

The Creative Dimension for Chaos Theory and its Role in Development of Teaching Art Education Strategies

Noor safaa hassen¹, Dr. zuhoor Jabbar Al-Atwan²

Abstract

The aim of the current research is to reveal the creative dimension of Chaos theory and its role in developing strategies for teaching art education. The researcher followed the descriptive and analytical approach that is compatible with her research procedures. For the purpose of achieving the research objectives, the researcher built a questionnaire to determine the relationship between the creative dimension of Chaos theory and the development of education teaching strategies. Art, and the five-point Lickerd scale was adopted, which includes five numerical grades (5, 4, 3, 2, 1). The research sample consisted of teachers in art education departments in Iraqi universities, and the questionnaire was characterized by honesty and reliability., the existence of a correlation between the research variables was tested and the existence of a significant effect was verified or not, and the nature of the relationship between the variables was known. Linear regression was used to determine the presence of a significant effect or not between the variables at a significance level (0.05). As for verifying the nature of the relationship between the variables. The Pearson correlation coefficient was used according to the following standards: from (- 0.5 to 0.1) is considered a weak correlation, from (0.51 - 0.70) is considered a moderate correlation, and from (0.71 - 0.9) is considered a strong correlation, and the significance of the relationship was accepted at the level of significance (0.05) or higher.

The results showed the existence of a strong and statistically significant correlation between the creative dimension of chaos theory and the development of strategies for teaching art education historically, It appeared from the correlation results that most of the strategies in which chaos theory played a role were (role-playing, brainstorming, diaspora gathering, discovery, cooperative learning, and concept mapping), as the correlation was very strong and statistically significant in all its criteria and axes.

Keywords: *creative dimension, Chaos theory, strategies for teaching art education.*

Introduction

Research problem:

Education is a complex phenomenon of factors and interactions that have mutual influence and influence. It is not a one-dimensional behavior, but rather an activity that includes many variables that affect the behavior of the teacher and the learner. Therefore, educators have always sought, with all their efforts, to formulate, reconstruct, or employ theories to find new concepts that are intellectually independent in themselves.

¹ Al-Mustansiriya University / College of Basic Education, noorsafaa223@gmail.com
Ministry of Education / General Directorate of Education, Baghdad Al-Karkh/First q

² Al-Mustansiriya University / College of Basic Education.

Cognitively and aesthetically, arriving at visions and proposals that work to redirect education, move its paths, modernize it, and then produce it again in order to take its path to implementation, to extract from the cultural and ideological heritage of society what enables it to express mechanisms, methods, strategies, and new technological methodologies for education, and to build theory.

In society, through an implicit displacement of the means of imitation and imitation, in an attempt to reach creative standards that go beyond the logic of what is existing, to another logic, to be replaced by a new current of education, knowledge, and education formed under the pressure of modern technologies and contemporary social ideologies, through the Caius theory that aims to recombine. And construction versus deconstruction and questioning educational contexts based on clarity and monotony, and imbuing it with creative and educational thought - applied and literal, and arriving at philosophical standards and aesthetic concepts that go beyond the logic of teaching and learning theories. Kayos is an attempt to stimulate thinking, analysis, and research on how to form utilitarian, aesthetic, and educational connotations as a result of intellectual cross-fertilization. Between the concepts of traditional and contemporary education, as it was shown that education and

its institutions are affected by external factors, such as economic recession and the decline in job opportunities available to individuals after they finish school. (Fabium, 1991, pp. 52-53)

From the above, the problem of the current research was determined by the following question: (What is the relationship of Caius theory and its creative dimension to developing strategies for teaching art education)?

Research importance:

1. The current research may use Caius theory as a theoretical knowledge base for future research to determine the rules of use in the face of the dynamics of the educational system and its environment.
2. The results of this study may help enrich educational planning processes for art education and arts education by directing attention to developing teaching strategies based on modern scientific theories from other fields such as Caius theory.

Research objective:

The current research aims to: Revealing the creative dimension of Caius theory and its role in developing strategies for teaching art education

The above goal is achieved by answering the following question: (Is there a statistically significant correlation between the creative dimension of Caius theory and the development of strategies for teaching art education)?

Research limitations:

The current research is determined by the following:

1. Objective boundaries: Caius theory, strategies for teaching art education (discussion, brainstorming).
2. Time limits: The academic years (2021/2022) and (2022/2023)
3. Spatial boundaries: Departments of art education in Iraqi universities / colleges of fine arts, applied arts, education for the humanities, and basic education.
4. Human limits: Faculty members - Specialization (methods of teaching art education - Philosophy of art education) in the departments of art education - colleges of fine arts, applied arts, education for the humanities, and basic education affiliated with Iraqi universities.

Definition of terms:

□ First: The creative dimension: It is the extent of intellectual fluency, spontaneous flexibility, originality and long-term repercussions that crystallize over a period of time in response to an exciting situation or a new problem, defining a new outline resulting from the interaction of mental, personal, and social factors in the individual. This interaction leads to New innovative products or solutions for theoretical or applied situations in a field of science or life, so that these fields are characterized by modernity, originality, flexibility, and social value, through the mind's ability to discover, divergent thinking, and flexible imagination to perceive the relationships between two different things to produce a third thing.

Accordingly, the researcher defines the creative dimension procedurally as (the extent of reflection that occurs in modernizing and developing strategies for teaching art education according to the data of (Caius Theory) in a way that makes the strategy capable of dealing in a comfortable manner with ambiguous or unspecified educational situations, finding new approaches and experimenting with completely new methods and applications. The strategy is characterized by modernity, originality, flexibility, and educational value.

□ Second: Caius Theory: According to (William J. & Garth D., 1997, p. 94), Caius Theory is a new method for understanding the dynamic system, taking into account the phenomena that lie outside this system, which is the wave of the future, As Al-Sabaawi, 2017 defined it as: "A social human theory that aims to exploit elements within societies that aspire towards change, and support them through general movement in society and bringing about changes that occur in stable balances. It includes several topics with different dimensions, such as (mathematics, (physics, engineering, art, economics, literature, politics, and culture), and are dealt with with new and advanced concepts." (Al-Sabawi, 2017, p. 38)

The researcher defines Caius theory procedurally as: (a theory based on cognitive thinking and analysis that contributes to developing strategies for teaching art education with an aesthetic, creative, educational and cognitive awareness that matches the concepts of the educational reform movement, resulting in a change or modernization in the learner's intellectual and artistic concepts, and his methods of mental reception, And cognitive to generate new constructive ideas.

□ Third: Strategies for teaching art education: Defined by (Ehman et al., 1974): "The comprehensive plan that is developed by the teacher to achieve his teaching goals." (Ehman et. al., 1974, p43).

