

Effectiveness Of A Proposed Training Program In Developing Twenty-First Century Skills And Creative Teaching Skills Among Female Student Teachers, Specializing In Early Childhood

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Abstract

The research aimed to reveal the effectiveness of a proposed training program in developing twenty-first century skills and creative teaching skills among female student teachers specializing in early childhood. The research derives its importance from the importance of preparing female early childhood teachers, because of its significant impact on the future development of the skills and abilities of children of this stage. The scarcity of studies that focus on developing twenty-first century skills and creative teaching skills among female student teachers, specializing in early childhood. Directing the attention of university faculty members to the need to pay attention to developing the skills of the twenty-first century and creative teaching skills among students. Providing university faculty members with a training program to develop twenty-first century skills and creative teaching skills for female student teachers, specializing in early childhood. Providing field training officials with a note card to measure the extent to which female students master the twenty-first century skills and creative teaching skills. Providing a program to develop twenty-first century skills and creative teaching skills for female student teachers, specializing in early childhood. The results showed the effectiveness of the proposed training program, and the research recommended the importance of including twenty-first century skills and creative teaching skills in teacher preparation programs.

Keywords: training program, twenty-first century skills, creative teaching, student teachers, early childhood.

1. Introduction

The current era is characterized by cognitive, scientific, technological and social developments that have led to fundamental changes in all areas of life. These developments have allowed the transition from an economy based on industry to an economy based on information and knowledge, and then the formation of a global system based on human resources, knowledge and high-quality skills [1-2]. This global system needs individuals with skills that enable them to manage and understand vast amounts of data and information; solving complex problems; and to think creatively in a world that provides open access to knowledge and information [3]. There is almost agreement that

there is a deep gap between the skills and experiences that learners learn in educational systems and those they need in life and work, in addition to the fact that the curricula in its current form are no longer sufficient to prepare learners for life and work [4], as a result, it has been argued that learners should be equipped with a new set of "21st century skills" needed to meet the needs of the labor market and the jobs of the future [5] and several studies [6-9] have confirmed the importance of integrating twenty-first century skills in All educational systems, with the need to formulate frameworks to define and define their sub-skills, in addition to suggesting ways of how to integrate them into educational curricula, whether at the level of educational content or at the level of

teaching methods and strategies and assessment tools. Therefore, many educational systems seek to develop, update and improve their curricula, and provide innovative insights on the quality of education necessary for students and teachers to adapt to the twenty-first century [10-11]. The success of the educational process in achieving its goals depends on the efficiency of the creative teacher in his teaching, who is able to integrate the pillars of teaching in terms of the interaction between the teacher and the learner, the educational material and the learning environment, and making full use of the available educational capabilities, while guiding learners to keep pace with contemporary and future global developments [12]. In order to educate a creative learner, attention must be paid to preparing a creative teacher who has the ability to practice teaching critical and creative thinking to his students, and then teachers must be taken care of before service and the development of practices and skills supporting their creativity [13]. Good preparation for the teacher that supports creativity is the beginning of the movement of change and actual development in the educational process, and the education system in general. The skills of learners, therefore, the current research seeks to design a program to develop the skills of the twenty-first century and the skills of creative teaching among female student teachers, specializing in early childhood.

2. Research problem

The teacher is the cornerstone of the educational process and one of its most important inputs, as he is able to organize and manage it and translate its objectives into tangible reality, in addition to his vital role in developing the abilities and skills of learners and providing them with diverse experiences, so there was an urgent need to prepare and qualify him to keep pace with the requirements of the twenty-first century. The Kingdom of Saudi Arabia has launched the Human Capacity Development Program HCDP as one of the newly developed programs to achieve the Kingdom's Vision 2030, with the aim of developing the outputs of the education system and lifelong continuous training to reach global levels. The program emphasized the importance of training teachers and providing them with the best experiences and skills that enhance their ability to meet the requirements of the century twenty-one (Human Capacity Development Program, 2019). Despite the importance and great interest in twenty-first century skills, many studies have confirmed that there are shortcomings among some teachers in these skills, and that the current

