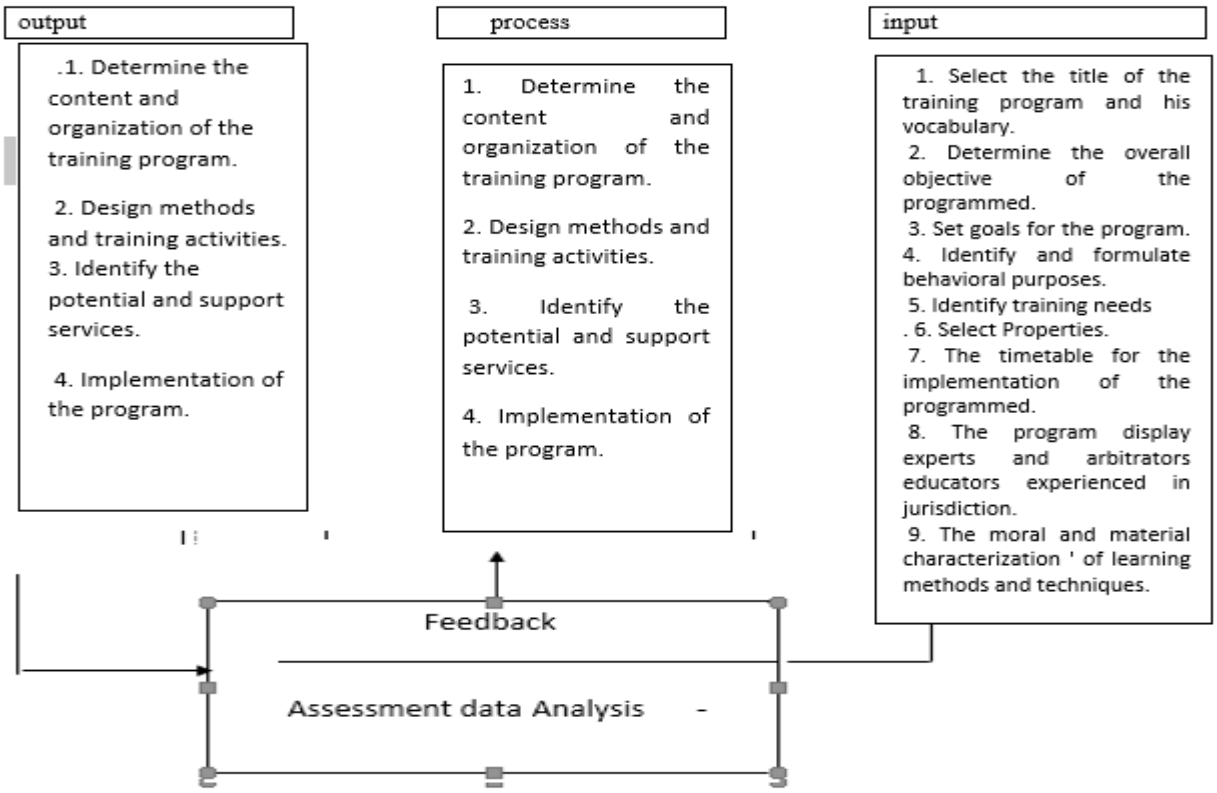
1. Identify the main title and vocabulary of the training program.
2. Determine the overall objective of the training program.
3. Determine the specific objectives of each unit in the program.
4. Identify and formulate behavioral objectives.
5. Identification of training needs.
6. Determine the trainees' characteristics.
7. Estimate the duration of implementation of the program.
8. Presenting the program to experts and educational arbitrators with experience and competence.
9. Determine the physical and moral characteristics of "teaching methods, methods and training".

II) Implementation phase (operations) and includes the following steps:

1. Determine the content of the training program and organize it in the form of modules.
2. Design methods and training activities within the content.
3. Identify the potential and support services of posters, posters and films.
4. Implementation of the program.

Third: the evaluation phase (outputs) and includes the following steps:

1. Determine the results and interpret them according to the data of the training program, specifying the level of achievement.
2. Review and re-evaluate.



