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Enhancing Problem-Solving Skills through Creative Writing Activities in Greek Primary Schools: A Survey-Based Study

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Abstract: ***This study explores whether creative writing activities can enhance problem-solving skills in primary school students in Greece. Conducted during the 2023–2024 academic year, the survey involved 1020 students and 71 teachers. The 1020 students were divided into two groups: an intervention group engaging in creative writing and a control group following the standard curriculum. Over four months, participants were assessed using structured questionnaires. The findings indicate that students exposed to creative writing exercises showed a notable improvement in problem-solving abilities, as rated by their teachers. These results suggest that integrating creative writing into classroom practices may foster critical and analytical thinking skills in young learners.***

Keywords: creative writing, problem-solving skills, primary education, cognitive development, teaching methods

1. Introduction

Problem solving is a skill through which the student develops critical, analytical and creative thinking.[1] The problem solver must understand a problem well, devise a solution plan, execute it and review any results.[2]

This paper attempts to highlight creative writing as a tool to enhance this skill, given that creativity is linked to problem solving.[3] After all, creative writing gives the student the opportunity to respond to a problematic situation, which he or she will be able to solve using real information and his or her own interpretations.[4] This study is significant as it explores innovative methods to foster essential cognitive skills in primary school students, contributing to evidence-based educational reform

2. Objectives

The aim of this study is to investigate whether creative writing activities can enhance problem-solving skills. The specific objectives are as follows:

- Whether students, when faced with a problem, easily find ways to solve it.
- Whether students, when faced with a problem, take into account the opinions of others to find a better solution to it.

3. Methodology

Research design

The survey involved 1020 students and 71 teachers who initially completed a structured, self-administered, closed-ended questionnaire, called the “Soft skills assessment questionnaire”, which included 2 questions related to problem-solving skills. Relevant literature was reviewed to create these questions.[5a,5b]

Responses were given via a five-point Likert-type scale (never, rarely, sometimes, often, always) and teachers completed one for each of their students. Of the 1020 students, 679 took part in the creative writing activities, while 341 followed the school curriculum. One tool used to evaluate the effectiveness of the creative writing activities was the “Teacher Satisfaction Form”, which consisted of 13 closed-ended questions, one of which was related to problem-solving skills. The answers were given through a four-point Likert-type scale (not at all, a little, enough, very). This questionnaire was completed only by the 44 teachers who implemented the creative writing activities with their students.

Reliability

The “test-retest” procedure was carried out to assess the reliability of the questionnaire in terms of the consistency of responses over time. The questionnaire was administered to 30 students, 30 parents and 30 teachers. This procedure was carried out twice, at the beginning and at the end. The reliability of each item was measured by calculating the Agreement Coefficient AC2.[6]

Obtaining permission

A request was submitted to the Regional Directorate of Primary and Secondary Education of Central Macedonia to conduct the research. In addition, a statement was issued by the Internal Ethics Committee of the Department of Pre-school Education of the University of Thessaly regarding the necessary pedagogical and scientific criteria to be met by this research.

4. Results

Teachers' ratings of students' problem-solving skills are presented in the table below in the form of means and standard deviations for each assessment (before and after creative writing activities) and for each group of students (intervention and control).

Group			
Skill	Assessment	Intervention	Control
		Average/ Standard deviation	Average/ Standard deviation
Problem solving	Initial	3.42/0.74	3.47/0.82
	Final	3.63/0.78	3.51/0.85

It is observed that teachers' post-intervention grades were higher for students in the intervention group compared to students in the control group.

It should be clarified that the teachers' ratings for the students after the intervention were compared between the two groups using ANCOVA. These comparisons are made after controlling for (removing) the effect of the pre-intervention assessment on the post-intervention assessment (as would be done, that is, if all students had the same pre-intervention assessment).

The following table presents the results of ANCOVA and adjusted means for the post-intervention assessment scores obtained after controlling for (removing) the effect of the pre-intervention assessment on the post-intervention assessment.

					Group	
Skills	Intervention		Control		F(1.1017)	p
Problem solving		Standard error	Average	Standard error		
	3.65	0.02	3.49	0.03	16.10	<0.01

According to the adjusted means, teachers have assessed the problem-solving skill of students in the intervention group with a higher degree than the corresponding skill of students in the control group ($p<0.001$).

The table below shows the level of teachers' satisfaction with the improvement of students' problem-solving skills, as reflected by the analysis and processing of the responses to the questionnaire “Teacher Satisfaction Form”.

Skill	At all	A little	Enough	Very	Total	Total (Enough-Very)
Problem solving	0.0	31.8	43.2	25.0	100	68.2

Among the 44 participating teachers, 68.2% reported notable improvement in students' problem-solving skills.

5. Findings and Discussion

The results of the study showed that creative writing activities can enhance problem-solving skills, which can be confirmed by other similar studies. Thus, in a study conducted in 1977, it was shown that the function of writing can help students become aware of the process they use to solve problems.[7] Another study conducted in 2015[8] showed that creative writing develops critical thinking as students exchange ideas with each other, engage in problem solving, analyse their own and others' texts in order to determine the author's choices and to make their text more effective in achieving its purpose.

To the above should be added some difficulties encountered during the conduct of this research. Thus, some of them included the non-randomized assignment of students to the two groups, the long duration of each workshop (approximately 3-4 hours), the dual role of the teachers who implemented the creative writing exercises as observers and evaluators and the lack of repetition of the evaluation (follow-up) in order to investigate the sustainability of the results.

In summary, the study provides strong evidence that creative writing activities positively influence students’ problem-solving abilities. Teachers observed improved analytical and critical thinking in students engaged in such exercises, reinforcing the integration of creative expression within educational settings. Despite limitations such as non-randomized grouping and lack of long-term follow-up, the findings support the use of creative writing as a viable pedagogical tool.

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