Impact of a Distance Training Programme on the Development of Teaching & Training Design Skills for Faculty Members

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Abstract: The study aimed to reveal the effectiveness of a distance training programme (DTP) to develop the training and educational design skills of a sample of faculty members. A total of (25) members of the pilot sample were taught by Imam Abdulrahman bin Faisal University. To achieve the objective of the study, the design of a distance training programme was conceived according to the General Design Educational Model (*ADDIE*) via the Zoom online platform to develop skills in educational and training design (ETD) skills. Actually, two tools have been developed, a tool that measures the knowledge aspect of educational content and a tool that measures the performance aspect of the programme's content for the purpose of determining the level of the pilot group pre and post training programme in the development of educational and training design skills. The results showed the effectiveness of the distance training programme in developing the training and educational design skills of the faculty. In the light of the study's findings, the researcher presented a series of recommendations and suggestions, including the need to adopt distance training (DT) as a sustainable strategy for members' professional development, to intensify distance training programmes on the application and use of educational and training design skills.

1 Introduction

Distance education and training is an effective model, tool and strategy for cognitive growth and professional development. Technical innovations that have proven effective in the actual application of distance education and training have been utilized to bring about cognitive and practical changes among beneficiaries. Where distance education and its means have been affected by these technical and technological developments, the learner can find an opportunity to train and teach anytime and anywhere using these technical methods [1]. A study by [2] states that online training programmes should give faculty members the opportunity to interact with other academics and enable them to master many skills in a technological environment similar to that in which they will study.

University faculty member is seen as one of the pillars of the success of university education, so taking care of his development and proficiency is an urgent requirement and need to keep abreast of cognitive developments before and during the service in the light of the contemporary variables of the shift from traditional education to education that enables students to get better learning, acquiring skills, developing communication skills and thinking critically [3].

There are many teaching skills that need to be within the context of a faculty member's work while planning and preparing lectures, including ETD skills and principles. The ETD is a new science that emerged at the end of the 20th century. It examines how to engineer the learning process according to specific criteria, what procedures and ways to achieve desired educational outcomes [4]. Educational design is also a systematic process that reflects the translation of learning principles and plans for educational resources, activities, information sources and evaluation based on teaching and learning theories to ensure quality education. So, it will analyse educational needs and objectives and develop the education system to meet those needs, develop means and activities, pilot and evaluate all learning activities and the educational process [5].

In this light, teaching design skills and principles are essential for the faculty to ensure the successful achievement of the objectives of the educational and training process. The faculty member's training in the skills and principles of ETD is the basis and input for the development and improving of his performance in that area. The means of training and development of teaching staff, including DT, are numerous as studies have proved that is effective. [1] study indicated that faculty trends towards DT to develop their abilities were high. [6] also points out that DT is an active method of

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training and a modern global trend. As education and e-training programmes have become a reality and are important for many educational and training institutions to solve problems. This happens in light of their use and investment of technology to achieve the objectives of training and education efficiently. In addition, DT is the product of subsequent advances in technology [7].

Study Problem

The faculty member of higher education institutions is a key element in the quality of educational programs and activities as the presence of a professional distinguished faculty member reflects the internal and external competence of academic programs [8]. [9] notes that university professors need all kinds of programs to update their educational practices and develop new methodologies in order to develop the curriculum, materials, teaching and evaluation. In confirmation of this, some studies recommended the importance of training faculty members, including the study of [10], which recommended the need to hold ongoing training courses on how faculty members use modern technological methods and sophisticated educational methods and familiarize them with the world's experience in university teaching and utilize them to improve their level of teaching performance. As a theoretical and performance technique, educational design is one of the most important competencies and skills that require at least a minimum of a faculty member to design his lecture in a manner commensurate with the characteristics of the lesson, learners and the educational environment. Actually, educational design is an important topic that helps educators during the design of materials and courses [11]. The educational design provides the teaching process with several educational guidance models that guide the planning of lessons on scientific grounds, helping to carry out its training and other academic roles [3]. As one of the methods of e-training based on modern technology in the transfer of training content to the trainee, the researcher has been shown to know the impact of DT through a program designed according to the general design model in the development of the principles of training and educational design of the faculty. This happens in the light of the realistic practice through one of the e-educational platforms according to the steps and stages.

Consequently , the problem of research can be identified by answering the following main question:

What is the impact of a DT programme to develop ETD skills for faculty members at Imam Abdulrahman bin Faisal University (IAU)?

