

The Development of Creative Thinking as a Tool of Social Adaptation of Teenagers with Behaviour Deviation

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Abstract: The purpose of this study was to examine whether the activities aimed at developing creative thinking had rendered the social adaptation of adolescents with deviant behaviour smooth and evaluate the changes which had resulted from that engagement. The research data were collected through the use of project checklists, student learning outcomes analysis, interviews with teachers and parents, questionnaires. This study used SPSS and SmartPLS statistical analysis tools to analyze the above data and *Textalyser* application to process the focus group responses. The study found that the participation of the secondary school students with behaviour deviation in legacy projects make their social adaptation easier, improves their social skills and creative thinking style. This study confirms that there is a positive relationship between socially important creative activities, learning motivation and development of creative thinking styles. It has been found that, despite the considerable amount of research regarding the use of creative activity to develop social adaptation skills in adolescents, the problem of social adaptation of adolescents with behaviour deviation has not been sufficiently explored through engaging them in activities aimed at developing creative thinking. The process of social adaptation of adolescents with behaviour deviation is complex and the creative component is in place there, since it supplies the educational process with irreplaceable pedagogical tools that have the potential to "restart" the student's physiological and psycho-motivational spheres.

Keywords: Secondary school, teenagers with behaviour deviation, social adaptation, creative thinking, creative activity.

INTRODUCTION

Individuals' creativity has been the key idea for innovative educational concepts [1], an individual's recourse for flexibility and adaptability in politically and economically unstable environment [2] and a goal (or rather a challenge) to pedagogical science in terms of adopting or creating innovative pedagogical technologies to be capable to adjust to meet and handle with the constant change. Adaptation (social adaptation) seems an issue for adolescents with behaviour deviation which is associated with an increase in illegal activities, ignoring existing public requirements and rules for school youth, with tendencies in alcohol and drug use, sexual abuse, homicide and suicide.

Various innovative pedagogical methods and technologies for innovative teaching and learning are

being developed to tackle those issues. They are focused on the realization of the task of values formation in students aimed at healthy lifestyle, spiritual (self) development and (self) strengthening of their moral bases.

Dynamic interaction between a person and the environment is one of the most important aspects of creativity [3-5]. However, compared to the processes and structure of a person's creative activity and the products of such activity, the socio-adaptive context of creativity and, in particular, adolescents with behaviour deviation has not been studied to a sufficient degree.

Creativity and Adaptability in Perspectives

Creativity or creative thinking implies different contexts and in educational settings, it can be used to address teenage students' academic achievement or academic ability, on the other hand, is relatively more easily defined, measured and interpreted [6].

According to [7], creative thinking is a synergy of cognition and personality traits allowing the person to

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apply their intellectual abilities and knowledge to resolve the problem using an imaginative and experimental approach. Based on bi-polar concepts such as 'right vs. left-brain' thinking or 'rational vs. intuitive' thinking, there are attempts to distinguish the main types of creative thinking. One of them specifies five key thinking styles such as divergent (exaggeration), lateral (out-of-the-box), aesthetic (beauty and taste), system-based (synthesis towards the whole) and inspirational (emergent, radical insight) [8].

There is some scepticism (stereotypy) regarding the adolescents' creative potential, as they believe that teenagers (children) are unlikely to be able to create something truly new or valuable [9], but they do recognize the adaptive value of creativity [3-5, 10].

In the dictionaries [11, 12] the term *adaptation* pertains to the *adjustment (of one's behaviour to the rules, requirements or principles) or/and modification (oneself or something) to fit a particular situation or circumstance*. According to the definitions, adaptation a two-way process which is based on the adjustment and personal reactions of the individual, which are the result of the impact of social and socio-economic relations on the one hand, and the result of his/her psychological struggle with stress, life challenges and turmoil, on the other hand. Unlike adults, it is much more difficult for children (teenagers) to encourage an environment (surroundings) to implement their ideas and performance, and especially if the behaviour of such children goes beyond the understanding of the acceptable from the standpoint of the adult population, and they are viewed as deviant adolescents.

