Journal of Ecohumanism
2024
Volume: 3, No: 4, pp. 1838 – 1846
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v3i4.3721

The Impact of the Treffinger Model of Developmental Organization on the Production of Creative Ideas Among Female Students at the Institute of Fine Arts in the Subject of Design Techniques

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Abstract

Neglecting creative abilities causes societies to fall behind, emphasizing the need for modern societies to develop and flourish by adopting original ideas to solve problems. This study aimed to examine the effect of using the Treffinger model of developmental organization on the production of creative ideas among female students of the Art Institute in the field of design techniques, particularly in interior design. The model was applied through teaching plans designed according to the model and compared to traditional methods on a sample of female students to measure the impact. The research sample consisted of female students from the Institute of Fine Arts, carefully selected to ensure accurate representation of the study population. An experimental design with two equal groups was adopted to compare the effect before and after. The results showed noticeable differences in the creative performance of female students who studied according to the Treffinger model compared to the traditional method, highlighting the model's effectiveness in enhancing creative abilities. Accordingly, the researcher recommended adopting this model in the educational process in general and in fine arts institutes in particular, and suggested further applied studies to generalize the benefits of this model.

Keywords: *Treffinger Model, developmental organization, Creative Abilities, Positive Learning Environment.*

Introduction

Moreover, creativeness is a basic requirement for the renaissance in this age; the world was involved in a frantic race of creativeness. Picking up the attention towards creators develops human civilization through their attainments achieved in future science and new discoveries. On the other hand, ignoring creative capabilities makes the society backward. The all-rounded conception of education highlights the necessity of developing proper and original thinking techniques. As such, it needs an environment conducive to building creative ideas and solutions. According to Ghabayen, 2008, problem-solving skill is a basic need in human life since various and many problems are encountered daily.

In education, creativity is not manifested only in the new ideas but also in the development of the skills necessary for their implementation. It takes place through divergent thinking, which leads to investigating different possible solutions, and convergent thinking, which refines and possibly puts into practice the best ideas. In this respect, institutions of learning make a very important contribution to the development of such competencies. Such abilities need innovative teaching models to foster them among learners. It is not restricted to the arts, but rather covers critical thinking, adaptation, and changing the viewpoints regarding problems. That kind of holistic growth would set them up for careers and challenges in the future, the tools with which one would navigate and shape an increasingly complex world.

The past and present educational environments of today tend to focus more on rote learning and multiple-choice standardized testing that stifles creativity. The traditional methods of teaching may not adequately prepare students against the challenges in a rapidly changing world that is in need of innovation. Therefore, models encouraging creativity and problem-solving skills are urgently put into education curricula. This research is set to fill this gap by assessing the Treffinger model of developmental organization, designed to enhance learners' creativity. The Treffinger model emphasizes the identification of problems, the generation of ideas, and the implementation of solutions. Structured yet flexible, this framework can be applied to many different educational settings. This would give students a much more dynamic and engaging

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environment in which their learning can take place. It will promote intellectual growth and creative expression.

Research Importance

This research, therefore, underlines a pressing need for experimentation in and adoption of newer, far-reaching models of education that have the capacity to inspire students to embrace and exercise creative thinking. As such, the incorporation of such models within the educational system is of essence now more than ever before as we go about living in a time characterized by incredible technological and social changes. Such models do not only support educational development but also foster societal creativity through the equipping of students with the relevant skills. In education, creativity means much more than an artistic expression of feelings. It includes critical thinking, adaptability, problem-solving, and the ability to innovate—skills increasingly vital in the modern workforce.

The Treffinger model of developmental organization is one educational framework especially developed to enhance creative abilities among students. This model is a structured process, urging both divergent and convergent thinking, challenging students to come up with many solutions and critically look through the best. From this process, they will get an in-depth understanding of the problems and learn how to approach them in different perspectives—a kind of comprehensive thinking process relevant for the fostering of a creative mind, not only in an academic setup but even more so in real life.