The previous question has sub-questions which are as follows:

1. What is the picture of the DTP in developing ETD skills for faculty members?

2. What has been the impact of the DTP on the development of faculty members' cognitive aspect of ETD?

3. What has been the impact of the DTP on the development of faculty members' practical aspect of ETD?

Study Objectives:

1. Identifying the ETD skills for faculty members.

2. Identifying the training needs for faculty's ETD skills.

3. Preparation of a DTP to develop ETD skills.

4. Determining the effectiveness of a DTP to develop the cognitive aspect of ETD skills.

5. Determining the effectiveness of a DTP to develop the practical aspect of ETD skills.

Study Importance:

The importance of the study is highlighted as follows:

1. Research tries to introduce a new method in DT by technology.

2. This research offers a distance learning training program.

3. This research may gain faculty knowledge and skills serving the educational process.

4. This research may help enhance the skills of ETD applications in the teaching and training process of faculty members.

5. It is expected from this research to produce results and recommendations which are useful in developing ETD skills on the side of producing effective learning sources in educational situations.

Study Limits:

- **Substantive Limits:** The current study was limited to study the impact of a DTP to develop ETD skills for faculty

members.

- **Human Limits**: This study was limited to faculty members of the Faculty of Education of IAU.

- **Spatial Limits**: This study was limited to Faculty of Education of IAU.

- **Time Limits:** The current study was applied during the 2nd semester of the university year 2021/2022.

Study Terms:

▪ **Training Programme**: It means the range of integrated and sequenced activities and components in specific steps to achieve specific objectives for the purpose of providing trainees with the set of knowledge and skills with ETD skills.

▪ **Distance education and training:** It is an interactive system linked to the learning process, based on a digital electronic environment that exposes students to courses and activities through electronic networks and smart devices [10]. The researcher is defined it procedurally as "*the knowledge and skills of faculty members are organized, designed and planned according to the design models of education and training and provided to beneficiaries through electronic platforms according to a specific time plan*".

▪ **ETD skills**: It is the set of processes and procedures organized to analyze, design, develop, implement and evaluate education. This is accomplished through visual indicative models [3]. The researcher is defined it procedurally as "*the set of written and applied performance to be mastered by faculty members that enables them to analyze, design, develop, implement and evaluate educational and training subjects according to selected models appropriate to the nature of the educational and training objective*".

▪ **Faculty members:** The researcher defines them procedurally as *"all those who teach in the university education system in various scientific disciplines including different scientific ranks"*.

2. Theoretical Framework for Research:

2.1 The Concept & Skills of Educational & Training Design and its Models:

In fact, the educational design organizes the work of the teacher, trainer and faculty member so that the educational work is of a planned nature and systemic context across multiple and interrelated stages. The educational design is used in the design of learning or training experiences [12]. The ETD is seen as a science that combines theory and practice. It is based on teaching theories to meet educational needs and objectives to facilitate learning in large and small units of any subject and at all levels of difficulty and complexity [13]. Educational design includes the set of scientific and structured procedures for the analysis, design, development, implementation and evaluation of education, often accomplished only by visual indicative models called educational design models [3]. Educational design is based on learning theories that show how learning occurs and how the impact is transmitted to the learner, what are the specifications of the learning environment and the characteristics of learning and learner, what methods are most effective in creating and communicating knowledge and what are the impediments to learning occurrence. There are many models of ETD that are an illustrative map of how to implement, prepare and communicate educational material to the learner. These models are based on five basic steps and phases as stated by [14] which are "*Analysis, Design, Development, Implementation & Evaluation*" that are shortened in the so-called *"General Model of Educational Design (ADDIE)"*. Educational design models when applied in the field of education aim to upgrade the educational process on the basis of its systems, improve design management through the functions of guidance, description, control and prediction of effective learning, and context analysis. These models help the teacher to guide him in the process of building the educational attitude and developing educational materials [15]. Because the number of educational design models, they classified into three main types [3] which are:

a. Guiding models.

b. Descriptive models.

c. Procedural models.

There are examples of educational design materials [15] as:

- ASSURE Model.

- Dick & Caret's Model.

- Waterfall Model,

- Sam Model.

[16] indicate that the educational design process goes through the stages and skills of each proposed model. Also, the general design model (ADDIE) combines the basic stages in most models. Each phase includes a set of key and sub-skills that require mastery by everyone involved in the educational design process. The building of DTPs is based on these stages, and these stages can be detailed in the General Model of Educational & Training Design (ADDIE) as reported by [17] as following:

1. **Analyze**: is the first and fundamental step in the model through which the main products and requirements are identified to build the learning environment, learner characteristics and what to learn and estimate readiness and training content.