I defined it (Kojak, 2003) as "an action plan drawn up to achieve certain goals, prevent unwanted outcomes, and be designed in the form of procedural steps. In this case, alternatives are developed for each step that allow flexibility when implementing the strategy, and each of its steps is transformed into tactics or methods." Partial and detailed, carried out in an intentional and planned sequence in order to achieve the specified goals.(Koçek, 2003, p. 203).

The researcher defined it procedurally (an action plan for teaching art education that is designed in the form of procedural steps that are flexible, sequential and comprehensive, and implemented to achieve specific goals in art education lessons, and it was developed in light of the data and standards (the creative dimension of Caius theory).

Theoretical framework and previous studies

- The first topic: Caius's theory and its creative dimension:

Chaos is a political belief that transforms the phenomenon of social chaos from a negative phenomenon that destroys social and institutional structures, to a positive phenomenon that results in a new situation better than the previous one. <https://democraticac.de/>

Researchers in the field of social sciences believe that the reason why Caius is called creativity is because it stimulates renewal, change, revival, and revitalization. They see that the origin of all of this is chaos, which is a tool for creative change, and that organizations of all kinds (political, administrative, educational, economic, and others) And through its leaders, it must stimulate periodic changes of a chaotic nature in order to push the stable system to renewal and modernization. It believes that democratic systems are inherently chaotic, and hence whoever is in charge must strive to strengthen democracy because it carries the seeds of chaos from a lack of order. And instability and multiple inputs for decision-makers, which is a healthy thing for organizations of their various types to be renewed and to remain alive and not die and disintegrate (Dina, 2012, p. 38).

In contrast to the concept of chaos, which is burdened with negative connotations, such as instability and fragmentation, the term "chaos" was added to it. Another with positive connotations is creation or construction and innovation. Caius theory also says that no matter how developed any existing system is, the system remains complex and complex, and this makes it sensitive and vulnerable to unforeseen influences, which begin with a simple defect that affects one part, and causes reactions in other parts that affect it. Regularity of work within the system as a whole. (Nizar, 2005, none).

The origins of the Caius theory of science:

Caius's theory can be considered one of the futuristic methods that suit the phenomenon of complexity that characterizes our current dynamic era, and which predicts the continuation and depth of complexity depending on the signs of the future, its uncertain situations, random events, and non-linear inferences that appear clearly in most of the phenomena and events that scientists and researchers have devoted themselves to studying and researching. From a scientific point of view, the Chaos Theory can be viewed as a new branch of science that is concerned with studying the phenomena of imbalance, disorder, nonlinearity, and disorder in various fields of science, such as the behavior of animal populations, climate, and biology, as well as trade, economics, the movement of financial markets, and the development of the branch of science. This is towards human and political societies. (Al-Minyawi, 2018, p. 46) The strongest advocates of this new branch of science say that the science of the twentieth century will be immortalized in history due to three factors: (quantum mechanics, relativity, and chaos), and others go further than this as they confirm and declare that Chaos is the third greatest revolution in the physical sciences. (Leonard, 2020, p. 45).

The roots of Caius' theory go back to what the scientist Henri Poincare (1854-1912) achieved by proving that the behavior of natural bodies in the solar system cannot be explained using linear physics and Newton's laws, in addition to his discovery of the phenomenon of "sensitivity to initial conditions", which means "when there is a change in... "One of the factors affecting a system or one of its components, resulting in a change in the system." He also pointed out that determinism and randomness have become compatible to some extent, due to the unpredictability of the long term. (Oestreicher, 2007, p. 282) Despite the contradiction between the two terms, the determinism hypothesis states that every event is subject to a predetermined logical causal sequence within a discontinuous series of events that lead to each other according to specific laws, while the randomness hypothesis refers to events with an undetermined outcome. It is not possible to predict it in advance, which means a loss of planning. However, the two terms

have become very close as a result of the inability in most cases to determine the initial conditions referred to by Henri Poincare, which makes predicting what the phenomenon will lead to difficult. (Christian, 1996, p4) In general, the emergence of Caius' theory can be considered a shift in Western science, which was quantitative and tended towards studying quantity, neglecting the qualitative properties of things and phenomena. This theory restored consideration to becoming, change, and movement, after classical science had adopted a vision of phenomena characterized by constancy and stability. And balance, as chaos is a science of becoming rather than a science of stable conditions and circumstances. (Elias, 2009, p. 309) Caius' theory also recognizes that the development and complexity of knowledge always accompanies a state of chaos or confusion, accompanied by continuous feedback. (Pryor, 2011, p. 27)

Classical science, which focuses on regularity, linearity, stability, and the ability to predict, has become difficult to implement in a complex and unstable environment. Therefore, modern science, according to Caius theory, rejects the principle of absolute truth, and emphasizes that truth is relative, and must always be viewed with suspicion, study, and close attention to all matters. aspects, and the scientific context began to reject the vocabulary of determinism, stability, certainty, and necessity, and replaced them with the vocabulary of probability, unproven facts, and extensive research leading to new ideas.

Theoretical references of Caius in education

Caius' theory did not stop at a specific point, but rather extended to include all aspects of social, cultural, psychological, and educational life. It contributed effectively to the education system by directing the learner's behavior by interpreting the variables taking place in the reality surrounding him that move toward chaos and randomness, which constitutes a state of chaos. The shift towards a new variable in education through Caius's ability to generate ideas from the throes of what these variables cause in the learner's reality, taking his behaviors out of closed circles and into a broader, more numerous and diverse horizon. Based on the above, there was a group of learning and teaching theories that constitute the main factors. Determinants of behavior, and among these theories are the following:

1- Behavior Change Theory: An integrative theory of treatment in behavioral psychology, which evaluates the readiness of the individual learner to perform a new healthy behavior, with the availability of change processes and strategies to guide and direct the learner. The theory consists of structures, which are: (stages of change - processes of change - Levels of change - self-ability - and decisive balance) and its scholars' point of view in explaining behavior is based on what is called (the law of effect), which emphasizes the effect of external factors affecting the learner, the effect of accumulated experiences, and methods of dealing with new knowledge, and the positive effect extends to other links, The effect decreases as the distance between similar connections increases, and the learner realizes the value and result of his effort, as he becomes creative here in thinking, reception and application, and the possibility of this theory to advance and change the behavior and culture of the learners by changing their thought and outlook on work and production, and this theory is applied when Caius appears, and when the needs of society change. It adopts the philosophy of gradual change and development, which is a phased and successive process of reform. This is reflected in artistic education, which often reflects thought and depth of presentation at the level of the prevailing culture of society by possessing a background knowledge of the intellectual, cultural and social dimensions of the structure of any artistic work in order to interpret, analyze and read it correctly. Therefore, Caius's theory is linked to the theory of human needs and motivations, as it is based on the assumptions of basic social needs and relationships, and the needs of proving the productive and interpreting self. (Al-Khatib, 2020, p. 297-300).