3. With the adoption of feedback at all stages of the training program.

Plan (6)

Stages of the design of the training program

The steps to build the training program will be outlined as follows:

First) Planning phase (input)

This stage will cover all aspects related to defining the title of the training program and presenting it to experts and educational arbitrators with

Experience and specialization, identifying the training needs, identifying the trainees' characteristics, and defining the physical and moral characteristics of the teaching methods and methods.

1. Determine the title of the training program

The title of the training program is an indication of its components and contents, as well as the purpose of its preparation and the type of training the trainees will undertake. The title should be clear on the content. The title of the program is:

2. Determine the overall objective of the program

The overall objective of the program is to train the teachers of the chemistry labs by adopting a number of methods and methods of teaching in order to provide them with the concepts of environmental culture and its components and the means of preserving the environment. It is hoped that the application of this program will be reflected in their environmental values and their ability to raise their awareness and awareness of the importance of environment and commitment to their values And to follow the correct and scientific methods to address the environmental problems and laboratory problems facing them, which may lead to raise the level of awareness of preventive students.

3. Determine the objectives of the program

- Cognitive goals:

The training program aims to teach trainees the following:

Provide trainees with information about culture in general.

2. Introducing trainees to cultural types.

3. To provide trainees with concepts about the scientific culture (definitions, elements, need, recipes of the cultured person scientifically, and means of disseminating the scientific culture).

4. Acquiring trainees environmental concepts (definitions, Islamic perspective of the environment, and environmental pollutants).

5. Provide trainees with concepts about environmental awareness (definitions, importance, beginnings, objectives, components, and programs proposed for development).

6. Provide trainees with concepts about environmental culture (definitions, objectives, elements, means of dissemination, fields).

7. Provide trainees with concepts of preventive awareness and preventive education (concepts, patterns, elements, importance, and objectives).

- Skills objectives:

The training program helps to improve the trainee's ability to:

1. Design a plan or program according to environmental culture in chemistry labs.

2. Obtain the necessary skills to preserve the environment by dealing with chemicals in laboratories.

3. The trainee performs the steps to preserve the environment and follow the safety and prevention standards in laboratories.