Implementing the Treffinger model within educational institutions can realize very high improvements in creative thinking skills among students. These creative thinking skills relate to improved academic performance and, beyond that, to deeper senses of personal and professional development. As students learn to creatively make their way around complex problems, they are also better prepared and equipped with the kinds of challenges they will meet in a future workplace where innovation and adaptability are paramount. Moreover, creativity in education offers wider societal development. Educated persons able to solve many problems effectively provide society with new ideas and solutions to realize sustainable development.

This paper calls for a paradigm shift to more innovative educational teaching practices that put emphasis on creativity. Using models like the Treffinger model, educators could forge a livelier and more engaging atmosphere for students. This not only strengthens the intellectual growth of students but also provides the skills needed for their survival in a world where things are changing with each second. The role that education plays in fostering creativity and innovation is something that will be very significant as society continues to evolve, hence the need to embrace and implement these advanced educational models.

Objective of the Study

The main aim is to investigate the effects of using the Treffinger model of developmental organization on the production of creative ideas among female students at the Institute of Fine Arts with a specialization in design techniques. The research shall try to:

1. Estimate the influence of the use of the Treffinger model on the development of creative skills related to abilities regarding fluency, flexibility, and originality.

2. Compare the Treffinger model's efficiency in enhancing creativity with that of traditional ways of teaching.

3. Share some insights on how to integrate the Treffinger model into the process of teaching, allowing for the creation of a much more innovative environment for learning.

4. Provide specific strategies that are most contributory to the development of creative thinking in the Treffinger model.

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5. Suggest for educators and policymakers to show how studies that have creative problem-solving models are included in school curricula, resulting in student development in creative and critical thinking.

Through this study, we would like to further suggest that the Treffinger model not only improves the students' creative skills but also provides a strong vehicle the further enable creativity as a Curtis of education practice to bring about a richer and more dynamic educational environment.

Research Hypotheses

1. There are no statistically significant differences at the level (0.05) between the average scores of female students of the experimental group and the control group between the pre- and post-application of the creative abilities test in the subject of interior design techniques:

- No statistically significant differences in fluency ability.
- No statistically significant differences in flexibility ability.
- No statistically significant differences in originality.
- There are no statistically significant differences in the overall abilities of fluency, flexibility and originality.

2. There are no statistically significant differences at the level (0.05) between the average scores of students belonging to the experimental group in the pre- and post-application of the test for knowledge on interior design techniques.

3. There are no significant mean differences between the female students' average scores from the experimental group observed in the pre- and post-application of the creativity in design idea skills test in the Interior Design Techniques subject at a significance level of 0.05.

4. At a significance level of 0.05, there are no statistically significant differences between the average ranks of the female students of the experimental group who studied according to the Treffinger model of developmental organization, in comparison with the average grades of female students of the control group who studied according to the usual method while applying the creative thinking test post-test.

Research Methodology

Experimental Design

The researcher adopted an experimental method suitable for the research objectives and hypotheses. The chosen experimental design was a pre-test and post-test control group design, which is particularly effective for measuring the impact of an intervention by comparing results before and after the treatment. This design involves two groups: an experimental group and a control group.

The experimental group was exposed to the independent variable, which in this case was the Treffinger model of developmental organization. The control group, on the other hand, continued with the traditional teaching methods. This approach allowed for a clear comparison of the effects of the Treffinger model on the production of creative ideas among the students.

Before the intervention, both groups were administered a pre-test to establish baseline data on their creative abilities. After the intervention, a post-test was conducted to measure any changes in creative thinking skills. The differences between the pre-test and post-test scores were then analyzed to determine the effectiveness of the Treffinger model.

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The following schematic illustrates the experimental design:

Pre-Test -> Experimental Group -> Intervention (Treffinger Model) -> Post-Test

| Control Group -> No Intervention (Traditional Method) -> Post-Test

Schematic of Experimental Design

Research Population and Sample

The research population consisted of students from the Mansour Institute of Fine Arts, which includes a total of 721 students enrolled in various departments. For this study, the primary focus was on third-year female students in the Interior Design Department for the academic year 2023-2024.