2- Bandura's theory: Caius' theory is linked to what was proposed by Bandura's theory of social learning through observation, regarding the process of substituting and changing behavior, which stipulates the learner's role in observing the behavior of others around him and its results. Thus, learning new behaviors stems from the learner's experience in making and creating perceptions. Mental awareness of social events, and re-reading them through a mental review of the image of the meaning, and modifying it with the continuation of reading whenever a new dimension of the intended meaning itself appears, which is built through connections between a series of symbolic and conceptual structures of the text, action, or behavior appearing before him from others, ending up with engaging in an interpretive cognitive activity. It leads to determining the meaning, and it is called (feedback) represented by interaction and dialogue to enhance the meaning based on his previous experiences. Bandura mentioned major issues in his theory, including:

- The acquisition of new responses has past cognitive roots and the application of mechanisms that depend on observation, performance, and motivational factors in simulation-based performance.
- Studying the relationship between the learner and society, and on whom does the educational responsibility fall and how it is challenged by the factors of chaos in society, as there are internal and external factors, and a third is contextual that links the event and its reshaping, and then the learner chooses a performative educational style that suits his personal formation.

(John Gee, 1983, pp. 146-149)

3- Psychoanalytic theory

It is considered one of the most important theories in the field of psychology, as it discusses how to deepen understanding of the human personality, explore the mind and behavior, and develop treatment strategies through psychoanalysis, as (emotional catharsis, projection, and self-clairvoyance) are among the most important methods used in getting rid of chaotic behaviors. And dealing with educational situations in a way that achieves compatibility and mental adaptation to reach the mental strength necessary to achieve the difficult goals set by psychological factors such as (stress, anxiety, and self-confidence) (Smith, 1994, p89), which can affect behavior, and mental adaptation then helps. To create a focused vision of what the learner needs, the possibility of achieving his requirements, and developing the mental fortitude to achieve all of this.

Caius theory has developed ideas and plans aimed at treating chaotic behavior among individuals, developing social skills to behave properly, giving them cognitive skills, and introducing them to the negatives of chaotic behavior. It begins with monitoring facts and the dialectic of subject and object, so the learner sees the basis of everything in everything, the relationship of the smaller and the larger, and comprehensiveness. Cognitive knowledge is a continuous and continuous movement, and a debate between the expected and the unexpected. The laws of Caius and their formulas are subject to change and change. (Glick, 2008, p. 20)

4- Information processing theory

Information processing theory believes that learning is not just a link between a stimulus and a response, but rather is the product of a series of cognitive processes that mediate between receiving the stimulus and producing the appropriate response to it. Information processing theory focuses on how learners pay attention to environmental events, encode information that can be learned, and link it to knowledge in Memory, storing new knowledge and retrieving it when needed (Schunk, 2012).

According to information processing theory, the learner is exposed to enriching experiences from the surrounding environment, whether visual, auditory, or cognitive,

which leads to creating a kind of chaos and conflict of opposites, creating behaviors characterized by chaos and disruption of order in the learner's mind and in his organization of his information and his cognitive construction, which necessitates the demolition or undermining of previous experiences and replacing them with others that were paid attention to and worked to include in the learner's stock and cumulative cognitive construction. Thus, it is very close to the characteristics of Caius' theory in the type of variables that are affected by it, and in its nature and characteristics such as distraction, confusion, and creating a state of instability that pushes and motivates the learner to reach The state of stability, balance, and adaptation to the surroundings in its transmitters and receivers.

The creative dimension of Caius's theory:

Creativity arises with humanity through the processes of generation and diversity of ideas. Creators are more chaotic and cultured, more destructive and more constructive, and sometimes crazier, but with this they are more balanced than others. Stimulating chaos that opens up to unlimited horizons is such that no one can predict its outcome and it erases the dividing line. Between the unknown and the known, between the old and the new, and between the reasonable and the impossible, as the process of creativity is greatly influenced by the surroundings and environment in which the individual lives, through prevailing values, customs, traditions and beliefs, and everything related to the cultural heritage of society, and certainly societies differ from each other in their culture. And its beliefs and construction (Saleh and Muhammad, 2017, p. 174), and through our tracing of the epistemology of Caius theory, we noticed in its development and characteristics indications indicating its creative dimension, burdened with intellectual, aesthetic, and cultural transformations that spread and were reflected in all areas of social life, and its creative dimension is evident in the following:

- Originality in ideas and the way they are presented, and not repeating the same results for the same ideas due to the excessive sensitivity of Caius' theory to initial conditions.
- Flexibility and adaptability to developments or emergency circumstances.
- Fluency of ideas and solutions, and generating more than one solution alternatives for a particular problem.
- Continuous renewal and great ability to change, modify and continually update.
- Taking advantage of the state of turmoil, confusion, and instability to build a new system that restores balance and stability.
- Difference and conflict in any system is a reason for innovation and creativity.
- The policy of dismantling followed by Caius theory, and rebuilding on new foundations.
- Combining opposites into an interconnected, interacting whole, such as the familiar and the unfamiliar, entanglement and dissolution, complexity and simplicity, and others.
- Expanding the field of interest of individuals and institutions through openness to the expertise and experiences of others and examining modern sources of information through review, examination and research. (Saleh, and Muhammad, 2017, p. 170-171)
- Searching for connections by finding new connections between things that do not appear to be connected on the surface.
- Destroying habits that hinder thinking, development and progress, and finding unconventional solutions to inherited habits. Maximizing the use of all senses that indicate chaos with a deep sense of the situation, a great ability to research, analyze and scrutinize, and provide many alternatives and evaluate them continuously.