The Understanding of Deviance

In scientific-pedagogical sources, behaviour deviation in adolescents as a concept is interpreted from a socio-psychological perspective and refers to deviations that are not caused by neuropsychiatric diseases, from certain socially recognized norms of actions, activities, utterances in the community [13]. For example, according to the classification of behaviour deviation in [14, 16, 17], there are two types: *general* (aggressiveness, rudeness, falsehood, low level of self-control, inadequate self-esteem, feelings of anxiety, insufficiency of ways to respond to stressful situations, freedom of values and independence without awareness of the duties, low level of socialization) and *specific* (personality accentuation, selfish, aggressive, infantile motives of behaviour, risk

aversion, emotional instability, impetuousness, suspicion, inertia). In [10] author distinguishes such characteristics of behaviour deviation as: psychological unreadiness to study at school, inability (sometimes unwillingness) to contact with others, inadequacy of emotional manifestations, accentuation of character, tendency to play "against the rules", impede successful socialization in learning, achieve successful socialization, common grounds with peers and adults, deform the system of student's personal attitudes. Researcher in [15] focuses on the indicators of the personal level of deviance in adolescents (lack of independence, inadequate self-esteem and ambition level, lack of outlook formation, moral standards and ideals, negativism, aggressiveness, lack of specific life goals, high performance level, high communication level, overcoming selfish tendencies, deformed understanding of justice, excessive criticism, rejection of adult positions and demands, lack of authority consideration, inadequate orientation to status and role in the group, pronounced demonstrative behaviour).

To sum up, the essence of behaviour deviation in adolescents is manifested in a system of actions that reject or violate local generally recognized legal, cultural, customary, evaluative moral norms.

The Relation between Creativity and Adaptability of Deviant Adolescents

Specialists in criminology and psychology of personality development claim that deviant and creative personalities (adolescents and adults) demonstrate common behavioural traits [18-20]. In [21], the impulsiveness of the latter may serve as a defensive reaction against stress caused by certain negative impacts and perceived by others as deviations, and their "play-acting in public" is a way to achieve their goal unconventionally [22]. Therefore, creativity and deviance can be interpreted as a problem-solving strategy whose purpose is to "solve" a particular problem using a "creative approach".

So, on the one hand, such creative behaviour of teenagers at school and in their peers' environment can be regarded as deviant, which often leads to "hanging labels of prosperity" on the creative teenager, and on the other, a properly directed educational work – the study of children individuality, relevantly selected methods of education, motivation and mechanisms of the teacher's influence on the teenager, cooperation in the relations of the teacher and the teenage student, the meaningful development of creative abilities

(thinking) of the latter, through engaging in activities that encourage a positive behaviour, can all become effective tools for social adaptation of adolescents with behaviour deviation.

Thus, the *purpose* of this study was to examine whether the activities aimed at developing creative thinking had rendered the social adaptation of adolescents with deviant behaviour smooth and evaluate the changes which had resulted from that engagement.

RESEARCH METHODOLOGY

The experimental phase lasted for the first semester of the 2018-2019 academic year. This study is based on a complex of general *theoretical, empirical and statistical* methods. The theoretical methods included literature review, the diagnostic (empirical) methods involved the test of "Diagnosis of creative potential and creativity" [23]; self-assessment of emotional state by A. Wesman and D. Ricks [24]; methodology and scale for determining the adaptation potential of V. P. Kaznacheev and R. M. Baiev [25]; diagnostic methods of intelligence types (Ukrainian version by G. Gardner) [26] (Appendix 2), the analysis of students' educational performance of the category understudy, analysis of the school psychologist's reports regarding such students, questionnaires for receiving feedback from students. The statistical methods were used to process quantitative and qualitative data of experimental work followed by its graphical and analytical interpretation, the establishment of statistical significance of the study findings. SPSS and SmartPLS statistical analysis tools and the *Textalyser* application [27] were used to process the students' responses to the open-ended questionnaire.