programs are no longer sufficient to prepare them for learning and work in the future, and recommended the need to develop and restructure teacher preparation programs to achieve the development of these skills [11-18]. In addition to the need to provide learners with these skills through innovative and creative teaching methods. Several conferences, including the International Conference on Education Evaluation (2018), the first conference of the Saudi Scientific Society for Teachers (2019), and the (virtual) International Conference for the Future of Digital Education in the Arab World (2020) recommended the need to reconsider the preparation and qualification of teachers to ensure their practice of the skills of the creative teaching. A study [19-20] emphasized the need to provide the necessary support for the development of teacher preparation programs to ensure the development of twenty-first century skills. The study [21] confirmed that there is a gap between the knowledge that learners acquire in the classroom and the future skills they need for life and work. This is due to the shortcomings in the teaching performance of teachers, as they focus on using traditional teaching methods that lack creativity, nor correspond and characteristics of learners in the twenty-first century. The study [22] recommended the need to develop creative teaching skills for kindergarten teachers through the use of modern programs, teaching methods and strategies such as active learning strategies because of their positive impact in forming a new generation of creative children. Numerous studies have emphasized the importance of training student teachers on creative teaching skills through training programs that develop these skills, including the study [23] recommended on the need to develop teaching skills during the practical training period to ensure innovative planning and integration of educational content and knowledge; Organizing content and progressive presentation, in addition to classroom management, teaching management, and transforming theoretical knowledge into practice. By supervising field training students specializing in early childhood, it was noticed that the students were unable to practice the skills of the twenty-first century, and this was reflected in their teaching performance. They relied on traditional teaching without creative teaching, which predicted their lack of awareness of their future roles, due to all mentioned before, the problem of the current research can be stated as: Despite the beginning of interest in developing both the skills of the twenty-first century, and the skills of creative teaching among female students who specialize in early childhood, the interest in developing these skills that have a great impact on

the educational system is still below the required level.

3. Research Hypotheses

- There are statistically significant differences at the significance level (0.05) between the mean scores of the experimental group in the pre and post application of the twenty-first century skills observation card, in favor of the post application.
- There are statistically significant differences at the significance level (0.05) between the mean scores of the experimental group in the pre and post application of the creative teaching skills observation card, in favor of the post application.
- There is a positive, statistically significant, correlation at the level of significance (0.05) between the level of development of twenty-first century skills and the level of creative teaching skills among female student teachers specializing in early childhood.

4. Research objectives

- Identifying the current level of the female student teachers specializing in early childhood with regard to the skills of the twenty-first century and the creative teaching skills of the female student teachers in the early childhood specialization.
- To determine the extent of the effectiveness of the training program in developing the skills of the twenty-first century among female student teachers, specializing in early childhood.
- To determine the extent of the effectiveness of the training program in developing creative teaching skills for female student teachers, specializing in early childhood.
- Determining the relationship between the development of twenty-first century skills and the development of creative teaching skills among female student teachers, specializing in early childhood.

5. Research importance

- The research derives its importance from the importance of preparing female early childhood teachers, because of its significant impact on the future development of the skills and abilities of children of this stage.
- The scarcity of studies that focus on developing twenty-first century skills and creative teaching skills among female student teachers, specializing in early childhood.
- Directing the attention of university faculty members to the need to pay attention to

developing the skills of the twenty-first century and creative teaching skills among students.

- Providing university faculty members with a training program to develop twenty-first century skills and creative teaching skills for female student teachers, specializing in early childhood.
- Providing field training officials with a note card to measure the extent to which female students master the twenty-first century skills and creative teaching skills.
- Providing a program to develop twenty-first century skills and creative teaching skills for female student teachers, specializing in early childhood.

6. Research basic definitions

Potency

Effectiveness is defined procedurally as the extent of the impact that the program used can have on developing twenty-first century skills and creative teaching skills for female early childhood female teachers, and this effect can be measured statistically by calculating the Eta square.

Training program

It is defined procedurally as a proposed educational plan that includes a set of planned sessions aimed at developing the skills of the twenty-first century; And creative teaching skills among female student teachers, specializing in early childhood.

Twenty-first century skills

It is procedurally defined as a set of skills necessary to prepare female student teachers to specialize in early childhood for work and success in the twenty-first century and to meet its challenges. It includes three main areas (learning and thinking skills, digital culture skills, life and work skills) and it is measured by the total score obtained by the students in the note card. prepared for it.

Creative teaching skills

It is procedurally defined as a set of teaching behaviors possessed by student teachers, and able to be practiced accurately, quickly and proficiently, to create a creative learning environment while planning, executing and evaluating activities in a manner characterized by fluency, flexibility and originality, and it is measured by the total score obtained by the student teachers in the note card prepared for that.

Research methodology

The descriptive-analytical approach: with regard to the theoretical study of the twenty-first century skills topic; and creative teaching skills and a

description of the procedures that were followed to prepare the research tools and materials. The quasi-experimental approach: with regard to the research experience, its procedures, and the control of its variables. The research will be based on a one-group experimental design, using the pre and post measurements for each of the twenty-first century skills; and creative teaching skills.