The second section: Strategies for teaching art education and reasons for developing them:

Art education is considered one of the academic subjects in which creativity and imagination are most involved, and therefore this subject in particular works to develop minds and increases the creative and conceptual imagination of learners, and this is in fact what is required to be activated and developed in them, because creativity and art are the code of success and distinction from others. If we want there to be an intelligent and creative generation, we must teach them and train them in imagination and innovation, and these things are certainly provided by the art education subject. The process of teaching art education has a moral and ethical role in addition to its scientific and professional role. If the teacher does not realize these aspects with a conscious culture, the results of his teaching will be artificial and random. Art education contributes, along with other academic subjects, to developing the learners' aptitudes, so it can be considered a path through which education occurs. Personality is built, and advanced habits and trends are formed in the learner, which together with other subjects represent a network of relationships that seek to achieve sound growth in accordance with his mental, physical, and psychological capabilities. Thus, it can be considered the window through which the learner looks into his own world to communicate with the outside world, and given its nature and its functional dimension of achieving... The goals of the educational process in general, and its own goals in particular. Therefore, art education lessons depend on methods and means for their implementation and evaluation, and teaching strategies with procedural steps that have a theoretical side and an applied side, and one of the most important conditions for ensuring the quality of the teaching strategy, as defined by the Arab League for Education, Culture and Science (ALESC) (2002) is characterized by (effectiveness, flexibility, comprehensiveness, accuracy of planning, connection to goals, decentralization and pluralism, integration and interconnectedness, phased strategy, applicability and realism, with a dynamic,

developmental mechanism, taking into account the spatio-temporal conditions of the educational environment) (Qatami, 2013, p. 64-71).

Strategies for teaching art education in its various forms and types are the true means of communication that carry the message and goals of art education, whether the content of this message is cognitive, skill-based, emotional, or value-based. They vary according to the diversity of the educational goals to be achieved, and they are the chosen path to move toward achieving the goal, to modify the behavior of learners or to add Their behavior is through them practicing a cognitive or skillful artistic activity, through organized and sequential procedures and steps adopted by the art education teacher to achieve the educational goals, and arouse the learners' motivation and enthusiasm, to achieve effective learning in the shortest time and least effort, through the teacher finding a compatible formula between the goal and the method of achieving it, Therefore, the art education teacher has the responsibility of choosing the appropriate strategy for teaching his learners a specific subject, and decides the suitability of this strategy for his lesson, its topic, his role, and the role of the learner in it, and the extent of its suitability to the conditions and environment of the classroom.

Classical (traditional) teaching strategies: Traditional teaching strategies are considered one of the obstacles to quality and the progress and development of education, as they depend on boring narration, memorization and indoctrination, in which the teacher asks the group of learners to memorize the facts and concepts first and then re-read them, and examples of them are news or recital, and the greatest responsibility falls on them. In it, he is the focus of the education process, as he is the one who analyses, diagnoses and explains, and the learners listen to him without making any effort, participation or interference from them, and this is what leads to the decline and weakness of the quality of the teaching and learning process. (Tohme, 2017, pp. 58-59)

Among the traditional teaching strategies are the following: -

□ First: The lecture: It dates back to the time of the Greeks in the fifth century (BC), and was adopted by Christian and Islamic universities in the Middle Ages. (Fadil, 2010, p. 77), and the teacher's role is to fully control teaching-learning situations in terms of planning, implementation, and follow-up, while the learner is a passive recipient, and attention is focused on the cognitive outcomes of science, including facts, concepts, and theories (Abdul Hamid, 2011.p. 30), also known as rhetoric. Many teachers tend to use this strategy for the following reasons:

1. Some teachers believe that this strategy gives learners a large amount of knowledge and information in a short time and with less effort.
2. Some teachers are accustomed to using it and are afraid of trying another strategy.
3. Some teachers resort to it due to the length of the academic content.
4. The large numbers of learners in classrooms is a good reason for adopting this strategy in teaching.
5. Its ease and lack of cost prompts some teachers to adopt it in teaching. (Hindawi, Bala, p. 17)

□ Second: Discussion and dialogue: It goes back to ancient times. Socrates used it to extract ideas from the minds of his students, and Aristotle also used it to teach his students and encourage them to research (Fadil, 2010, p. 90).

It is also a verbal strategy, but it differs from the lecture in that it allows verbal interaction. Between two parties (teacher and learner) or (learner and learner) under the teacher's supervision and guidance. It is defined as an organized dialogue based on the exchange of ideas and opinions and results in an interaction of experiences within the classroom. It aims to develop the learners' independent thinking skills, through the evidence provided by the learner in His responses during discussions (Abdul Hamid, 2011, p. 111), so they require comprehension, analysis, and synthesis, leading to an increase in the learners' understanding of the material and their awareness of the topic under discussion. This strategy emphasizes the teacher's democracy, breadth of knowledge, fluency in speech, accurate linking of information, and his By conducting an oral dialogue during the lesson, with the aim of reaching new information and data, through which ideas are mixed and opinions are combined without bias towards a particular opinion. Rather, it encourages acceptance of the other opinion. Therefore, this strategy requires a leader for the discussion, embodied in the person of the teacher, who is distinguished by experience in managing dialogue and discussion, and the ability to Extracting learners' ideas, information, and responses. (Al-Saliti, 2015, p. 374)

Reasons for developing strategies for teaching art education:

With the development of psychological studies, which produced many theories that attempted to explain the learning process, and determine the conditions and laws for its occurrence, coinciding with the scientific and informational development that the world has witnessed, and the emergence of the concepts of globalization, the knowledge society, and a highly qualified society, it has become certain that all educational systems must review and develop their teaching processes. And its tools in achieving its goals, and in order to achieve the target individual profile for the twenty-first century, the global profile and not just the local profile, the global profile that aims to provide the learner with a set of cognitive, methodological, and communicative competencies that will enable him now and in the future to adapt to the constantly renewed scientific, intellectual, technological, and social variables. To become a responsible, thinking, creative, and productive individual within the context of his local culture, as well as the world and humanity in general. Perhaps the most important of them, after developing and updating curricula and

related to their implementation, is the set of pedagogies or teaching strategies that the teacher must work with, activate and use effectively in order to help the learner build the targeted resources. (Demeuse, 2013.p2), and development is an engineering process in which the strength aspects are strengthened and the weak points are addressed. It is also called the gradual change that occurs in the composition of societies, relationships, systems, prevailing values, institutions or tools, and development takes place in the light of standards Depending on the stages, other sub-processes are linked to the development process, namely: the processes of modification and improvement, and these two processes are less comprehensive and less profound than the development process itself. (Tawfiq and Al-Heila, 2000, p. 293)

What is meant by developing strategies for teaching art education is to modify, redesign and build them by introducing innovations and innovations into their components and elements in order to improve the teaching-learning process and achieve its goals in art education lessons. In order for the process of improvement and modernization to take place properly, the goals of the strategy should be clear and comprehensive of all factors of the process. Educational and classroom and extra-curricular educational situations, and based on scientific foundations, and should be continuous and cooperative in which both parties of the educational process (teacher and learner) participate through cognitive and skill-based artistic activities. The process of developing strategies for teaching art education should keep pace with evaluating and updating the curriculum side by side, as well as Benefiting from modern educational experiences and trends, and choosing appropriate ones according to their suitability to the customs, traditions, and thought of societies.