Population Sampling

The subjects of this study were students of 8-10 grades of Kiev Business Lyceum, Specialized School for Advanced Study of English № 82 named after T.G. Shevchenko, Kyiv Gymnasium No. 154 and Specialized School No. 118 "Universe". The total number of students involved in the empirical part of the experiment was 344. The specified number of students was further reduced by 139 due to the application of the exclusion criterion, namely: age, recommendation of a school psychologist (in the case of defining a child as deviant), intelligence type, and the results of the above tests to determine the creativity level and adaptability of the student, and amounted to 205 participants.

The sample size was calculated using an online sample size calculator. The number of 53 participants was obtained (given that n (number of the participants) = 205, confidence interval = 2.34, and e = 0.05 if confidence level = 95%) and employed to form the experimental (EG) and control (CG) groups for this study. The control group (CG) involved of 26 participants (12 girls aged 14-16 years and 14 boys aged 14-16 years) to have been split into 2 project groups of 13 people in each and, respectively, the experimental group (EG) comprised 27 students (11 people - girls aged 14-16 years and 16 boys aged 14-16 years) with 2 project groups of 13 and 14 participants each.

Inclusion Criteria

Age, the observation data provided by the school psychologist (in the case of defining a child as deviant), the intelligence type, and the results of the above tests to determine the level of creativity and adaptability of the student were applied as inclusion criteria.

The determination of the homogeneity of the groups was based on the average values of the above diagnostic tests, used as parameters: **Parameter 1:** Diagnosis of creative potential and creativity, **Parameter 2:** Methods of "Self-assessment of emotional state", **Parameter 3:** Methodology and scale of determination of adaptive potential, **Parameter 4:** Analysis of educational performance of students in the studied category, **Parameter 5:** Analysis of observation reports of a school psychologist regarding students with deviance (see Table 1), distributed by levels of manifestation: high (H), average (M) and low (L). **Parameter 6:** The Multiple Intelligence Test to determine whether the students of both groups have (approximately) the same intelligence so that groups are considered homogeneous (see Table 2): verbal-linguistic (VL), logical-mathematical (LM), visual-spatial (VS), musical (M), body-kinaesthetic (BK), intrapersonal (I), interpersonal (IP), and naturalistic (N).

Table 1 shows that the participants from both groups have approximately the same creative potential, a slight difference in adaptive potential and deviance (which can currently be considered as a feature of a creative personality), which means that groups can participate in the experimental process because there are no statistically significant inconsistencies. In Table 2, it can be observed that the percentage of students with creative types of intelligence is also identical, making it possible to consider the sample as homogeneous.

Table 1: The Results of Determining the Homogeneity of the Groups Based on Average Values of Diagnostic Tests Conducted in both Groups and Subdivided by the Levels of Manifestation: High, Medium and Low, %

Group	n	Parameters														
		1			2			3			4			5		
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
CG	26	8	67	25	5	47	48	15	44	41	3	43	54	0	16	84
EG	27	7	64	29	3	35	62	9	33	58	1	26	73	4	56	40

Table 2: Parameter 6, Student Results by Type of Intelligence, %

Group	n	Types of intelligence							
		VL	LM	VS	M	BK	I	IP	N
CG	26	7	10	14	9	12	17	15	16
EG	27	5	5	22	6	17	12	9	24

Procedure

The core of this study was to engage the adolescents of both groups in the activities aimed at developing creative thinking. Those were decided to be legacy projects as they are both a creative type and aimed at creating social value. Before the experiment, the workshops were held with the participants of the control and experimental group to master the opportunities of Blog TV, Livestream, YouTube, Facebook, Twitter, Google Analytics, YouTube (Vimeo), Google Internet products, students' video screening opportunities, etc. Additionally, the students were provided with the guidelines on project design.