2. **Design**: includes a detailed description of actions related to the implementation of the education and training process so as to include education and training strategies, techniques, evaluation tools, identification of its outputs in accordance with the strategic objectives of education and training, preparation of the test and programme specifications in principle.

3. **Develop**: through which the design process outputs are transformed into concrete physical formats through the production of the training program initially for its experience.

4. **Implementation**: is the implementation and application of the training and educational program to the actual reality.

5. **Evaluation**: this phase involves implementing the composition evaluation after using the software and collecting and analyzing the data evaluation to improve, develop or discontinue the software.

2.2 Distance Training (DT):

It is noted that, training and learning have become a feature of this era, as a result of scientific and technical progress, so the need for it has become urgent and necessary. [1] indicates that DT is emerging as a modern training method as a result of the development in different technical media. As training foundations and requirements are incorporated on the one hand and technical means on the other. Insights into the concept of distance education and training are diverse, as these definitions are based on multiple philosophical trends but conclude that the use of modern technology in training is the new pattern. It should be noted that DT does not have a specific agreed definition, but most definitions meet in that DT has advantages [13] such as:

- There is an interaction between the trainer.

- The trainee is self-trained.

- Training is planned.

- There is a variety of use of technology.

DT is defined as the training process that aims to provide training content through any medium of modern communication mechanisms. It is a training system between trainees and trainers separated by space and time [18]. There are many terms for DT that revolve around the content of remote training including what the study of [19] mentioned as training over the line, computer-based training, information network-based training, virtual training. In general, DT is one of the methods of training that relies on modern technology in transferring training content to the trainee.

E-learning and e-training are also methods of distance learning which is a modern interactive system particularly linked to the educational system. As learning materials are provided to the learner in the shortest time and the least effort by relying on technology innovations and advanced means. This system basically relies on the existence of an e-environment for the beneficiary to be exposed to courses through e-networks and provides all the guidance and advisory needed by the individual in addition to tests [20].

2.2.1 DT Objectives:

The objective of DT is to provide a greater opportunity for training, to create appropriate educational conditions commensurate with the needs of trainees, and to achieve a new concept commensurate with the explosion of knowledge and technological development. It also aims to provide training on everything that is modern and to reduce the cost of traditional training [18]. In addition, it provides training content according to high standards and contributes to enabling beneficiaries to deal with technology, continuous self-learning and diversity in training programmes, free choice of program according to the conditions and possibilities of the trainee to achieve flexible training [21].

2.2.2 Importance of DT in the Professional Development for Faculty Members:

The importance of DT in developing faculty members' skills is demonstrated by enhancing their efficiency and renewing their professional practice in all dimensions of the university education process. It is noted today that there is an increase in local and global trends to use and employ educational platforms remotely in the educational and training process because of their ability to deliver e-content in an attractive and effective manner. In addition, they allow learning in anytime, anywhere, as well as various evaluation methods, and this has been confirmed by many studies [22, 23, 24]. As technology has evolved, it has become easy to provide professional development for members across the network wherever they are and help them search for answers as well as learn more about the design of online communities of practice [19]. E-training for faculty members contributes to the development and continuity of the competitiveness of universities and their transformation into an educated organization as well as the development of creativity and innovation among members. Consequently, the importance of e-training programmes for faculty members is demonstrated by their role in [21]:

- Developing members' capacities at the level of practice and thought.

- Developing research capabilities.

- Developing their capabilities to develop programs.

- Developing them to use available capabilities.

- Developing their capabilities to employ modern technology.

Also, there are a number of principles for DT such as inclusiveness, availability, reliability, continuity, flexibility, follow-up and quality control [13].

2.2.3 DT Techniques & Models:

The means and techniques of DT are multiple in the light of the objective of the training and the target group. These technologies include Internet, email, computer conferencing, video conferencing [20]. There are many DT models for faculty members that can be used in their targeted training programmes as mentioned by [19] which are *"Prodcast Entrance Model, Independent Study Model, Curriculum Lecture Model, Tutoring Model, Community of Practice Model".* [13] adds that there are two types of DT which are simultaneous DT and asynchronous DT.