It has become necessary for the art education teacher today to become familiar with modern teaching strategies, because of their effective impact in improving the quality of learning and teaching. This is because traditional strategies can no longer meet the needs of the third millennium, as the wheel of education has become very fast, so it must not be wasted. The time and time of learning through strategies whose use experiments have proven to be limited. The rapid development that has taken place in our contemporary societies in their economic, cultural, and technical levels, methods and means of living and daily life, as well as global openness through various media and communication media, has had a major impact on social traditions, which necessitates With it there is a parallel educational change. (Shawqi, 2009, pp. 61-62)

All of the above has made it clear that the process of developing strategies for teaching art education has become a necessary matter, and an imposed and taken-for-granted reality. Based on the above, it can be said that the reasons for developing strategies for teaching art education can be attributed to the following reasons:

- 1) The emergence of a new concept in education known as continuous education, that is, the continuation of an individual's learning throughout his life, and his educational-learning life does not end once he graduates from the university.
- 2) The emergence of new social pressures on the education system, as the educational institution today performs many growing functions (teaching, social normalization, and preparation for work life) under rapidly changing social conditions, due to the increasing quantity and quality of means of communication, and global and international political pressure. , local, and others.
- 3) Changing and developing art education curricula in the wake of modern developments, cultural, informational, cognitive and social openness, and labor market requirements, because contemporary curricula have a reciprocal nature (influencing and being influenced) by society, the environment, culture, the learner, and modern theories, which has been directly reflected in their teaching strategies and the necessity of updating and developing them.

- 4) Addressing scientific and cognitive stagnation through teaching strategies for art education that tend toward activating openness, dialogue, and acceptance of others.
- 5) The role of both the teacher and the learner has transformed in contemporary education. The teacher is from an authoritarian controller and main source of knowledge, to an influential leader, guide, facilitator, transmitter of knowledge, information processor, behavioral corrector, educational guide, psychological and value therapist, and the learner from a passive party receiving information only to an active party entrusted with a lot. One of his learning tasks according to his abilities and tendencies.
- 6) The emergence of new types of curricula imposed by the information reality and the growth of its development in rapid, non-gradual leaps, such as the electronic curriculum.
- 7) The population, knowledge, and technical explosion that imposed modern systems of learning and new patterns of education, including: distance education, open education, self-learning, and others.
- 8) Multiple sources of knowledge and innovation of new tools for modern learning technology.
- 9) Adapting theories from other fields and sciences, such as politics, economics, society, psychology, and others, which has become self-evident that education, with all its components and tools, responds to its variables and repercussions on education and education within the framework of the reciprocal relationship (influence and influence) between education and its goals and other fields and sciences of life.

Modern teaching strategies:

Modern teaching strategies aim to dismantle and reduce the restrictions imposed on the learner, those obligations that limit his thinking and thus his cognitive gains, and seriously seek to give him greater freedom to discover himself and develop his spirit of creativity and innovation, and the ability to dialogue and be open to the opinion and thought of others with the intention of cooperation and sharing goals and ideas, through:

- Providing a space of freedom for the learner to demonstrate and highlight his abilities and accustom him to investing and employing them in educating himself.
- Employing various pedagogical methods and approaches in the academic environment.
- Helping the learner to demonstrate his skills in observation, analysis, interpretation, asking questions and hypotheses, and arriving at conclusions and answers.
- Motivating the learner and pushing him towards developing the skills of doubt, criticism, and thinking in logical, scientific ways based on scientific proofs and evidence.
- Developing the spirit of cooperation, synergy, solidarity and participation among learners by encouraging work in groups. (Al-Zend, 2018, pp. 305-306)
- Exchange of effort between teacher and learner.
- It makes what the learner has learned more influential in his behavior and in his cognitive construction, as he does not receive abstract scientific material, but rather behavioral material that refines his personality by encouraging him to dialogue, discuss, express his opinion, and explore.
- Transferring the impact of learning to other life situations and new problems. (Joseph, 2004, p. 83)

This in itself is an educational reform that provides a completely different angle to teaching because modern teaching strategies do not treat all learners at the same level of their ability to understand. The educational process has two main parties (the teacher and

the learner). If the teacher performs his role without the learner, the teacher's efforts will fail or the results will be weak. The learner must know how to learn, how to retain information, and how to interact with it, and the following diagram (1) represents a summary of the idea:

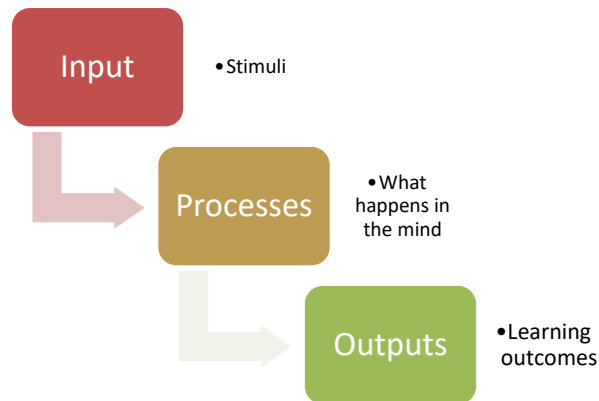


Diagram (1) Learner's interaction with the learning topic.

In art education lessons, learners are exposed to a set of inputs (information and artistic activities) that the teacher tries to give them, and while the learners interact with the inputs, they perform a set of emotional and subconscious mental processes such as (attention, remembering, perception, analysis, conclusion, application, evaluation... etc.), and strategies come. Teaching is to train learners on how to organize these processes. The more they are able to understand and apply these strategies, the more this will be reflected positively on the growth of their technical abilities in reception and production.

Modern teaching strategies:

□ Brainstorming strategy: It is known as an educational method based on independence and freedom of thinking, with the aim of collecting the largest number of new and creative suggestions and ideas on the topic of the lesson from the learners participating in the brainstorming session within a short period of time to solve a problem or address something. This strategy To ask questions to the learners, and they in turn provide answers and ideas. The brainstorming session is based on four basic principles, which are:

- Postpone the evaluation until after the learners have completed generating ideas and writing them down, because criticizing any idea will cause the learner to lose follow-up and distract him from trying to come up with a better idea. Fear of criticism and feeling stressed hinder creative thinking.
- Releasing the freedom of thought, to reach a state of relaxation and non-reservation, which increases the release of creative abilities to imagine. (Al-Saliti, 2015, p. 385).
- Quantity before quality, meaning focusing on generating the largest amount of ideas, regardless of their quality. Irrational ideas are acceptable. This principle is based on the assumption that creative ideas and solutions come after a number of unusual solutions to generate original ideas.
- Building on the ideas of others, meaning it is permissible to develop the ideas of others and come up with new ideas.