4. Train him on how to deal with environmental problems, disasters and crises.

5. Acquire environmental awareness skills.

6. Trainees acquire preventive awareness skills and environmental values.

7- Organizing a team to preserve the environment and spread environmental awareness in the college.
8. Display posters and posters showing the importance of the environment and conservation.
- Emotional goals:
1. Develop positive attitudes among trainees towards joining training courses during the service.
2. To develop the positive attitudes of the trainees towards the environment through the presentation of Quranic verses and modern Hadiths that emphasize the importance of the environment and its preservation.
3. Deepening the spirit of the team's collective work towards preserving the environment.
4. Developing trainees 'attitudes towards enhancing the importance of evaluating students' attitudes toward the environment and environmental culture.
5. Enhancing the confidence of the trainee himself by participating in the face of environmental problems and disasters.
6. Improve the attitudes of trainee chemistry teachers by providing them with the skills, practices and preventive guidance they use within the laboratory.
7. Consolidate the concept of community service through the dissemination of environmental awareness and the importance of environmental culture and conservation of the environment.
8. Develop the value of knowledge and attention to the individual's access to the activities and importance of preventive awareness.
4. Identify and formulate behavioral objectives
The concept of behavioral objectives is based on educational outcomes that can be best identified in the light of changes in the behavior of trainees. It also refers to the specific actions that the trainee obtains through specific, observable and measurable educational procedures that are simple, clear, specific and realistic, the behavioural objectives of each module of the training program have been formulated as required by the unit topic.
5. Identification of training needs
The training needs of the teachers were determined through a questionnaire for the teachers of the chemistry department at the Faculty of Science, Appendix 1, on their knowledge of the concepts of environmental culture and environmental values and the use of the correct methods in laboratories as indicated in the research problem. The results indicated the need for such a training program.
6. Determine the trainees' characteristics
The information about the teachers (trainees) was obtained from the information form distributed to the chemistry lab teachers - Chemistry Department at the Faculty of Science Appendix (3), which includes (name, number of years of service, certificate, and qualification) Environmental culture).
7. Estimate the schedule of implementation of the program.
The duration of the program was set at seven weeks - three hours per day (one day) per week, each time for one hour with a break of 10 minutes, or 21 hours for the program as a whole.
8. Present the training program to experts and arbitrators
The training program was presented in its preliminary form to a group of experts and educational arbitrators with experience in specialization. Some of the paragraphs were deleted from the deletion and addition to the units of the program to become a final unit consisting of (6) units.
9. Identification of physical and moral characteristics "of educational methods, methods and activities. The properties were Scale Veracity: Two types of honesty were used: -
Implicit honesty:
The Implicit honesty of the environmental value scale has been adopted which consists of three components, which included the first component: protection of the environment against pollution, (9 paragraphs), the second component: the beauty of nature, (4 paragraphs), and the third component: depletion of resources, (9 paragraphs), table (9).
The scale was presented to a group of experts and arbitrators and asked them to express their opinion on the components and paragraphs included in the scale. It included four alternatives to measure the level of environmental values of the trained teachers, namely the level of acceptance of the value, (Two degrees), and the level of commitment to the value, and set it (three degrees), and negative values (rejection), and set the degree (zero).
2) Content Validation (The construction of the relation of the paragraph to the total degree)
The scale was applied to a sampling sample of (10) chemistry laboratory teachers in the Faculty of Education for Pure Sciences / Department of Chemistry / University of Diyala, outside the original sample of the study to identify the relation of the paragraph to the total degree of the scale.) Was a criterion for the strength of the relationship and by applying the Pearson correlation coefficient, it was found that there was a strong relationship, statistical function and degree of freedom (52) indicating the consistency of the environmental positions of the scale.
The correlation coefficients were determined at the level of significance (5 0,0) for the strength of the relationship and the application of Pearson correlation coefficient, and the correlation between each position of the environmental position and the component to which it belongs.
The power of discrimination:
The test was applied to a sample of 10 chemistry laboratory teachers from outside the sample. After correcting the responses, the T-test was used for two independent samples at a significance level (0.05) and the degree of freedom (52) to test the difference between the mean scores of the upper and lower groups In this section, a statistically significant difference was observed for the scores of the upper group and the minimum group scores in those paragraphs.
Stability
The scale was applied to a sample of 10 chemistry lab teachers from outside the research sample. The coefficient was confirmed by two methods: the Alpha-Kronbach coefficient, which measures the internal consistency; Testing and re-testing as it is clear from the application of the following measure:
A. Alpha Kronbach: - Alpha Kronbach's results showed that the coefficient of consistency of the environmental positions of each component of the scale and the common contrast is high, reaching (0.80) this indicates the stability of the scale
B) Testing and retesting: The test-retest method was also applied to a sample of (10) chemistry laboratory teachers from outside the sample of the research sample and then re-applied after two weeks. When using Pearson correlation

coefficient, 89. 0) for the environmental value scale. This indicates that the scale is characterized by a high degree of stability.

After these procedures, the scale became the final form of (22) questions with four alternatives that take the grades from (0-3) according to the level of acceptance of the value (commitment = 3, preference = 2, acceptance = 1, rejection = zero)) Degree .

3) Preventive measure of awareness: -

• Setting the scale in its primary form:

The meter was prepared to measure the preventive awareness of students after applying the teacher training program for both the experimental and control groups, and by reviewing the relevant literature and previous studies, the scale was prepared in the form of paragraphs and the choice of four alternatives. The scales included health and environmental attitudes, (Physical and intangible) and some phenomena and improper practices in the laboratory.

The standard includes two areas (knowledge and skills) and (emotional field), and the method of answering the paragraphs of the scale for the field of knowledge and skill, is to choose the answer that he sees valid of four alternatives.

The answer to each of the three alternatives (ok, not sure, disagree) was given, and the following weights were given to convert the alternatives (1, 2, 3). The final score of the scale was calculated by adding the total score for each student. The cognitive and skill domains are (27), while the emotional field is (23).