2.3 Previous Relevant Studies:

Because the importance of DT in the development of faculty members' capacities, several previous studies on this variable have been conducted. For example, the study of [1] found that members have high positive trends towards the role of distance education in developing their abilities, especially in the professional and technical dimension. Also, the study of [25] explained the effectiveness of an integrated learning-based training programme for the development of e-course design skills of faculty members according to the general design model showed that there are statistically significant differences between the average scores of study subjects in the study test of course design skills and the scorecard in design for the benefit of post-application. Moreover, the results of a study [3] showed that talented teachers do not have the knowledge and ability to use educational design principles to design and build gifted care programs. So, the study of the study recommended to intensify teacher training courses on educational design principles. Furthermore, the study of [26] recommended to emphasize the effectiveness of e-training as an important entry point for the development of manpower. While a study of [27] on the effectiveness of DT to develop teaching excellence skills for teachers. It found that there are statistically significant differences between the average scores of individuals of the research sample in favor of post-application and that there is an effectiveness of the DTP according to the measurement of *Blake Modified Gain Ratio*. Also, the study of [28] found the effectiveness of the DTP through the educational platforms of female teachers in the development of teaching practices. The results of the study [16] also found the effectiveness of integrating the tools of personal learning environments with the learning management system to develop educational design. The researcher benefited from these studies in conceptualizing the training programme, its contents and building pre and post-tests.

3. Method & Procedures

3.1 Methodology:

The semi-experimental approach was used to study the impact of a training programme based on DT to develop faculty skills to develop ETD skills in light of the study's problem and questions about its relevance to the study's objectives and nature. So, it can be:

- **Independent Variable**: DTP Design.

- **Dependent Variables**: they are included:

a) Developing the cognitive aspect of faculty members in the field of ETD skills.

b) Developing of the faculty members' performance in the field of ETD.

The researcher also used the experimental design known as "One-Group Design" with a pre and post-test to measure the impact of a DTP to develop faculty members' skills in ETD.

3.2 Society & Sample Study:

The research community identified all faculty members of the Faculty of Education in Dammam at IAU for the 2nd semester of the academic year 2021/2022. He agreed to enroll and attend the training programme (25 faculty members) at 33% of the total number. They are thus the primary sample of the current research.

3.3 Preparation of Study Tools:

To achieve the objectives of the current research, the researcher has developed the following research tools:

1. A cognitive test in ETD concepts.

2. Skilled Performance Assessment Measurement (Note Card).

1. Cognitive Test in ETD Concepts:

The test was designed and prepared with the aim of measuring faculty members' ability to concepts and principles of ETD. Reference has been made to previous literature for use in the formulation of test terms in an objective multi-choice type of question, measuring cognitive aspects according to *Bloom's classification* which is "Understanding - Application - Analysis - Composition, Evaluation". The test covered the content elements of the training programme in the concepts, principles and skills of ETD. The test instructions were formulated in simple and clear sentences showing how to answer the test's questions. The test included (40) phrases in its final form of multiple selection type. The "one" grade was allocated to the correct answer to the paragraph, while "zero" was allocated to the wrong answer, the test was responded to and corrected electronically, and the overall test score was composed of (40) degrees.

The content validity or the construct validity of the test has been ascertained by submitting it to a group of arbitrators from the faculty members of the specialization. They were asked to make their observations on the formulation of questions and linguistic integrity, the appropriateness of the question to the objective it measures, the coverage of questions to all elements of the training programme, the scientific accuracy of their formulation, the appropriate number of test phrases, and the necessary adjustments were made in accordance with their views. The researcher also calculated the internal validity of the test by calculating the matrix of the correlation factors between the test phrases and the total degree of the test. The correlation coefficient values ranged from (0.395-0.918) and the function values were at (0.01) level and demonstrated the internal consistency of the cognitive test. The test constant was calculated using the "Alpha Cronbach" reliability coefficient which its value was equal to (0.946), that is acceptable for the purpose of the present research. The difficulty and discrimination coefficients of the test phrases have also been calculated, to redraft five test phrase whose differentiation coefficient is less than 0.20. Thus, the final test consisted of (30) phrases that are fit for use for the current research purpose.

2. Skilled Performance Assessment Measurement (Note Card).

It was built as follows:

1. **Objective of the Note Card:** This card aims to measure members' performance in the five core ETD skills, each of which includes a number of sub-skills that the study should carry out sequentially, and with specific accuracy, in order to obtain the degree of implementation of the skills performance. These skills are:

- **Analysis Skill:** Its sub-skills include analysis of the educational environment, identification of the problem, identification of human and material potential, identification of educational sources and materials, identification of needs, identification of goals, identification of behavioural objectives, analysis of educational content, identification of experiences and requirements for learning, identification of learner and trainee characteristics, determination of level of preparedness, capabilities, motivation and direction.