Community and sample of the research

The research community consists of all eighth-level students in the early childhood education program, College of Education, Najran University, where their number reached 65 students during the first semester of the university year 1443 AH.

7. Theoretical framework

Twenty-first century skills

Twenty-first century skills are one of the most important modern movements that support learners and teachers in the educational environment, and by reviewing the literature that dealt with the concept of twenty-first century skills, it was noted that there is no agreed comprehensive definition, due to different cultures, and below we review the most prominent definitions that dealt with the skills of the twenty-first century. Twenty-one: [24] defines it as "a set of skills necessary to ensure that learners are prepared to learn, innovate, live, work, and make optimal use of information, media, and technology in the twenty-first century" It is defined as "the skills that the learner needs to rely on himself to keep pace with modern developments and face challenges in order to achieve the four basic principles, which are learning to know; work; live; and participate with others, and they are summarized in three main areas: creative learning skills, digital culture skills, life and profession skills" [25]. It is "a set of abilities, aptitudes, tendencies, attitudes and experiences that take care of building personality in accordance with the requirements of the twenty-first century, and it includes learning and creativity skills, information and media skills, life skills, profession and livelihood" [21]. Twenty-first century skills are a broad and broad set of skills and abilities that learners need to function and succeed in the information age and meet its challenges [26]. Twenty-first century skills include training learners in understanding content, analysis and reasoning, in addition to using higher-order thinking and collaborative skills to identify and solve problems in line with their areas of interest [27-28]. In light of the foregoing definitions that can be defined procedurally as a set of skills necessary to prepare female students, teachers, who allocate early

childhood to work and succeed in the twenty-first century and meet its challenges. It includes three main areas (learning and thinking skills, digital culture skills, life and work skills) and it is measured by the college that the female students obtain in the note card prepared for this.

Importance of 21st century skills

The integration of twenty-first century skills into the curricula leads to the following:

- Contributes to achieving many community goals.
 - Provides an organized framework that ensures learners' involvement in the process of learning and building knowledge, and achieving higher levels of learning and achievement in academic courses.
 - It enables learners to understand the content of the courses, in addition to linking the different courses with each other in order to access new information, which helps in the integration of knowledge and the continuation of lifelong learning.
 - Prepares learners for innovation and leadership in the twenty-first century and to actively participate in scientific and practical life.
 - Helps to adapt to technological developments and face rapid changes.
- It is considered an important framework for the professional development of teachers.
- Helps learners to deal with society effectively and positively while raising the ability to face problems and find innovative solutions to them.
 - Helps in developing different competencies that enable them to succeed in life and work.

Classification of 21st Century Skills

Classification of the Northern Territory Central Educational Laboratory (NCREL, 2003))

The Metiri Group & NCREL Educational Laboratory (2003, 4) classified the skills of the twenty-first century into four main groups, which are the skills of the digital age: they include (basic culture - scientific culture - economic culture - visual and information technology - understanding multiple cultures - cosmic awareness). Creative thinking skills: they include (the ability to adapt, manage complexity, self-direction, curiosity, creativity, take risks, higher-order thinking skills and sound thinking), effective communication skills: include: (teamwork skills, interpersonal skills, personal, social and civil responsibility Interactive communication), high productivity

skills: These include: prioritization skills, planning and management to achieve results, effective use of technological tools in the real world for communication, collaboration, problem solving and task completion.

Ranking of 21st Century Skills according to the Partnership for 21st Century Skills

The classification of the Partnership for Twenty-first Century Skills is considered one of the most detailed frameworks, as it identified three sets of skills for the twenty-first century: Learning and thinking skills, including: the four (4C) skills (critical thinking and problem solving, communication, cooperation and participation, and learning and innovation), Information, media and technology skills include (information culture, media culture, and information and communication culture), life and work skills, including (flexibility and adaptability, initiative and self-direction, social and multicultural skills, productivity and accountability, leadership and responsibility) [29-31].

The International Society for Technology in Education Ranking

The International Society for Technology in Education has identified a set of critical skills for building the learner in the twenty-first century, including: creativity and innovation skills; Communication and collaboration skills, research and information checking skills, critical thinking skills, problem solving and decision making, digital citizenship skills, technology operations skills and concepts [32].