<https://www.stqou.com/ar/learning-theories>

□ Role-playing strategy: Its principle is based on representing realistic behavior through an artificial situation, and applying it to the fullest extent. In this strategy, each individual participating in the educational representational activity must assume a specific

role and interact with his colleagues in the scene based on the boundaries of the relationship. His role depends on their roles, and therefore it is a strategy that depends on simulation, actual application, reformulation and presentation of the idea again, in a manner different from the previous one, or imitating or celebrating it. (Abdul Hamid, 2011, p. 117), and it is one of the teaching strategies that achieves mental and emotional interaction. The use of the role-playing strategy began in the sixties of the last century, and its pioneers were Schaftel George & Fannic, who trained learners in social interaction and solving social problems on their own. (Maysa, 2011, 33)

Therefore, the activity included in the role-playing strategy is a voluntary activity that is performed in a specific place and time, according to recognized rules and principles, and the learners choose their roles that they will perform on their own or with their consent if the teacher chooses specific roles for them according to his vision and knowledge of the capabilities and desires of his learners.

From the above, and in view of the importance of art education in that it is considered the most important basic pillar for the integration of the learner's intellectual, psychological, skillful and social development, it enriches their lives, helps them adapt to their society and surroundings, invests their free time and relieves them of psychological stress, which makes the learner more willing to learn and more active. Accordingly, the strategies for teaching art education vary depending on the change in perception of the nature of the learning and teaching processes in art education lessons. After being based on indoctrination, reciting, and simulating skills or behavior, they have expanded to include cognitive, skill, emotional, and value levels, and the development of different types of thinking, which requires The learner's positivity in education, with the aim of showing his latent abilities and improving them. Traditional methods of teaching are no longer suitable for contemporary life, so many theories have emerged that look at modifying and correcting behavior and acquiring skills for the third millennium after the arms of knowledge extended to reach all aspects of life to meet the needs of the labor market. These theories Modern teaching helps to acquire many social, mental, and motor skills, transforming the role of the teacher from a prompter to a leader. It provides the opportunity for learners to acquire knowledge on their own, and to participate effectively and willingly in educational activities until they become accustomed to independence in thinking and work. All of this can only be achieved with advanced teaching strategies that achieve attitudes. Educational education that puts the learner in real confrontation with society and its problems, influences the learner's own behavior, refines his personality, provides him with knowledge and skills, takes into account his inclinations, interests and individual differences, as well as linking the learning outcomes to what benefits the learner himself and the society in which he lives in the future.

Indicators of the theoretical framework: -

- Caius theory is an intellectual activity that creates chaos with the aim of reorganizing and employing the ideas and trends that have been developed within the framework of education in order to bring its beneficiaries to the highest levels of flexibility, adaptation, acceptance of others and integration with them within the framework of what the vision and culture of the society concerned with education in general allow.
- From the point of view of many educators in the field of art education, Caius theory is considered an obligatory turning point because the current decades have witnessed wide transformations in the pattern of thinking, perception and living, and it can be described as a state of transition and not intellectual confusion in the fields of the arts and their teaching.
- The creative dimension of Caius theory is represented by (complexity, openness, and bifurcation (nonlinearity), primary sensitivity to initial conditions and their

inevitability, non-repetition of results, policy of dismantling and rebuilding, and self-organization).

- Educators stressed the need to pay attention to the effectiveness, modernity and quality of teaching strategies used by teachers, which should be commensurate with the variables of the era in which they are used.
- Advanced and effective art education teaching strategies work to develop the spirit of cooperation and teamwork, achieve creativity and innovation, and openness to others within the limits permitted by values, customs, and the philosophy of education and society, and bearing responsibility in developing society with its values and trends.
- The development of strategies takes place in light of modern theoretical backgrounds that prove or determine the quality of teaching strategies, which leads to a balanced renaissance in scientific aspects and societal values.

Previous studies and their discussion:

Study by Al-Sayed Ali (2017):

(A proposed method for planning educational systems in light of chaos theory)

The study aimed to build a new planning method that contributes to confronting the dynamism of the educational system, and that leads to harmony and suitability of education with the needs of society, its transformations and changes in light of chaos theory by shedding light on chaos theory and its nature, clarifying its impact and its relationship to planning educational systems, and proposing a new method for planning Educational systems. In his study, the researcher used the theoretical, descriptive approach and reached several results, including:

- 1) Planning thinking related to educational systems must be developed through cognitive bases through which the dynamic characteristic of the educational system can be confronted and the fluctuations and environment of the system can be taken into account.
- 2) Proposing a method for educational planning in light of chaos theory. (Al-Sayed Ali, 2017, 195)

Study Tomljenovic (2015):

(An interactive approach to learning and teaching in visual arts education)

The study aimed to find an interactive approach between learning and teaching art education through teaching, or through the use of modern teaching strategies based on technology. The study adopted the experimental method on a sample of (258) students from the second and fourth grades from four primary schools in the city of Rica. In Croatia, the study used quantitative analysis of data (paintings drawn by the students of the study sample), and the results of the study indicated a positive impact of the interactive approach to learning and teaching according to the following variables: (Knowledge and understanding are terms of the visual arts, and abilities and skills in using artistic materials and techniques in A framework of tasks for planned teaching strategies, and creativity in solving problems in the visual arts. The study indicated that its results can help in developing an optimal and improved model for planning and implementing art education lessons and visual arts performance, and provide guidelines for planning the professional development of art education teachers, with the aim of reaching More efficient education and teaching, and teaching visual arts in primary schools. (Tomljenovic, 2015, 73-93)

Aspects of benefit from previous studies:

1. Formulating the problem, how to present and analyze it, and formulating the questions of the current study.

2. Learn how to choose the research population and determine the appropriate sample.
3. It gave indications about the nature of research tools suitable for the current research and how to verify their validity and stability.
4. Explaining the method of choosing the statistical methods necessary to present and analyze data, to produce research results.
5. Analyze, interpret and compare the results with the results of the current research.

Research methodology and procedures: -

First: Research methodology: The researcher adopted the descriptive and analytical approach to achieve the objectives of her research.