- **Design Skill:** Its sub-skills include what is associated with identifying and selecting the best educational treatments, organizing the objectives of the educational and training process, organizing learning content, choosing educational and training means and methods of evaluating them, and developing educational plans according to the target times.

- **Development Skill:** Its sub-skills include translating the design of education into actual educational materials,

strategies and educational means, evaluating the educational material produced for evaluation and its effectiveness for learners or trainees in principle before use and actual application.

- **Implementation Skill:** One of its actual skills is the actual implementation of what has been done in the previous steps with the skill of developing the operational plan for all components.

- **Evaluation Skill:** Its actual skills include checking the incidence of learning, achieving educational goals, evaluating the elements and components of the educational process, identifying implementation difficulties, and how to develop the model used based on feedback.

2. **Degrees Rating System:** The note card is designed to measure behavioural performance on a triple graded scale of skill proficiency; to a large extent, (3) grades, with a moderate score and (2) grades, with a low score and a single score, and nothing is given if the skill is not implemented (unqualified). Thus, the overwhelming degree of knowledge and performance of the five main ETD skills and their branches (analysis/ design/ development/ implementation/ evaluation) = 30 degrees reflects the good performance of the skills and the minimum = 10 degrees and reflects the poor performance of the skills.

3. **Calculation of the Validity & Consistency of the Search Tool**: The note card was presented to a group of specialists to determine its suitability for the objectives of the current research, the accuracy of its drafting, its comprehensiveness of the skills represented therein, and the necessary adjustments were made in the light of the arbitrators' views. The researcher also applied it to the survey sample, and then calculated the internal validity of the note card by calculating the matrix of the correlation coefficients between its dimensions and its overall degree. These values were (0.789-0.863) respectively while the previous values of the correlation coefficients were at the level (0.01) and demonstrate the internal consistency of the note card.

To calculate the validity of the card, observation of the performance of individuals from the pilot sample during the performance of tasks was carried out by research assistants separately assigned. The consistency was calculated by Cooper's equation to calculate the ratio of agreement and difference between the two observers via the Zoom platform:

$$\text{Agreement ratio} = \frac{\text{number of times of agreement}}{\text{number of times of agreement}} + \text{number of times of difference} \times 100$$

Where the agreement ratio above (80%) is considered to be a function of the high consistency of the note card. The agreement ratios between the two observers in the note card ranged from (86.2%: 93.7%) indicating the consistency of the note card. The final note card thus became usable for the current search purpose.

3.4 Preparation of Experimental Processing Material (DTP) to Develop ETD for Faculty Members.

The experimental processing material was the design of a distance education-based training programme to develop ETD skills for faculty members via the Zoom platform of the Faculty of Education at IAU and this was done using the General Educational Design Model (ADDIE) shown in fig. (1) below:
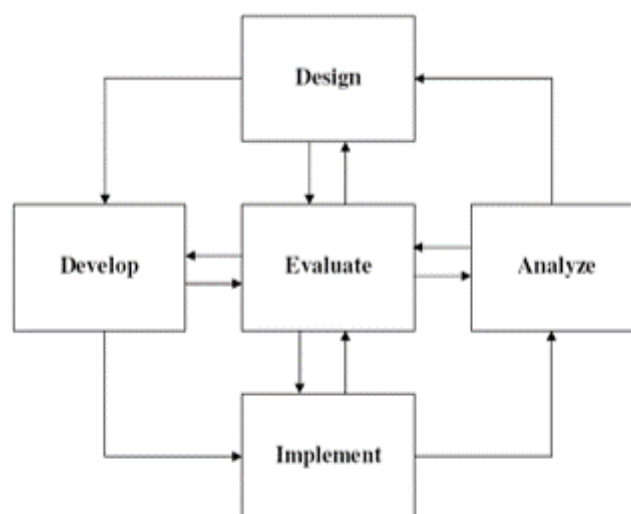

Fig. 1: The General Educational Design Model (ADDIE) Phases

The phases of ETD are as follows:

Phase I: Analysis: it included the following steps:

1. **Identification of the overall objective and identification of trainees and their training needs:** the overall objective of the education-based on DTP to develop ETD skills for faculty members via the Zoom platform. The survey found a need to develop ETD skills for faculty members, which required building the training programme to overcome the problem.

2. **Content Selection**: The subject " ETD skills" has been selected as the focus of the training portfolio topics, which includes three training sessions in the amount of (3) training hours, and each session aims to provide trainees with a number of sub-skills. In building the training content, it is considered the selection of content and basic information suited to the training topics. A comprehensive training portfolio has been prepared, divided into (3) comprehensive sections for all the main and sub- ETD skills, design concept, models and philosophical foundations, applied workshops with (3) workshops per session of (20) minutes.