Characteristics and characteristics of the twenty-first century teacher

According to [33-34] identified the characteristics and characteristics of the twenty-first century teacher as follows:

- Ability to build good social relationships beyond the classroom and extending inside and outside the school with parents and others.
- Ability to face problems and find innovative solutions to them.
- Ability to keep pace with rapid changes, adapt to them, and employ them in teaching.
- Ability to play multiple and different roles that keep pace with the requirements of the information revolution and technological progress.
- Ability to reflect and reflect on teaching practices and identify strengths and weaknesses, and then treat them to reach the quality of teaching.
- Possess higher-order thinking skills (critical, reflective, creative, metacognitive skills) and work to develop them through planning

innovative educational activities that develop focus, attention, imagination and thinking skills of all kinds.

- Managing life skills and employing them in teaching situations and imparting them to learners.

- Managing learners' abilities through (differentiated teaching, diagnostic-remedial teaching, teaching according to multiple intelligences)

- Possess teamwork skills to achieve educational goals.

- Possess high productivity skills, including (skills for renewing priorities, planning and management to achieve results)

Creative Teaching

Creative teaching is an activity that reflects the teacher's ability to invest all his cognitive, professional and personal potentials to help learners gain knowledge and build it themselves and in their own way. It is defined as a pattern of effective teaching behaviour used by the teacher to create a teaching interaction between him and the learners through strategies, teaching methods, and innovative means and activities in order to develop their creative abilities indicated that it is a set of procedures and teaching methods that the student teacher performs in the educational situation. It includes the skills of organizing an educational environment that stimulates creativity, practicing creative behaviour in educational processes, using and employing educational and technical materials, and employing modern creative assessment methods in order to achieve the highest levels of learning, and [35] considers that creative teaching skills are "a set of effective teaching behaviours that appear in the teacher's activity before, during and after the teaching process, in the form of verbal or motor responses characterized by accuracy and speed of performance and compatibility with the requirements of the teaching situation [36] pointed out that creative teaching is a set of verbal and non-verbal behaviours that the teacher shows in the classroom during interaction with the learners in the educational situation, and contributes to arousing creativity among the learners and includes questions that provoke creativity, teacher responses that stimulate creativity, and create the environment class that supports creativity [37] defined creative teaching skills as a set of behaviours that a teacher possesses and can practice accurately, masterfully, quickly and with minimal effort and cost, whether during planning, implementation or evaluation in a manner characterized by fluency, flexibility and originality [37] indicated that it is a set of educational skills

and behaviours that the teacher follows to create a beautiful, exciting, interesting and enjoyable creative environment by choosing uncommon activities and strategies, as for [38] sees that it is everything that the teacher does in the educational process with his own unusual vision intended on his part, which adds a distinctive imprint on his learners to improve their mental abilities, and stimulate their mental motivation to upgrade them to creativity and innovation.

Classification of creative teaching skills

Studies have differed among themselves on the classification of creative teaching skills, and the following is an overview of some of these classifications:

- According to [39] categorized creative teaching skills in light of the teacher's possession of creative thinking skills into fluency, flexibility, originality, fluency, and sensitivity to problems.
- According to [17] indicated that creative teaching skills include (pedagogical skills, assessment skills for learners' learning, teaching to perceive concepts as a conceptual format, and the use of technological innovations.
- According to [40] agree to classify creative teaching skills according to the following basic stages of teaching.

Creative teaching skills related to planning

The teacher's ability to plan the lesson ensures clear planning in a way that helps to find innovative and diversified alternatives that contribute to effectively achieving the targeted educational goals during a specified period of time.

Implementation related creative teaching skills

The teaching implementation process is closely related to the planning process, and its success depends on the quality of the teaching plan. At this stage, an appropriate atmosphere is created that helps stimulate creative thinking among learners, presenting the content in an interactive way that draws the learners' attention to the content.

Creative teaching skills related to assessment

In it, assessment tasks that are characterized by creativity and determine the nature of the creative output are determined, provided that open-ended assessment questions are designed that require a variety of answers, while allowing enough time for learners to understand the question and think about the answer.

Characteristics of creative teaching skills

The [41] has identified the characteristics of creative teaching skills as follows:

- Creative teaching with meaning that is related to the needs of learners and takes into account the characteristics of their growth and aims to achieve comprehensive and integrated growth (mentally, physically, emotionally, and socially).
- Contributes to the achievement of educational goals at the highest level, and the learner is able to reorganize scientific knowledge and link it in new ways.
- Contributes to the development of learners' educational experiences in proportion to their abilities and potentials.
- Contributes to the survival of the impact of learning knowledge, skills and trends, and learners can retain what has been learned and benefit from it in the future.
- The learner is the center of the educational process without neglecting the educational material or the role of the teacher.
- It is concerned with the practical aspects without neglecting the theoretical aspects.
- Creative teaching skills appear in the learner's behavior and thus can be observed, measured and evaluated.
- Contributes to motivating learners to think, effective dialogue, and individual learning.