We are to visualize an experimental model of developing creative thinking in adolescents with behaviour deviation for their social adaptation (see Figure 1).

The projects were then voted for their social value through the closed vote of students, parents, social media subscribers and school teachers.

To sum up the results, there were carried out re-analysis of reports of school psychologists and educators, development of students' motivation and reflexion components of students' performance of control and experimental groups, doing the test "Diagnosis of creative potential and creativity", implementing the methods to determine the adaptation and receiving feedback from the students and teachers (focus group) on their impressions of participating in the project.

Data Collection Tools

Several quantitative research tools were used to collect the data, including: observation reports, project check and evaluation sheets, student learning

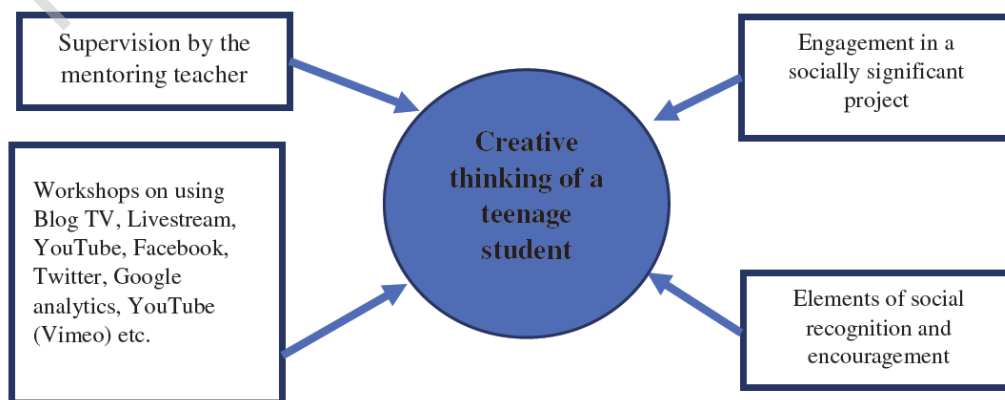


Figure 1: An experimental model for the development of creative thinking of adolescents with behaviour deviation aimed at their social adaptation.

outcomes, student visit data, teacher and parent interviews, questionnaires to identify how the students themselves perceive the practice of implementing such projects, and what factors have a decisive influence on their positive or negative perception of the activity.

The below questionnaire comprising 5 questions was used to increase the validity of the results of the survey of students about their impressions. The response analysis made use of SPSS and SmartPLS statistical analysis tools and the *Textalyser* application. The focus group consisted of 4 teachers (one project mentoring teacher from each school) and 8 students (2 students from each school).

- 1) Describe the essence of the project.
- 2) What exactly did you do in this project?
- 3) What is the benefit of participating in this project for you personally?
- 4) What problems did you face while participating in the project?
- 5) What do you suggest doing to address the problems you encountered?

The Chi-Square statistical method was applied to analyze the quantitative data, which were summarized, converted into percentage data and calculated. Besides, a comparison strategy was used [28], triangulation of data sources [28-30], as well as a method of validation of the study [29].

The Textalyzer online tool was used to address the responses of teachers and students to the open-ended questions, and the most commonly used positive words in the answers that helped us identify broad categories of answers were such as: "benefit", "parental feedback", "improvement", "the desire to learn", "friends", "grades". The analysis was conducted taking into account the objectives of the study.

RESULTS

The experiment was conducted as an extra-class activity, within the framework of educational work of the four secondary educational institutions. The experiment resulted in four creative projects, namely: "Antidote" – a workshop program for everyone to turn plastic waste into useful stuff; «Чисто-Tube» (Pure-Tube) - an informational video campaign on how to make the school and city clean; "Мені 45 45" (I am 45 45) – a "parenting school" for parents with a teenage teacher; and "Upgrade" – a program of training and assistance for third-age people. Besides, the activity of students with behaviour deviation in activities related to creativity, better attendance of students, dynamics in their educational performance, a positive attitude to productive and trustworthy cooperation with teachers, parents and peers has increased.