To ensure a representative sample, the researcher employed a simple random sampling technique. This method was chosen because it provides each student in the population an equal chance of being selected, thereby reducing selection bias and ensuring that the sample accurately reflects the larger population.

From the total population, a sample of 18 students was selected. These students were then randomly assigned to one of two groups: the experimental group or the control group. Each group consisted of 9 students. This small sample size was manageable and allowed for in-depth analysis and close monitoring of the intervention's effects.

Below are the steps involved in sampling

1. Definition of Population: Describe the population to consist of all female students in their third year of study in the Interior Design Department.

2. Determining the Sample Size: A sample size of 18 respondents was determined, considering feasibility and the necessity of detailed analysis

3. Random Allocation: Students are put either into the experimental or control group by random allocation through a random number generator.

Detailed Description of Experimental Procedures

Pre-Test Administration

A test was first administered to both groups in order to get the base record of their creative thinking abilities. The test had components estimating fluency, flexibility, and originality.

Intervention

- The treatment group received instruction via the model of developmental organization by Treffinger. This was a series of lessons and activities tailored to enhance creative thinking and problem solving.

- The stages of the Treffinger model, generating ideas, focusing on the most promising ideas and implementing creative solutions were infused into the curriculum for a period of time.

Control Group

- The control group, however, carried on with the usual curriculum, which did not include structured creative problem-solving techniques as outlined in the Treffinger model.

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Administration of Post-Test

- After this period of intervention, a test of creative thinking was administered to both groups as a post-test, thus allowing direct comparisons between groups, as well as within groups at pre-and post-test.

Data Analysis

The test and retest marks were taken, and statistical methods were used to analyze the effect of the Treffinger model on students' creative abilities in relation to changes in fluency, flexibility, and originality of ideas.

Statistical significance tests—the paired t-tests and Mann-Whitney U tests—were conducted in assessing the level of significance of the changes and differences observed between the classes under experimental and control conditions.

Data Collection Tools

Various instruments were applied to gather data in its wholeness. This included:

1. Creative Abilities Test: This is a fluency, flexibility and originality, standardized test

2. Checklists for Observation: The provided checks on the implementation of the Treffinger model and consistency in teaching practices

3. Student Feedback: Acquired through questionnaires to better understand the experiences and perceptions of the students about the method applied in teaching.

This research study has employed a robust experimental design, together with the correct data collection methods, to obtain valid evidence on the efficiency of the Treffinger model for developing creative thinking skills among female interior design students.

Illustration of Experimental Process

Sample of 18 Students

**/ **

Experimental Group Control Group

(9 Students) (9 Students)

| |

Pre-Test Pre-Test

| |

Intervention (Treffinger Model) Traditional Teaching

| |

Post-Test Post-Test

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Results

The findings revealed significant differences between the creative abilities of the experimental group and the control group, with the former holding the advantage. Fluency, flexibility, originality in creative thinking, and general creativity in design ideas and skills of the Treffinger model were significantly enhanced.

Table 1: Creative Abilities Test Results

Group	Pre-Test Mean	Post-Test Mean	Wilcoxon Value	Significance
Experimental	55.4	78.9	2.675	Significant
Control	53.7	54.2	5.000	Not Significant

Table 2: Creativity in Design Idea Skills Test Results

Group	Pre-Test Mean	Post-Test Mean	Wilcoxon Value	Significance
Experimental	50.1	76.3	2.670	Significant
Control	48.9	50.4	5.000	Not Significant

Table 3: Mann-Whitney U Test for Creative Abilities

Group	Mean Rank	Total Rank	Mann-Whitney U Value	Significance
Experimental	13.61	122.5	3.5	Significant
Control	5.39	48.5	17	Not Significant