Obstacles to creative teaching

A study [41] identified obstacles to creative teaching in:

- Not to include in the course content topics that stimulate and encourage creativity Poor preparation of teachers before service.
- The traditional stereotypical performance of the teacher, which does not fit the nature of the twenty-first century, and which does not focus on developing the creative thinking skills of learners.
- The lack of training and refresher courses dealing with creative teaching, its skills and strategies.
- The scarcity of opportunities that the teacher provides for learners to interact with educational content using innovative strategies.
- Using traditional teaching methods and avoiding the use of innovative methods that develop thinking, inquiry and problem solving.
- The scarcity of classroom and extra-curricular activities that stimulate creativity.
- Using traditional evaluation methods and avoiding methods that measure higher levels of thinking.
- Lack of use of modern technological techniques with regard to lesson planning, implementation and evaluation.
-

Preparing research tools and materials

The Preparing research tools and materials includes Preparing the 21st century skills note card and determine the purpose of the card

The card aimed to measure the performance level of twenty-first century skills among female student teachers, specializing in early childhood, at the College of Education, Najran University.

Determining the content of the card

The card included three main dimensions (learning and innovation skills, information, media and technology skills, life and work skills), and each dimension includes a set of sub-skills, which were formulated in a procedural manner so that it can be observed.

Standard for assessing performance in the card

A three-tiered scale was used to measure the levels of performance for each sub-skill, so that each statement gives a score of three according to the level of performance (high performance three marks), (medium performance two marks), (poor performance one mark).

**Calculating the validity of the note card
Apparent honesty**

The card was presented in its initial form to a group of experts and arbitrators in order to know their opinions about the suitability of the card for the purpose for which it was designed, and the clarity of its skills, as well as to judge the integrity of the linguistic formulation and belonging to the dimension, and the safety of estimating the level of performance, and in the light of their opinions and suggestions, the wording was amended Some sub-skills.

Validity of the internal consistency

The internal consistency of the card was verified by applying it to an exploratory sample of 15 students, and the Pearson Correlation Coefficient was calculated, for the correlation of each dimension of the card with the overall score of the card, and the correlation coefficients ranged between 0.867 and 0.903, all of which are a function at the level of significance (0.01), which indicates that all the indicators that make up the card are true.

Calculating the stability of the note card

To calculate the stability of the card, the method of the observers' agreement was used, in conjunction with a colleague - after training him on how to use it - by applying the card to 7 female students who specialize in early childhood exploratory, then the stability coefficient was calculated using the

Cooper equation and the observation card was obtained in terms of The total score on the average agreement percentage 94.8%, and this percentage represents a high agreement percentage and indicates the stability of the note card and its validity for use.

Preparing a note card for creative teaching skills**Determining the purpose of the card**

The card aimed to measure the level of performance of creative teaching skills among female student teachers, specializing in early childhood, at the College of Education, Najran University.

Determining the content of the card

The card included three main dimensions (creative teaching skills related to planning, creative teaching skills related to implementation, and creative teaching skills related to evaluation), and the sub-skills were procedurally formulated so that they could be observed.

Standard for assessing performance in the card

A three-tiered scale was used to measure the levels of performance for each sub-skill, so that each statement gives a score of three according to the level of performance (high performance three marks), (medium performance two marks), (poor performance one mark).

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Calculating the stability of the note card

To calculate the stability of the card, the method of the observers' agreement was used, in conjunction with a colleague - after training him on how to use it - by applying the card to 8 female early childhood female teachers exploratory, then the stability coefficient was calculated using the Cooper equation and the observation card was obtained in terms of the total score on the average percentage of agreement 92.4%, and this percentage represents a high percentage of agreement and indicates the stability of the note card and its validity for use.

Preparing the proposed program

Determining the general objective of the proposed program and formulating procedural objectives: The general objective included developing the skills of the twenty-first century and developing creative teaching skills among female students, teachers specializing in early childhood. In light of the general objective, the procedural objectives of the program were formulated.

Determining the organizational framework of the program

The content was organized in the form of training sessions, and the program consisted of 16 training sessions, at a rate of two sessions per week, and the duration of the session was two hours.

Determining the materials, tools and means used in implementing the program, which included:

- Computer connected to data show and display screen,
- Colored pens for writing
- Whiteboard and pens
- PowerPoint presentations for program content

Determining the teaching strategies and techniques used in providing the content of the program, including:

- Lecture
- Discussion and dialogue
- Brainstorming
- Cooperative learning
- Micro-teaching
- Self-learning
- Role playing
- Practical demonstrations.