The table below (see Table 3) shows the average values of diagnostic tests carried out in both groups after the completion of the experiment, which were used as variable parameters: Parameter 1: Diagnosis of creativity and creativity, Parameter 2: Technique "Self-esteem of emotional state", Parameter 3: Technique and scale of determining the adaptive potential, Parameter 4: Analysis of the students' educational performance of the category understudy, Parameter 5: Analysis of the data of reports of a school psychologist regarding students with deviance (see Table 1), broken down by manifestation levels: high (B), medium (C), and low (H).

The table shows that the values (mean scores) of the parameters before and after the experiment for both groups increased. However, in the experimental group, the dynamics was higher in all indicators than in the control group, which enables us to state the effectiveness of this model for addressing the problem of social adaptation of adolescents with behaviour deviation.

The calculated values for students' participation in workshops, psychologist's reports, results of diagnostic

Table 3: Average Values of Diagnostic Tests Performed after the Completion of the Experiment in EG and CG and Distributed by Manifestation Levels: High, Medium and Low, %

Group	n	Parameter														
		1			2			3			4			5		
		H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
CG	26	9	69	14	6	48	46	15	44	41	3	47	50	0	14	84
EG	27	12	73	15	8	47	45	13	48	39	3	46	51	1	37	62

Table 4: The Factors Distribution by Weight in the Implementation of the Model

No.	Factor	Responses	Yes	TSE	No	Total	χ^2
1.	Participation of students in workshops	Mentoring teacher	31	03	04	34	41.69*
		Psychologist	24	04	00	28	38.79*
2.	Results of diagnostic tests and techniques	Mentoring teacher	32	02	02	34	54.85*
		Psychologist	28	01	01	30	51.89*
3.	Number of students attending project-related activities	Mentoring teacher	32	05	02	39	42.00*
		Psychologist	25	02	06	33	36.60*
4.	Psychologist's reports	Mentoring teacher	17	09	00	27	32.46*
		Psychologist	27	02	01	30	33.09*
5.	Mentoring teacher's reports	Mentoring teacher	30	09	0	39	36.46*
		Psychologist	14	02	04	20	12.40*
6.	Parents' survey	Mentoring teacher	19	02	00	21	30.19*
		Parents	36	02	00	39	67.60*
7.	Results of the feedback survey	Psychologist	30	08	01	39	35.23*
		Mentoring teacher	25	03	02	30	28.69*

*Significant components = 2; p = 0.05; Table value = 7.889.

tests and techniques, the number of students present at project-related activities using *Chi-Square* statistical method is greater than the value of the table by 0.05, which indicates the weight of these components in the implementation of the research task (see Table 4).

As can be seen from the table, the highest scores correspond to the parents' questions, while the figures for teachers and psychologists are lower, though significant and exemplary.

Focus Group of Teacher's Response

- 1) *Describe the essence of the project.* All respondents worked as a team to create a socially significant project according to the instructions.
- 2) *What exactly did you do in this project?* Proposed ideas (5 people), identified the needs

of students (12 people); solved the terms of reference (6 people); cooperated (11 people).

- 3) *What is the benefit of participating in this project for you personally?* Improved skills (12 people), found friends (8 people), increased their self-esteem and motivation (8 participants).
- 4) *What problems did you face while participating in the project?* 2 out of 8 students sometimes experienced problems with motivation, 4 people encountered problems related to the perception of criticism and recommendations.
- 5) *What do you suggest doing to address the problems you encountered?* 2 teachers suggested a system of motivation through financial incentives, 8 participants felt that students should be taught the art of critique and guidance.