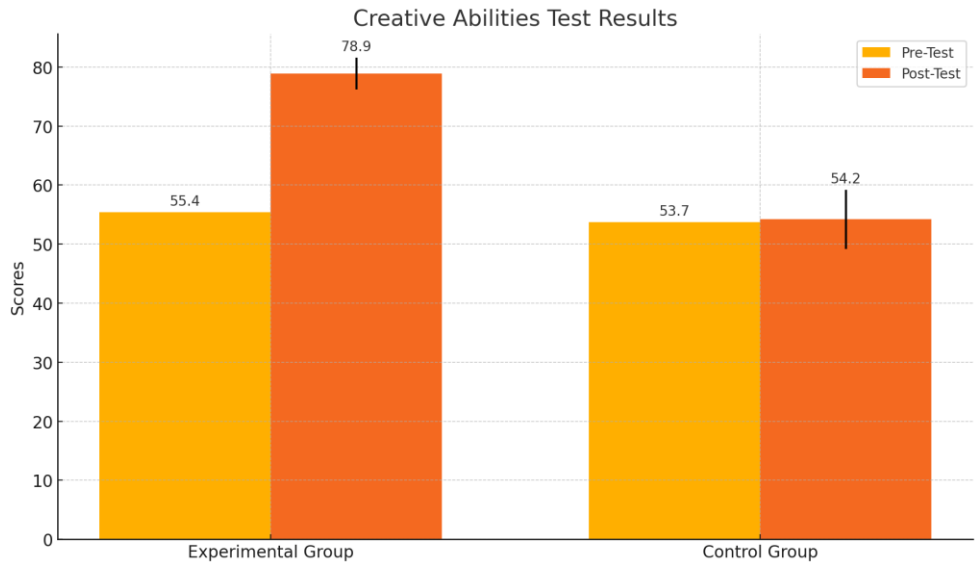

Figure 1: Creative Abilities Test Results

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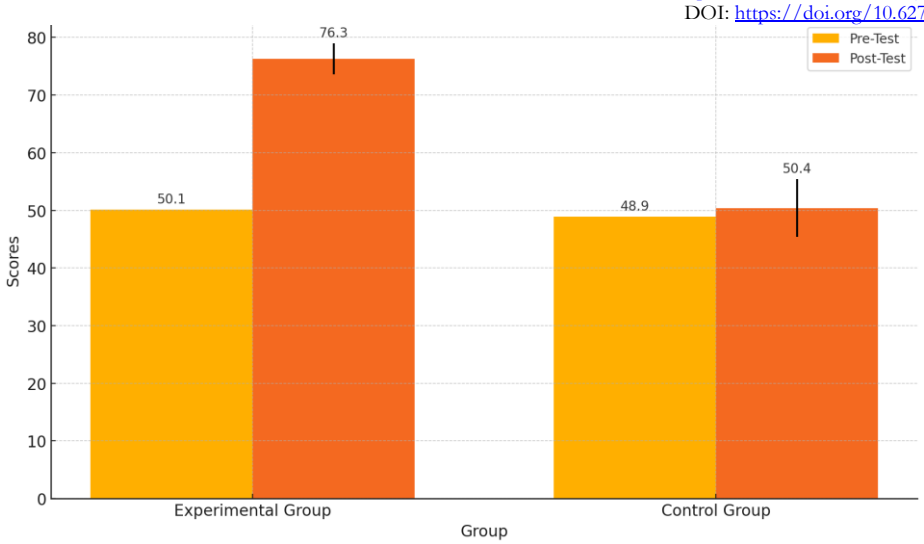