Phase II: Design: The researcher designed the portfolio and training sessions according to the following educational design requirements and criteria:

1. **Title**: The educational design is considered to have each section of the training portfolio with a title reflecting the inside of the portfolio and be characterized by short sentence.

2. **Introduction**: The educational design is considered to have an introduction that gives an overview of the importance of self-study of the training portfolio and the rationale for its study, its most important components and its relevance to subjects previously trained and experienced by beneficiaries, as well as a set of questions that raise the motivation for training and learning.

3. **Training Portfolio Objectives**: Each section of the training portfolio has been provided with a number of carefully defined goals for each trainee to learn before training about the desired learning outcomes. The goals take into account their formulation should be specific and clear. Also, the educational objectives of the portfolio were organized in a learning sequence from relatively simple to more complex objectives. The objectives included cognitive and procedural applied aspects of design skills, as well.

4. **Training Portfolio Content**: The educational design is considered translating training objectives into curricular content and training workshops appropriate to the level of trainees, supported by a number of enriching activities, models and applied examples.

5. **Selection of Training Activities:** The content of each section is included in the training portfolio a series of enriching activities with a view to enriching the trainees' information on the subjects of the training portfolio. Also, the educational design takes into account the diversity and variety of training activities within the portfolio to suit the multiple levels and experiences of trainees and their fields of specialization.

6. **Learning Resources & Additional Readings**: The educational design is interested in having a list of sources and references at the end of each section of the training portfolio that includes additional readings that can be consulted by the trainee if he needs further insight into the subject of the portfolio or to delve into one of the secondary elements or ideas contained in the training pouch content.

Phase III: Development:

At this phase, the training portfolio was produced in the form of a paper copy and another e-copy in the form of a file (PDF). It has also been raised on a joint link on IAU's Cloud for the purpose of documenting training production. So that it can be easily browsed through personal computers or smart devices for trainees through the DT platform through the Zoom platform. The researcher obtained graphic, audio and text data from available websites and YouTube portals linked to the nature of the various training tasks and attitudes.

Phase IV: Implementation (Application)

The training programme was carried out at various phased. The program's tasks were trained through the Zoom platform by preparing a link to the platform, which was equipped and licensed for use for the purpose of training through the Deanship of E-Learning and Distance Education. So that its capacity is suitable for the number of trainees and the location of the training programme. Also, the graphic models and video clips shown for how educational design and methods of use, are provided. In the light of this, the researcher prepared a note card for application to trainees before and after training on the programme. The procedures for the implementation of the training programme were as follows:

1. Pre-application of measurement tools.

2. Initially, the researcher introduced the members of the group (members) to what is the ETD, what are its models, philosophical foundations, aspects of its applications, design tools, the evaluation methods used and difficulties in implementing the design application.

3. Next, the male/ female trainee participating in the traineeship begins to learn about the skill to be trained on by reading the e-form in the training portfolio.

4. Watching a model from all trainees through the platform of how to design and how to choose the appropriate design model for the subject of the training that the trainee wants to implement according to its directions as well as the mechanism of applying the sub-skills for each key skill.

5. Trainees apply what has been identified on it in the preparation of a design of a subject of their choice and presentation after the group training workshop.

6. Trainees in the form of groups (5 trainees) prepare for performance implementation of ETD skills simultaneously through the platform during the workshop with performance assessment from the researcher via the Note Card prepared.

7. Each trainee presents separately an educational design model in identifying subjects related to his or her specialization or area of interest.

8. The performance of the trainees is assessed according to the various design models presented in accordance with the researcher's observations and those of the trainees in the program.

9. After the feedback process, trainees modify the modules that have been designed.

10. Performance is evaluated once and for all for the programmes designed by the trainees, and the reviewed knowledge and performance skills of ETD skills are reviewed.

11. Post-application of measurement tools.

Phase V: Evaluation: The educational design followed the constructive evaluation and final evaluation patterns, as follows:

1. **Constructive Evaluation Phase**: The design of the training portfolio for the training programme was adjusted in its preliminary form, through the evaluation of the performance of the individuals of the pilot sample. The training programme with its portfolio and training sections was also presented to a group of specialized arbitrators to ensure its validity, consistency and suitability for the objectives, as well as its suitability for the trainees (faculty's members). The arbitrators made some observations that were taken into account in the finalization of the training programme. In the light of the observations, the program is ready for application to achieve research objectives.