The degree of the preventive awareness scale for the cognitive and skill domains was calculated between (0-27) and the emotional field (1-69).

• Honesty

I have used two types of honesty. Both types of honesty have been verified as follows:

A) Verifiable honesty: The veracity of the precautionary measure was verified by presenting it to the experts and arbitrators to ascertain the veracity of its paragraphs. The opinions of the experts and arbitrators were adopted by modifying or separating some of the paragraphs of the scale to be final.

B) Statistical honesty (sincerity of construction):

The scale was applied to a random sample of (50) male and female students from the Chemistry Department at the College of Education for Pure Sciences for the morning meal for the third stage. After correcting the responses, Of the methods used to calculate the internal consistency of the scale, so the correlation coefficient (Pearson) was calculated between the grades of each paragraph and the total degree of the scale showed a strong relationship and statistical function.

The power of discrimination

The test was applied to a random sample of 50 students from the Department of Chemistry at the College of Education for Pure Sciences. The test was used for two independent samples at the level of significance (0.05) and the degree of freedom (52) to test the difference between the average scores of the upper and lower groups For each paragraph, a statistically significant difference was observed for the scores of the students of the upper group and the scores of the lower group students in those paragraphs.

• Stability

The stability value of the preventive measure was calculated in three ways:

1 - Alpha Kronbach method, the stability ratio (0.82) is a good stability ratio.

2. Test and re-test by finding the coefficient of correlation between the students' grades (the exploratory sample) when applying the scale and returning it. The scale was applied to a random sample of students consisting of (50) male and female students of the Chemistry Department. The correlation between the scores of students in the two applications (0.88) was a good statistical indicator.

3 - by the method of Kudr Richardson and the value of stability in this way (0.90).

Statistical means:

The appropriate statistical methods were used through the use of the statistical program spss. They include: - TI test, Man and Tini test for two correlative samples, K square coefficient of Pearson correlation, Alpha Cronbach equation, Keuder Richardson equation. Equation coefficient (discrimination, ease, difficulty of paragraphs).

Research Results :-

First: Display the results

1. In order to verify the first objective of the research, which is to build a training program for chemistry lab teachers according to environmental culture, the training program was built according to the latest trends adopted in the construction of training programs in accordance with the research requirements.

2. For the purpose of verifying the first zero hypothesis, which states that "There is no statistically significant difference at the level of significance (0.05) between the average of the experimental group who were subject to the training program according to the environmental culture and the average of the control group who did not undergo the training program According to the environmental values scale). When the values were statistically calculated using the Man-Watten test, the calculated value of (3) was found to be smaller than the scale value of (8), thus rejecting the null hypothesis, indicating that there are statistically significant differences (0.05) between the experimental and control groups Yas environmental values and for the benefit of the experimental group Table (16).

Table (16)

Calculated and tabulated (Man - Whitney) value of two independent samples of the experimental and control groups of a scale.

Dimensional environmental values

For the purpose of verifying the second null hypothesis, which states: "There is no statistically significant difference at the level of significance (0.05) Between the average grade of the students of the experimental group who underwent the training program and the average grade of the students of the control group who were not subject to the training program according to the preventive awareness scale), and for the purpose of verifying,81.94 (Grade, and standard deviation of the scores of the adult experimental group) 8,28), While the average score of the control group 58,26)), And the standard deviation of the scores of students in the adult control group 8.22), And the use of the T-test for two independent samples as a statistical method, the calculated T value (16.99) , Which is larger than the tabular T value 1,96) At the level of significance (0.05) and the degree of freedom (138), thus rejecting the null hypothesis, indicating the existence of statistically

significant differences at the level of significance (0.05) between the experimental and control groups according to the measure of preventive awareness of students and for the benefit of the experimental group, table (17).