Second: The research population and sample: The current research population is defined by teaching professors in the departments of art education in the colleges of fine arts and applied arts, and the colleges of education and basic education in Iraq. Their number reached (88) male and female teachers (specializing in methods of teaching art education - philosophy of art education) and they use strategies Teaching art education to students in these departments. The researcher adopted all of them to apply her research procedures due to the small size of the research community, as shows in Table (1) :

Table (1) Research community

NO:	University_college_department	the number
1	Al-Mustansiriya University - Basic Education - Art Education	21
2	University of Baghdad - College of Fine Arts - Art Education	10
3	Diyala University - College of Fine Arts - Art Education	12
4	University of Babylon - College of Fine Arts - Art Education	17
5	Al-Qadisiyah University - College of Fine Arts - Art Education	1
6	Tikrit University _ College of Education for Humanities _ Art Education	2
7	Wasit University - College of Fine Arts - Art Education	5
8	University of Mosul - College of Fine Arts - Art Education	4
9	University of Maysan _ Faculty of Fine Arts _ Art Education	7
10	Central Technical University - Faculty of Applied Arts	4
11	University of Kufa - College of Co-educational Education - Department of Art Education	3
12	University of Basra - College of Fine Arts - Department of Art Education	2
the total		88

Third: Research variables: The research includes two types of variables, which were extracted from the title of the research, which are: -

- The independent variable: represented by (the creative dimension of Caius theory).
- Dependent variable: developing strategies for teaching art education.

Fourth: Research tools: For the purpose of achieving the research objectives, the researcher built a questionnaire to determine the relationship between the creative dimension of Caius theory and the development of strategies for teaching art education. The five-point Lickerd scale was adopted, which includes five numerical grades (5, 4, 3, 2, 1). The questionnaire is an important means of exposing the respondents to Selected stimuli, carefully arranged for the purpose of collecting data. (Van Dalen, 1984, 395). In building her tools, the researcher relied on the following steps:

- 1) Benefiting from literature, sources and previous studies that dealt with topics (Caius theory, general teaching strategies and strategies for teaching art education).
- 2) Intellectual and philosophical opinions related to the topics (Caius theory, strategies for teaching art education), which the researcher put forward in the theoretical framework of

her current research, and the indicators that resulted from it, formed the largest part of building the content of the research tools.

3) Preparing questionnaires that include an analysis of the strategies for teaching art education that were agreed upon by the teaching professors in the departments of art education, and which the researcher dealt with according to the sequence of their historical appearance, which was dealt with in the study of teaching strategies. The researcher distributed them to a number of experts and specialists to seek their opinions on constructing The criteria and their indicators, and the number of experts reached (14), and their opinions were unanimous on the paragraphs of the content analysis of the strategies, except for some observations, and the researcher committed to amending them based on the experts' observations so that the tool would become suitable for application.

4) Preparing a questionnaire that includes a list of the creative dimension of Caius theory and the axes of each creative dimension and its indicators. The researcher distributed it to a number of experts and specialists to seek their opinions about it. The number of experts reached (26) experts, and their opinions were unanimous except for some notes about some vocabulary, and the formulation of some The paragraphs, and the researcher committed to amending them based on the experts' observations so that the tool becomes suitable for application.

Fifth: The validity of the tool:

Apparent validity: For the purpose of verifying the validity of the tool, the researcher presented it to a group of (14) experts in methods of teaching art education and the philosophy of art education, Appendix (2), who judged the tool and expressed their observations and estimates about the validity of the questionnaire's paragraphs and their representation. For the content of (Chaos Theory, Strategies for Teaching Art Education), agreement was reached on the validity of the tool for application at a rate of more than (85%), with the exception of some observations, regarding the wording of some paragraphs, and the researcher committed to modifying them based on the observations of specialized experts so that the tool becomes valid for application.

Discriminant validity: (terminal comparison validity) and statistical analysis of the items

In order to extract the discrimination coefficient of the questionnaire items, the researcher did the following: -

1. Arranging the scores obtained by the respondents from the highest score to the lowest score.
2. A percentage of (50%) was chosen for the highest and lowest grades, to represent the two extreme groups. The number of responding teachers in the two groups was (50), with (25) teaching staff in each group.
3. Calculate the arithmetic mean and standard deviation for each group and extract the value of the t.test and the significance of the differences between the two groups (higher and lower), as shown in Table (2):

Table (2) shows the discriminatory power of the questionnaire items

strategy	group	sample	SMA	standard deviation	t- Calculated	Degree of freedom	Sig. (0.05)	indication
Brainstorming	Supreme	25	1225.16	31.134	10.005	48	0.000	Statistically significant
	Lower	25	1125.60	38.813				
Discussion	Supreme	25	1408.92	33.743	10.769	48	0.000	Statistically significant
	Lower	25	1328.12	16.394				

The table above shows the results of distinguishing the items and the validity of the peripheral comparison of the questionnaire. Since the significance level is (0.000), which is smaller than (0.05), the scale is statistically significant, and therefore the questionnaire is valid.

Sixth: Reliability of the tools: The researcher used the Cronbach's reliability coefficient, and when applying the reliability coefficient, it was found that the reliability coefficient of the responses to the questionnaire on the degree of conformity of strategies according to the size of the effect of the creative dimension of the Caius theory is (0.656), noting that the sample size is (10) an exploratory sample.

Seventh: Final application of the tool: After the research community was identified, sampled, and the validity and reliability of the tools were ensured, the tools became ready for application, after containing two main parts, which are:

1- Questionnaire instructions: which included a definition of the variables, and information about the responding teacher.

2 - The tool's axes: - The creative dimension of Caius theory: - It includes (4) axes containing (13) standards distributed among the paragraphs of strategies for teaching art education, based on a questionnaire for each teaching strategy to find the degree of conformity with the standards of the creative dimension of Caius theory.

Eighth: Statistical methods: - The researcher used statistical methods, including (the Cronbach equation, t.test for two independent samples, the equation of the arithmetic mean and the standard deviation, the Pearson correlation coefficient).

Research results: -

First: Presentation of the results: The following is a presentation of the results according to the research question as follows:

(Is there a statistically significant correlation between the creative dimension of Caius theory and the development of strategies for teaching art education?)