2. **Final Evaluation Phase:** by evaluating the performance of trainees during the individual and collective application phase according to the Note Cards.

3.5 Pilot Study Procedures:

To verify the effectiveness of a DTP to develop ETD skills for faculty members of the Faculty of Education of IAU, the researcher conducted a pilot study, the procedures of which were as follows:

1. Building the study tool: Note Card and its arbitration.

2. Preparation of experimental processing material: a DTP to develop and judge ETD skills by presenting it to specialists.

3. Prepare the online training platform using the Zoom platform and the required capacity equipment and suited to the requirements of the training program subject through the Deanship of E-Learning and Distance Education and experience it.

4. Apply pre-search tools to the sample.

5. Conduct three-week experimental training processing in the 2nd semester of the academic year 2021/2022.

6. After completing the training on the content of the program, the researcher applied the Note Card to observe the performance of the sample individuals after the following note in the ETD skills and training subject. The data was unloaded for statistical processing.

Statistical Processing: For the purpose of the present study, the researcher used the following statistical methods:

▪   "Cooper" equation to calculate the ratio of agreement and difference between the two observers.

- Pearson's correlation coefficients.
- Means and standard deviations of grades.
- Test (T) to calculate differences between means.
- Eta box (2η) and impact size calculation (d); for the independent variable (use of DTP in dependent variables (to develop and improve educational design skills).

4. Results, Discussion & Interpretation of the Study

4.1 Answer to Q1: What is the picture of the DTP in developing ETD skills for faculty members?

The training programme was conceived in the light of the general model of educational design ADDIE and its details were discussed in the fourth step of the current study procedure (method and procedures) and its content in the introduction of ETD and its multiple skills and models, which were presented at the beginning of the current study.

4.2 Answer to Q2: What has been the impact of the DTP on the development of faculty members' cognitive aspect of ETD?

To answer this question, the mean (M) and standard deviation (SD), the Tess Value (T) of the grades of trainees in the pilot group in the Pre and post-test were calculated in their cognitive performance on test items for cognitive aspects of ETD skills, and table (1) shows these results as follows:

Table 1: M, SD, and Test value (T) to calculate the difference between averages of pre and post-test scores for experimental group trainees in their cognitive performance on cognitive test items for design skills

Pre- Application (30 degrees)		Post- Application (30 degrees)		df	Value (T)	Indicator of Function	Statistical Function
M	SD	M	SD				
10.07	2.872	25.89	3.031	55	29.040	0.001	Function at level (0.01)

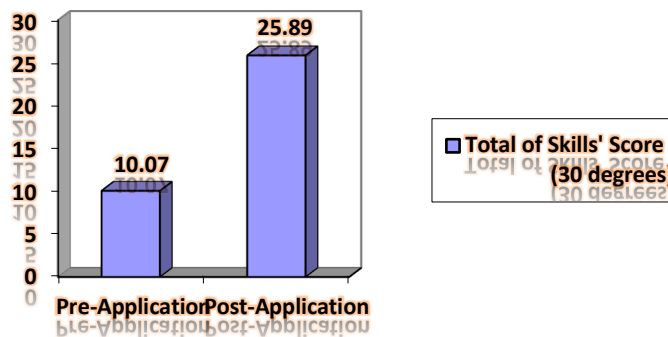Figure (2) shows the results in the previous table (1) as follows:

Fig. 2: Average of Pre & Post -Test Scores

The previous table (1) and figure (2) show that the "T" value calculated for test scores was (29.040) with an indicator of the function (0.001). This means that there is statistically a difference at the level (0.01) between the average pre and post-test scores of trainees in the experimental group in their cognitive performance of educational design skills for the benefit of their cognitive performance in the post-test. As the mean of performance of trainees (faculty members) in pre-test (10.07) in a standard deviation of (2.872), while the mean calculation of their cognitive performance in post-test was (25.89) in a standard deviation of (3.031), which is clearly shown in figure (2). This result indicates the impact of the DTP on the development of trainees' skills. This result is consistent with the results of the study of [16], the study of [25], the study of [27], and the study of [28].