Second: interpretation of the results

1. Explain the results related to the environmental values of the chemistry lab teachers.

The results of the first zero hypothesis on the superiority of the teachers of the experimental group that were subjected to the training program showed the teachers of the control group who did not undergo any training program in acquiring the environmental values. The result can be attributed to the effect of the training program which was prepared in accordance with the environmental culture for its comprehensiveness, accuracy and objectivity The two inputs contributed to the analysis phase of the training program adopted in identifying the strengths and weaknesses, as well as identifying the characteristics of the trainees and determining their needs in determining the objectives of the training program. And the organization of content, activities, methods and models that assist trainees in acquiring values through the building and organization of appropriate content, as well as the preparation of various teaching methods appropriate to the content of the training program, the type of training, teaching, means and appropriate activities, The presentation of documentary films and posters on the environment and disasters and methods of prevention, as well as the establishment of interactive activities within the laboratory realistic but controlled for the purpose of interaction and cooperation by everyone to control and treatment effectively (Such as uncontrolled interaction, chemical spillage, detection of an unknown chemical), these activities and participants led to the participants' love of the program and positive interaction with its subjects, which reflected the environmental culture and values of teachers. Environmental culture and environmental values are not generated with This is what has been done for the trainees, as well as the selection of the formative evaluation methods to improve their course during the training, the final evaluation to ensure that the desired goals are achieved and the feedback is adopted to adjust the performance of the patient Rebin and improved.

2. Explain the results related to preventive awareness of students

The results of the second zero hypotheses showed that the students of the experimental group who underwent the training program had the advantage of adopting the preventive awareness scale for the students of the control group. The results can be attributed to the effect of the training program, which was prepared according to the environmental culture of the experimental group teachers. To improve the performance of their students as a result of the transition of training, the improvement of preventive awareness of the students is the result of the interaction of the teacher with his student through the adoption of teaching methods and activities and exercises as a result of training and acquisition of preventive and qualitative awareness skills Dealing with the symptoms and environmental problems in the labs, as the implementation of the events of mutual interaction between them, as the love of trained trainees to the training program and interact with the vocabulary and activities and entrenched love of the environment and the growing concepts of environmental culture and environmental values all this led teachers to transfer all they acquired to their students, Science and knowledge, as they say, are not monopolized, so teacher training in accordance with environmental culture has been instrumental in bringing about the transition of training, thus gaining their students' awareness of prevention.

III. Conclusions

In light of the results of the research, the following can be inferred:

1. The proposed training program in accordance with environmental culture, to meet the needs of training trainees with remarkable effectiveness to improve the level of environmental values to achieve the desired goals.
2. Include the training programs activities and exercises as well as the theoretical side, which was to increase their effectiveness, and give trainees the required environmental values.
3. Improving the environmental values of teachers helps to raise the level of preventive awareness of students.
4. The training of teachers in accordance with environmental culture is effective in bringing about the transition of training to their students in providing them with preventive awareness.

Fourth: Recommendations

In the light of the research results, the researchers recommend the following:

1. Application of the training program to laboratory teachers in other scientific colleges.
2. Application of the training program for graduates of scientific colleges upon appointment as teachers before and during service.
3. Design the environmental activities of chemistry laboratory teachers aiming to improve and develop environmental skills.
4. Include classroom and non-classroom activities related to the environment within the curriculum and ensure that they exist as core activities for students.
5. Preparing the necessary training courses for teachers and teachers to apply the environmental concepts contained in the educational curricula and linking them to their environmental values and establishing them.
6. Link the environmental concepts contained in the textbooks with behavioral attitudes, in teaching, rather than focusing on abstract theoretical knowledge, to ensure that students gain the concepts of preventive awareness.
7. Increase the interest in classroom and non-classroom environmental activities in colleges and schools in a way that helps students gain preventive awareness.
8. Disseminate the concepts of preventive awareness and the conditions of safety and security on a large scale, whether in educational or civil institutions to ensure a conscious society capable of coping with the symptoms and disasters of various forms.

Fifth: Proposals

To complement the current research, the two researchers suggest the following:

1. Conduct other similar studies to reach the best methods and methods that can be used in teacher training to acquire and upgrade environmental values and preserve the environment.
2. Conducting a follow-up study to identify the environmental values and their impact on the environment in the students of scientific colleges.

3. Conducting a study that addresses environmental neglect and the reasons that lead to this negligence in some educational institutions.

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