Evaluation methods

- Tribal evaluation
- Continuous evaluation
- Final evaluation.

Program implementation phase

- Presenting the objectives of the training session to the trainees
- Presenting scientific content of the session to the trainees
- Using teaching strategies and techniques
- Trainees' implementation of the program's tasks and activities
-

Program evaluation phase

The evaluation of the trainees using the following methods:

- **Tribal Evaluation:** It included the tribal measurement of twenty-first century skills and creative teaching skills through the application of the two research tools.
- **Continuous evaluation:** This was done through the questions that are asked during the sessions, and the worksheets that are presented during the sessions of the program.
- **Final evaluation:** The trainees answer the evaluation questions at the end of each session, and apply the two search tools after the end of the program sessions.

Setting the training program

The program was presented to a group of arbitrators specialized in the field of kindergarten, curricula and teaching methods, and based on the suggestions and opinions of the arbitrators, some modifications were made, and the training program in its final form became valid for application.

8. Results and their interpretation

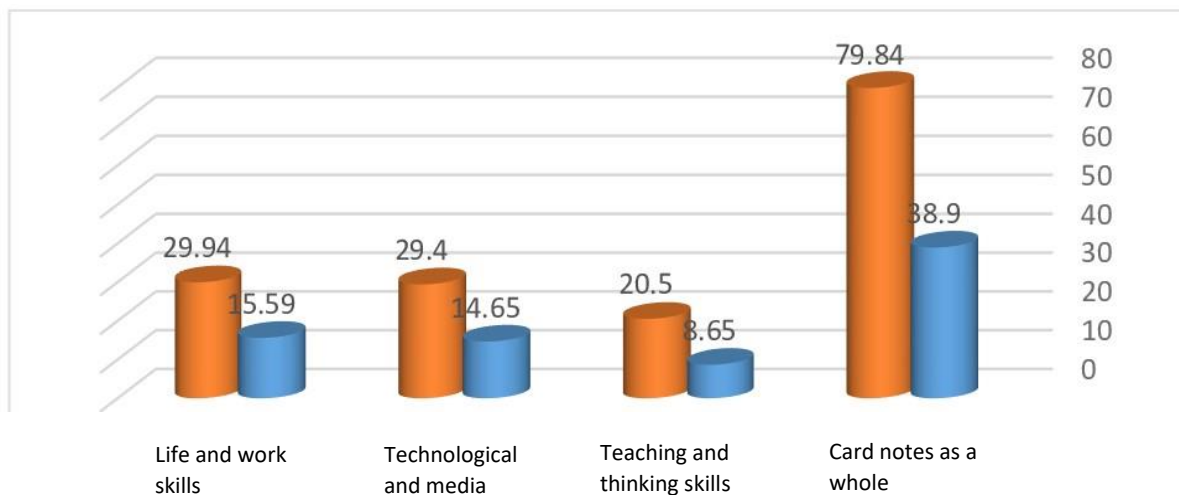
Verifying the validity of the first hypothesis

There are statistically significant differences at the level of significance 0.05 between the mean scores of the experimental group in the pre and post application of the twenty-first century skills observation card, in favor of the post application. To verify the validity of the previous hypothesis, the averages and standard deviations of the scores of the experimental group were calculated in the pre and post application of the twenty-first century skills observation card, as shown in the following table (1).

Table 1: The value of τ and its level of significance for the difference between the mean scores of the experimental group in the pre and post application of the twenty-first century skills observation card

Dimension	Application	Average	SD	DOF	τ	LOS	η^2	d	Significance
	Before	8.65	1.94	31	29.56	0.01	0.966	10.685	Large

Education skills and thinking	After	20.5	1.01						
Technological and media culture skills	Before	14.65	1.55	31	50.09	0.01	0.988	18.073	Large
	After	29.40	1.16						
Life and work skills	Before	15.59	1.36	31	54.30	0.01	0.990	19.900	Large
	After	29.40	1.21						
Note card as a whole	Before	38.90	2.69	31	71.42	0.01	0.994	25.896	Large
	After	79.84	1.66						



Blue: Before
Orange: After

Figure 1: The average scores of the experimental group in the pre and post application of the twenty-first century skills observation card

From the above results, it becomes clear that:

The mean scores of the experimental group in the post application were 79.84 higher than their mean scores in the tribal application 38.90 for the twenty-first century skills observation card as a whole, and for each of its dimensions. The value of τ calculated for each dimension was 29.56, 50.09, 54.30, and came They are all significant at the level of significance 0.01, and the value of τ calculated for the twenty-first century skills observation card was totally 71.42 in favor of the dimensional application, and the value of the Eta square for the twenty-first century skills observation card was 0.994, which means that the percentage of 99.4% of the variance in the level of twenty-first century skills (the dependent variable) is due to the independent variable (the training program), and the value d reached 25.896, which reflects a large effect size. In order to verify the effectiveness of the program, the average gain percentage for black was calculated and amounted to 1.256, which is an acceptable percentage

Based on the foregoing, the hypothesis was accepted, and the previous result is attributed to:

- The proposed program provided opportunities for students to actively learn through interactive activities, which focused on the positivity of female students and their active participation in the activities.
- The proposed program provided opportunities to integrate student teachers into activities that require problem solving, and helped build a culture of inquiry and critical thinking by asking questions and answering them in a creative and critical manner.
- The activities of the proposed program contributed to thinking in an unfamiliar creative way.
- The worksheets enabled students to search for information using technological techniques, and to organize information in a digital way.
- The program's activities provided a supportive and stimulating environment for creativity.
- The program included cooperative activities that contributed to the development of the skills of cooperation, participation and communication among student teachers.
- The strategies used in the program (asking questions, brainstorming, problem solving,

cooperative learning,) contributed to analyzing and evaluating information, exchanging ideas, and searching for creative solutions, and this contributed to the development of twenty-first century skills.

- The program included the application of structural methods of evaluation (before, during, and after), which helped in providing immediate feedback and improving the performance of student teachers.

The previous result agrees with the study [41-43], which found the effectiveness of the proposed program in developing the skills of the twenty-first century among students who are mathematics teachers, and the study [44], which found the effectiveness of the proposed program in developing twenty-first century skills and teaching performance for the student teacher and the study (Hussain and Al-Saadawi, 2021) [45], which found the effectiveness of the proposed program in developing the skills of the twenty-first century

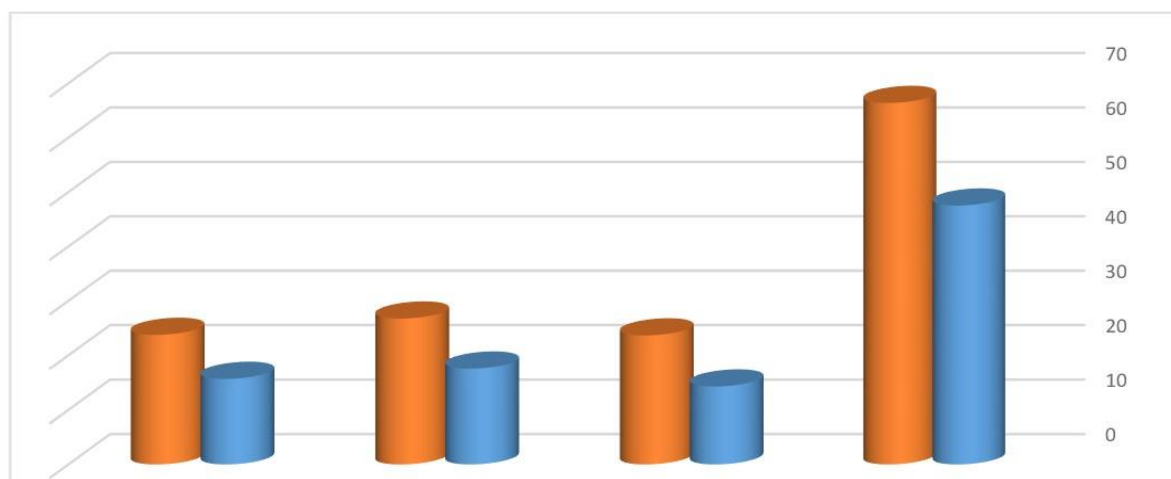
among students of the College of Education, and the study (Al-Qahtani, 2021) [46], which found the effectiveness of the proposed training program in developing the skills of the twenty-first century among the study sample.