To answer this question, correlation values were extracted using the Pearson correlation coefficient between each axis in the creative dimension of Caius theory and each strategy for teaching art education, as shown in the tables below:

1: Correlation coefficient results:

Table (3) the correlation coefficient of the criteria of the creative dimension of Caius theory with the discussion strategy

Standard	Pearson correlation coefficient	Significance level	indication
Axis 1 Standard 1	0.658**	0.000	Statistically significant
Axis 1 Standard 2	0.444**	0.001	Statistically significant
Axis 1 Standard 3	0.786**	0.000	Statistically significant
Axis 1 Standard 4	-0.311*	0.028	Not statistically significant
Axis 2 Standard 1	0.813**	0.000	Statistically significant
Axis 2 Standard 2	0.037	0.800	Not statistically significant
Axis 2 Standard 3	0.762**	0.000	Statistically significant
Axis 2 Standard 4	-0.415**	0.003	Statistically significant
Axis 2 Standard 5	0.659**	0.000	Statistically significant
Axis 3 Standard 1	0.228	0.111	Not statistically significant
Axis 3 Standard 2	0.484**	0.000	Statistically significant
Axis 4 Standard 1	0.574**	0.000	Statistically significant
Axis 4 Standard 2	0.510**	0.000	Statistically significant

In Table (3) shows a test of the correlation between the discussion strategy and the axes and standards of the creative dimension of the Caius Theory. It is clear from it that there is a moderately strong correlation at the level of significance (0.000) in the axis of the first creative dimension in the fourth criterion, as the result of the correlation appeared at the level of (0.028). In the third axis in the first criterion, it was (0.111), which is a moderately strong correlation, while a weak correlation appeared in the second axis in the

second criterion, as the correlation result appeared (0.800). As for the remaining axes, the correlation was strong, and this is acceptable for acknowledging the existence of a relationship. Significant between the two variables.

Table (4) the correlation coefficient of the criteria of the creative dimension of Caius theory with the brainstorming strategy.

Standard	Pearson correlation coefficient	Significance level	indication
Axis 1 Standard 1	0.919**	0.000	Statistically significant
Axis 1 Standard 2	0.862**	0.000	Statistically significant
Axis 1 Standard 3	0.978**	0.000	Statistically significant
Axis 1 Standard 4	0.912**	0.000	Statistically significant
Axis 2 Standard 1	0.921**	0.000	Statistically significant
Axis 2 Standard 2	0.894**	0.000	Statistically significant
Axis 2 Standard 3	0.903**	0.000	Statistically significant
Axis 2 Standard 4	0.906**	0.000	Statistically significant
Axis 2 Standard 5	0.835**	0.000	Statistically significant
Axis 3 Standard 1	0.965**	0.000	Statistically significant
Axis 3 Standard 2	0.971**	0.000	Statistically significant
Axis 4 Standard 1	0.887**	0.000	Statistically significant
Axis 4 Standard 2	0.835**	0.000	Statistically significant

In Table (4) shows a test of the correlation between the brainstorming strategy and the axes and criteria of the creative dimension of the Caius Theory. It shows that there is a strong and statistically significant correlation at the significance level (0.000), and this is acceptable for acknowledging the existence of a positive moral relationship between the two variables, which indicates The standards are fully available in the strategy.

2: Results of the impact test (linear regression):

Table (5) for a linear regression test of quality culture standards in the discussion strategy

Standard	value of the coefficient β	Standard	value of the coefficient β
Fixed limit coefficient	38.136	Standard 13	5.259
Standard 1	4.946	Standard 14	6.611
Standard 2	5.748	Standard 15	5.479
Standard 3	5.809	Standard 16	5.569
Standard 4	4.782	Standard 17	5.711
Standard 5	3.758	Standard 18	4.997
Standard 6	5.862	Standard 19	4.451
Standard 7	5.631	Standard 20	4.506
Standard 8	4.495	Standard 21	4.268
Standard 9	3.800	Standard 22	6.200
Standard 10	4.847	Standard 23	5.070
Standard 11	4.490	Standard 24	4.903
Standard 12	3.276	Standard 25	4.651

in Table (5) of the values of the β coefficient estimates (linear regression) that all values were positive in the independent variable (quality culture), and therefore they had a positive impact on the dependent variable (discussion strategy), and the values of the β coefficients are fixed for the (25) criteria. Mentioned in the table above in the linear regression model in its final form for the (discussion) strategy relative to the standards of quality culture in education.

Table (6) Results of the linear regression test to verify the effect of Caius on the brainstorming strategy

Standard	value of the coefficient β
Fixed limit coefficient	2194.893
Axis 1 Standard 1	-1.009
Axis 1 Standard 2	3.609
Axis 1 Standard 3	0.417
Axis 1 Standard 4	-2.622
Axis 2 Standard 1	5.000
Axis 2 Standard 2	1.920
Axis 2 Standard 3	0.448
Axis 2 Standard 4	-0.675
Axis 2 Standard 5	-6.243
Axis 3 Standard 1	1.083
Axis 3 Standard 2	-0.796
Axis 4 Standard 1	1.019
Axis 4 Standard 2	-0.795

We notice in Table (6) of the estimated values of the β factor (linear regression) that most of the values were positive in the independent variable (Caius theory), and therefore their effect was positive on the dependent variable (brainstorming), except for the criterion factor (4, 5), as their effect was Negatively on the dependent variable, because the sign of the β coefficient was negative and amounted to (-0.196, -2.120), respectively, and the values of the β coefficients are fixed for the (13) criteria mentioned in the table above in the linear regression model in its final form for the (brainstorming) strategy relative to the criteria. The creative dimension of Caius.

Second: Conclusions:

- The creative dimension of Caius theory plays a major role in developing strategies for teaching art education, and this is what was shown by the results of the correlation test through the strength of the correlation between the two variables, which indicates the possibility of relying on it in deduction and measurement based on the significance of the correlations.
- The development of most strategies for teaching art education is in accordance with the projections of the creative dimension of Caius theory, and this is what was shown by the results of the impact test (linear regression), which indicates the possibility of relying on it in deduction and measurement based on the values of the positive β coefficient estimates, and these results are consistent with what was stated below. In the study of Al-Sayed Ali (2017) and the study of Tomljenovic (2015)

Third: Recommendations:

In light of the conclusions reached, the researcher recommends the following: -

- Taking into account the developments taking place in the world when designing and building teaching strategies to achieve their goals within the goals of the local and global environment.
- Searching for modern and modern scientific theories from various fields and specializations and the necessity of employing them in the educational field and investigating their implications for developing teaching strategies, which are the basic foundation for achieving the goals of education in society.
- The need to direct the attention of the educational system to the importance of studying the Caius theory and its cognitive, behavioral, intellectual and social dimensions, and to pay attention to the surrounding societal conditions. Random fluctuations and external and internal variables transform the system's institutions from a

state of stability (linearity) to instability (nonlinearity), and the transformation does not necessarily occur as a result of The occurrence of a normal circumstance or fluctuation. Rather, the transformation depends on the amount and pattern of disturbance and fluctuation, as well as the degree of sensitivity of the educational system to being affected by initial situations.

- Build teaching strategies in light of Caius theory that benefit from its ideas, reflect its principles and characteristics, and at the same time commit to applying the standards of quality culture in education.

Fourth: Proposals:

In continuation of the current research, the researcher proposes to conduct a study showing the effect of teaching based on Caius theory and its cognitive representations in developing innovative thinking among students of the Art Education Department.

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