4.3 Answer to Q3: What has been the impact of the DTP on the development of faculty members' practical aspect of ETD?

To answer this question, the mean calculation and standard deviation, the value of (T) the grades of trainees in the pilot group in pre and post applications were calculated in their Note Card for ETD skills. The table (3) shows these results as follows:

Table 2: M, SD, and Test value (T) to calculate the difference between averages of pre and post-test scores for

experimental group trainees in their performance on Note Card for design skills

Pre- Application (30 degrees)		Post- Application (30 degrees)		df	Value (T)	Indicator of Function	Statistical Function
M	SD	M	SD				
9.27	4.021	26.61	3.278	55	23.729	0.001	Function at level (0.01)

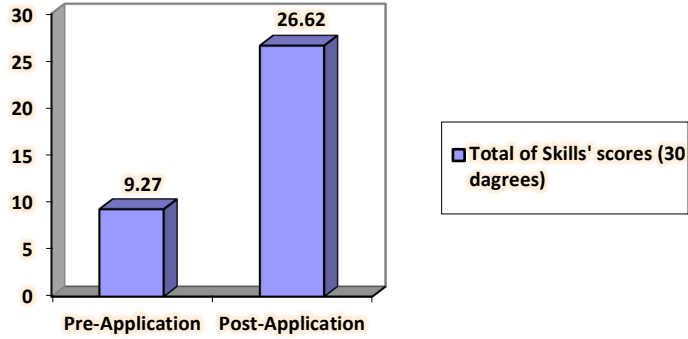Figure (3) also shows the results in the previous table (2) as follows:

Fig. 3: Average of Pre & Post -Application Scores for Trainees in their Performance on the Note Card for ETD Skills

The previous table (2) and figure (3) show that the value of "T" calculated for the Note Card scores was (23.729) with an indicator of Function (0.001). This means that there is a statistically difference at the level (0.01) between the means of degrees of pre and post application of the pilot group in their performance on the note card of ETD skills for the benefit of their performance in the post application. The mean calculation of trainees' performance in pre application (9.27) with a standard deviation of (4.021) while the mean calculation of trainees' performance in post application was (26.61) with a standard deviation of (3.278) which is clearly reflected in fig (3). This result indicates the impact of the DTP on the development of the skills of research sample members in ETD skills. This result is consistent with the results of the previous study on the subject such as the results of the study of [25], the study of [27], and the study of [28].

4.4 Calculating the Size of the Impact of the Training Programme

The research to ascertain of the effectiveness/impact of the independent variable on the dependent variable, the impact of Effect Size for the training portfolio has been calculated and divided into the development of ETD skills on the performance of the members of the pilot group. The value of the ETA box has been calculated, and the following formula determines the value of the impact by the "T" value of the differences between means.

$$\eta^2 = \frac{t^2}{t^2 + df}$$

Where "t" is the value for differences between means (two means not associated with two samples equal to the number of individuals), 'df' is the degree of freedom, calculating the size of the effect using the ETA square (η^2) [29]. Table (3) shows the results as follows:

Table 3: Size of impact of independent variable (for training portfolio) on dependent variables

Independent Variable	Dependent Variables	Pre- Application N=30		Post- Application N=30		Value T	df	η^2	Effect Size
		M	SD	M	SD				
Training Programme	Cognitive Test ETD skills	10.07	2.87	25.89	3.03	29.04	55	0.939	Large
	Note card: ETD skills	9.27	4.02	26.61	3.27	23.72	55	0.911	Large
*All of these values are at a level (0.01).									

From the previous table (3), the effect size of the training programme's impact on the development of cognitive skills in the ETD of the members of the pilot group is significant, as (93.9%) of the overall variability of the dependent variable is due to the impact of the independent variable (training programme).

Similarly, from the previous table (3), the effect size of the training program's impact on the development of performance skills in the ETD of the members of the pilot group is significant, as 93.9% of the overall variability of the dependent variable is due to the impact of the independent variable (the training programme).

The researcher explains these findings that the nature of the training programme carried out remotely through the online platform and the workshops prepared has helped to develop and increase the cognitive and performance aspects during the training of the group's members in ETD skills. The prompt feedback provided by the researcher for each response or postponed at the end of the training session, has also had an important impact on trainees' acquisition of ETD skills, and feedback is undoubtedly instrumental in reducing trainee errors.

5. Conclusions

The findings of this study indicate that a distance training programme can effectively develop teaching and training design skills among faculty members. The programme was found to be beneficial in terms of increasing knowledge and skills related to teaching and training design, as well as improving the confidence of the participants in their teaching and training design abilities. Additionally, the participants agreed that the programme had a positive impact on their teaching and training design practices.

6. Recommendations

In the light of the results of the study, the researcher recommended that training programmes for faculty members in ETD should be intensified, adopting DT as a sustainable strategy for the professional development of faculty members, conducting evaluation research study on e-DTPs for faculty members in the field of educational design.

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