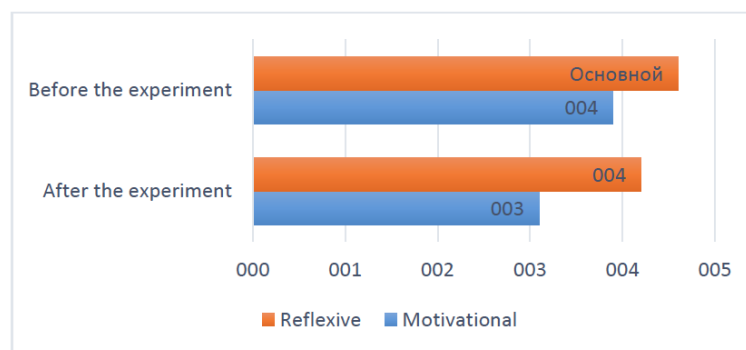


Figure 2: The dynamics of the motivational and reflective components development of the adolescents with behaviour deviation for their social adaptation through the creative thinking development, measured on a five-point scale.

Overall, the students, parents, teachers and psychologists spoke positively about the format and content of the project. Most of the students in the experimental group reported improvements in their thinking speed, self-organization, success, flexibility, problem-solving, and teamwork skills. The impact of the proposed model on the state of development of motivational and reflective components of social adaptation of adolescents with behaviour deviation through the development of creative thinking is presented in the graph below, measurements were made on a 5-point scale (see Figure 2).

DISCUSSION

This study found that the participation of the secondary school students with behaviour deviation in legacy projects make their social adaptation easier, improves their social skills, creative thinking style and learning motivation. The experiential results indicate that the students who participated in this project reported higher grades in their regular studies, higher learning motivation and being better at generating new ideas. This study confirms that there is a positive relationship between socially important creative activities, learning motivation and development of creative thinking styles.

Such a model, among other things, aims to develop the skills and competences of self-improvement through creative activity, which are now considered to be decisive and presented in the list of key life and career 21st-century skills [31].

This project also had a positive impact on the development of leadership qualities of adolescents, because during the project, scientists had to respect both the positive and negative feedback of their project partners and, since respect is a component of leadership, we can say that the feedback contributed to the development leadership qualities of students.

Interestingly and it was beyond the scope of this research, the deviant behaving children showed a greater desire, commitment and responsibility to succeed in this project than those who are socially accepted as normal ones. The projects designed by the former were voted higher than those of their counterparts and the reaction of the deviant children was a great deal more vivid (charismatic) than one of their peers which implies that adolescents with deviant

behaviour are potentially more creative than the typical once. This study confirmed that the things like creating a situation of psychological comfort, establishing a trusting relationship with a teenager, formation of positive self-esteem in adolescents through encouragements (NOT criticism), developing the right communication and behaviour skills, good patience are the "catalysts" and the very starting points of social adaptation of children *which we adults see as deviant*.

Overall, as a result of the project, positive changes have taken place in the social adaptation of adolescents with deviant behaviour, which has resulted from their engagement in activities aimed at the development of creative thinking.

LIMITATIONS OF THE STUDY

The main limitation of this study is the participation of only four secondary education institutions in it. The other we can consider the category of students of control and experimental groups. The biases of the members of the research team can also be considered as a limitation, as some of them were involved in the elaboration of this model, were engaged in organizing and conducting workshops and the project.

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CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

There is a considerable amount of research regarding the use of a creative activity to develop adolescents' social adaptation skills, but the problem of social adaptation of adolescents with behaviour deviation by engaging them in activities that are aimed at developing creative thinking has not been sufficiently studied.

The essence of the behaviour deviation in adolescents is manifested in the system of actions that reject or violate the local universally recognized legal, cultural, custom, value, moral norms and the process of social adaptation of adolescents with behaviour deviation is complex and the creative component is indispensable as it ensures the indispensable pedagogical tools that have the potential to "restart" the physiological and psycho-motivational spheres of the student.

Further research is needed in the field of an in-depth study of the preventive work content through creative activity by the expansion of the range of deviation types and adaptation of such a system in other types of general educational institutions.

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