Verifying the validity of the second hypothesis

There are statistically significant differences at the level of significance 0.05 between the mean scores of the experimental group and the control group in the creative teaching skills observation card in favor of the average scores of the experimental group. To verify the validity of the previous hypothesis, the averages and standard deviations of the scores of the experimental group were calculated in the pre and post application of the creative teaching skills observation card, and the following table illustrates this:

Table 2: The value of τ and its level of significance for the difference between the mean scores of the experimental group in the pre and post application of the creative teaching skills observation card

Dimension	Application	Average	SD	DOF	τ	LOS	η^2	d	Significance
Creative teaching skills related to planning	Before	14.28	1.87	31	25.94	0.01	0.916	10.685	Large
	After	23.65	1.01						
Implementation-related creative teaching skills	Before	17.56	1.64	31	20.83	0.01	0.933	7.459	Large
	After	26.75	1.96						
Creative teaching skills related to assessment	Before	15.68	1.76	31	19.25	0.01	0.923	6.935	Large
	After	23.75	1.36						
Note card as a whole	Before	47.52	1.89	31	41.53	0.01	0.982	14.791	Large
	After	66.38	2.87						



Creative teaching skills related to assessment

Implementation -related creative teaching skills

Creative teaching skills related to planning

Card notes as a whole

Blue:
Before
Orange: After

Figure 2: Average scores of the experimental group in the pre and post application of the creative teaching skills observation card

From the above results, it becomes clear that: The average scores of the experimental group in the post application 66.38 were higher than their average scores in the pre application 74.52 of the creative teaching skills observation card entirely, and for each dimension of the card, and the value of τ calculated for each dimension was 25.94, 20.83, 19.25, respectively. And all of them were indicative at the level of significance 0.01, and the value of τ for the observation card of creative teaching skills was 41.53 in favor of the post application, and the value of the Eta square of the observation card of creative teaching skills was 0.982, which means that the percentage of 98.2% of the variance in the level of creative teaching skills (the dependent variable) is due to the independent variable (the training program), and the value d amounted to 14.791, which reflects a large effect size. In order to verify the effectiveness of the program, the average gain percentage for Black was calculated and amounted to 1.189, which is an acceptable percentage

Based on the foregoing, the hypothesis was accepted, and the previous result is attributed to:

- The program provided an integrated and comprehensive methodological framework for all the skills that female student teachers need to reach creative teaching and achieve the desired results.
- The proposed program contributed to training female student teachers in planning skills;

and implement; Calendar activities in an unfamiliar creative way.

- The program included the use of many innovative modern strategies, and this helped to actually practice creative teaching skills during the implementation of activities.

- There are many types of assessment in the program, as it was used for the tribal assessment to determine the availability of creative teaching skills among female students; during training; Then use the final assessment after the training to help develop teaching skills.

- The program contributed to linking female student teachers to practical life by employing various teaching strategies that contributed to the students' positivity, enhancing their self-confidence and increasing their motivation to learn, and then actively participating in the program's activities.

This result is consistent with the study [47], which found that creative teaching activities contributed to problem solving, analyzing ideas, forming a balanced view of knowledge, uncovering ambiguity and risk, and overcoming obstacles, and a study [48] that I have found that innovative activities and methods motivate learners to learn and spark their curiosity and creativity.

Verifying the validity of the third hypothesis

There is a positive, statistically significant correlation at the level of significance 0.05 between the level of development of twenty-first century skills and the level of creative teaching skills among female student teachers, specializing in early childhood. And their scores on the creative teaching skills note card in the post application, as shown in the following table (3).

Table 3: Values of the correlation coefficients between twenty-first century skills and creative teaching skills

Number	parties to the relationship	Correlation factor	Level of significance
32	21 st century skills Creative teaching skills	0.765	0.01

It is clear from the previous table that there is a positive direct correlation between the scores of female students who specialize in early childhood on the twenty-first century skills scale and their

scores on the creative teaching skills observation card, the offer has been accepted:

- The proposed program contributed to the student teachers choosing the best ways, strategies

and means to implement creative activities in line with the skills of the twenty-first century.

- The proposed program contributed to the student teachers' understanding of their future roles, by employing technological techniques and thinking skills in an integrated manner in the training sessions.

- The proposed program contributed to the development of critical thinking and problem-solving skills among female students, and this was reflected in the implementation of the sessions in a creative manner.

- The program focused on the use of technological culture in organizing, providing and evaluating information, and this was reflected in the creative planning, implementation and evaluation of the activities accompanying the program.

The previous result agrees with the study [49] which found a relationship between creative teaching and technology use, problem-based learning activities, and work-based learning activities, and the study [50], which emphasized the importance of developing programs to develop the creative teaching skills of teachers before service so that they can integrate technological technologies into the educational process and meet the challenges of the twenty-first century, and the study [51], which emphasized the importance of including twenty-first century skills And innovative teaching strategies in pre-service teacher preparation programs to ensure that they are used in teaching later.

9. Conclusion

The results showed the effectiveness of the proposed training program, and the research recommended the importance of including twenty-first century skills and creative teaching skills in teacher preparation programs.

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