Figure 2: Creativity in Design Idea Skills Test Results

Discussion and Conclusions

These findings support the great effect of the Treffinger model of developmental organization in enhancing female students' creative abilities, as was the case in the Interior Design Department at the Institute of Fine Arts. The results show that the experimental group, whose teaching method used the Treffinger model, was superior to the control group, whose teaching methodology used traditional methods of teaching. This clearly proves that the Treffinger model is very effective in enhancing creative thinking and design skills among learners. The structured approach within the model, toward divergent and convergent thinking, creates an opportunity for students to fan out in exploring as many ideas as possible and then narrow them down to only relevant and workable solutions. This is very important in creative areas like interior design, where this type of innovativeness is balanced through a filter of functional and aesthetical considerations. Students in the experimental class showed a strong improvement in fluency, flexibility, and originality. Probably, it was because the Treffinger model is focused on brainstorming, refining ideas, and problem-solving activities. Students acquired many means for creative and effective thinking. One of the main advantages of the Treffinger model is that it provides structured support for students to examine a problem systematically, generate several solutions, and choose the best one. It is a model that encourages divergent and convergent thinking; students will generate a wide array of ideas and look critically at the evaluation and refinement of those ideas. Its interactive nature easily pulls students into active participation and engages them in group brainstorming sessions, creative problem-solving tasks, and reflective discussions. The model is also adaptive; hence, it can be applied to many diverse educational contexts and subjects to improve the enhancement of creative thinking and problem-solving among students.

The positive findings of this study reflect that including the Treffinger model in educational curricula would substantially enhance students' creative development. This would, therefore, be very relevant to every institution that would be interested in including the Treffinger model in the curriculum, particularly in those subjects in which the inclusion of creative thinking and problem-solving skills among students would arise so as to allow students to have a more structured approach toward creativity and hence improve their overall academic performance. An effective implementation of the Treffinger model calls for appropriate training of the teachers through professional development activities targeted at familiarizing them with ideas and practical strategies to help them integrate the model in their teaching. Because traditional assessment tools do not adequately capture creative abilities, there is a dire need for developing assessment tools which evaluate creativity based on fluency, flexibility, and originality, so that the educator may get clear insight into student progress and areas that need further improvement. One of the most important conditions of creativity is to provide a helpful and stimulating classroom environment; an educator should allow for openness in communication and the possibility of collaborative work while ensuring safety in trying out new ideas without the threat of failure.

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While this research effort adds significantly to the literature by elaborating on the effects of the Treffinger creative learning model, more studies are needed to address its generalizability and long-term effects. Longitudinal studies on the effects of the Treffinger model on creative development may receive a boost from the long-term impact occasioned by its usage. Research into the Treffinger model needs to be conducted across a wide range of educational settings and populations, not just in the student population by age groups but also according to different cultural backgrounds and academic disciplines with a view to determining its adaptability and generalizability. Comparison studies on the Treffinger model with other models of creative problem-solving and instruction would further clarify which interventions are most effective in enhancing creativity. Research into which aspects of the Treffinger model, such as techniques of brainstorming or idea refinement stages, are most influential, could also be done to see what elements are most proficient in creative development. Conclusively, all the results obtained from the study prove that the efficiency of the Treffinger model of developmental organization is somewhat efficient for developing the creativity of students. The Treffinger model provides a structured, yet flexible process for creative problem-solving in students to generate, refine, and implement original ideas. This is demonstrated to be of very great value in educational practice by the fact that it shows significant improvement in creative thinking and design skills among the experimental group.

Key Findings

- **Enhanced Creativity**: The Treffinger model significantly improved the creative abilities of the experimental group in terms of fluency, flexibility, and originality.
- **Effective Teaching Strategy**: The structured approach of the Treffinger model provided a clear framework for students to develop creative solutions, enhancing their overall creative performance.
- **Positive Learning Environment**: The model fostered a positive learning environment, encouraging students to engage deeply with the subject matter and think creatively.

Recommendations

- Adopt the Treffinger model of developmental organization in general education and fine arts institutes.
- Integrate specific topics and skills related to interior design to produce and practice creative ideas.
- Conduct training courses for teachers on utilizing design techniques and producing creative ideas.
- Use modern technologies to enhance educational tools and student motivation.

Suggestions for Further Research

- Measure the effect of an educational program based on the Treffinger model in developing design thinking.
- Study the effectiveness of the Treffinger model in developing imagination and mental representation of creative ideas.
- Employ the Treffinger model to provide skills for using design techniques in artistic work production.
- Conduct comparative studies between different versions of the Treffinger model in various technical subject

Funding: This research received no external funding.

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Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data are available upon request.

Conflicts of Interest: The authors declare no conflict of interest.

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