

Effectiveness of Extra-curricular Activities in the Self-Development of Primary School Students

Nadiia Bryzhak¹, Ihor Bopko¹, Krystyna Chałas², Oksana Dubinina², Oleksandra Tsybanyuk³

¹Mukachevo State University,
Uzhgorodska str., 26, Mukachevo, 89600,
Ukraine

²The John Paul II Catholic University of Lublin,
Aleje Raclawickie 14, Lublin, 20-950,
Poland

³Chernsvtsi National University named after Yuriy Fedkovych,
Kotsyubinsky str., 2, Chernivtsi, 58002,
Ukraine

Received: March 27, 2023. Revised: July 5, 2024. Accepted: August 12, 2024. Published: September 23, 2024.

Abstract – The research aims to study the impact of attending extra-curricular activities on the self-perception of primary school students. The survey was conducted by using a questionnaire to determine students' self-perception in order to study their striving for independence. The obtained results were compared through Student's t-test. Primary school students who attend extra-curricular activities have statistically higher self-perception of scores than those who do not attend such activities. Children's striving for independence increases with age, but this is significantly influenced by their attendance in extra-curricular activities. Primary school students who attend activities of tourism, sports, and dance clubs have statistically higher self-perception indicators for the subscales of Physical Appearance and Athletic Competence than those who attend extra-curricular activities on music, art, and design. Extra-curricular activities contribute to a better self-perception of children of primary school age, and have a positive effect on their self-development and striving for independence. The results of the student survey indicate the need for a rational selection of extra-curricular activities, their types, and quantity for effective development and prevention of student overload.

Keywords: art, building, independence, self-perception, society, sports, students.

I. INTRODUCTION

A. Relevance

The modern educational process requires organizing training to promote the comprehensive development of the individual. Extra-curricular activities contribute to the development of individual talents, and the expansion of the worldview, without reducing the development to the formal acquisition of certain knowledge and evaluation. Extra-curricular activities are a supplement to the education system. Activities that take place outside the educational process and program give students the opportunity to develop their aptitudes and skills, which contributes to the development of individual abilities.

The process of familiarising the child with the world around him, his communication in society, and the study of various objects, subjects, and phenomena of the surrounding world contributes to the development of the mental activity, logic appears in words and actions, the ability to compare, analyze, and determine the causal relationship is formed, [1]. All these are prerequisites and contribute to independent education. The ideal age for fostering independence in a child is elementary school age, during which the child is introduced to educational activities that require independence and responsibility, [2].

The main difference between educational activity and any other is the presence of an educational task. The child must learn to independently determine the educational task in primary school. When a child cannot independently identify a task, educational activities begin to cause difficulties for him, [3], [4].

Recent research suggests that participation in extra-curricular activities increases feelings of engagement and commitment to school, which contributes to higher achievement and lower student dropout rates. Extra-curricular activities are an effective means of realising educational goals, as well as a platform on which modern learning strategies designed for student's progress and development are successfully implemented. Students who participate in various extra-curricular activities are given the opportunity to use work strategies through active participation in self-development, [5].

Research shows that attending extra-curricular activities has a positive effect on the development of school-age children and students. It also positively affects the development of self-efficacy of schoolchildren of different age groups and university students, [6], [7], [8]. In particular, playing sports in preschool and primary school age forms a proprioceptive basis for further development. Authors in [9], [10] established a positive relationship between the results of participation in extra-curricular activities and character formation in secondary school students. Students' participation in extra-curricular activities contributes to the development of student's creative abilities and artistic talents, as well as to socialization, increasing self-esteem, and self-realization [11], the acquisition of soft skills by the child, the ability to communicate and effectively interact with others [12].

However, there is research that indicates that participation in extra-curricular activities in the elementary grades has a small but positive causal effect on children's academic ability that increases in subsequent grades, [13].

The problem of this study is the need to evaluate and understand the role played by extra-curricular activities in the development of the personality and abilities of children of primary school age. Although a significant amount of research emphasizes the importance of extra-curricular activities for the general development of schoolchildren, there is still a need to study specific aspects of their impact specifically on younger students. One of them is the impact on the academic performance of younger students. The study aims to determine the extent to which participation in extra-curricular activities affects the academic achievement of junior high school students and to find out whether such activities actually contribute to improved academic results or whether this effect is minimal.

It is also important to consider how extra-curricular activities contribute to developing social and emotional skills. This includes communication, cooperation, self-esteem, and self-regulation. It is necessary to investigate whether such measures help children to better adapt to the social environment and develop emotional stability. Research should determine how extra-curricular activities affect the development of individual abilities and talents of students, especially in those areas that are not always covered by the main curriculum. Engagement and motivation is another important aspect. It is necessary to determine what types of extra-curricular activities are most attractive and motivating for younger students, and how they can be organized for maximum effect. Thus, this work aims to identify and evaluate various aspects of the effectiveness of extra-curricular

activities in promoting the self-development of junior high school students, which will allow the development of recommendations for educational institutions to optimize their extra-curricular activities.

B. Unexplored Issues

There is a large number of studies on the positive impact of participation in extra-curricular activities, as well as some studies on the possible influence of other factors on the development of children. However the impact of various types of extra-curricular activities on certain aspects of children's self-development, and the comparison of the self-perception of children who attend extra-curricular activities with those who study at school and do not attend extra-curricular activities remain unexplored. The impact of participation in extra-curricular activities of junior primary school students is not sufficiently studied.

C. Aim

The aim is to study of the impact of attending extra-curricular activities on the self-perception of primary school students.

D. Objectives/questions

1. Does participation in extra-curricular activities affect the self-perception of primary school students?
2. Do the aspects of self-perception differ from the type of extra-curricular activities?
3. What is the level of self-perception and striving for independence in students who attend extra-curricular activities and those who do not attend such activities?

II. LITERATURE REVIEW

Studies on the effectiveness of attending extra-curricular activities indicate the positive impact of their attendance and the formation of various aspects of the personality of schoolchildren and university students, [14]. Participation in extra-curricular activities increases indicators of engagement in learning, [6], [15]. These articles are aimed at reviewing the mechanism of conducting extra-curricular activities (ECA) in the open and distance learning (ODL) system and studying their impact on student engagement. The study [6] has a cross-sectional quantitative approach and uses a survey and random sampling techniques. A significant difference was found in the engagement levels of students who had participated in ESAs compared to those who had never participated in ESAs. However, a limitation is that the data were collected from only one university, which may make it difficult to generalize the results. The authors suggest that a similar study be conducted in other ODN institutes to confirm the results. The practical significance of the article [15] is the recognition of the importance of ECA in ODN institutions for increasing student involvement and the possibility of improving the system of conducting them for all such universities. Was proved the relationship between students' engagement in school extra-curricular activities, as well as music and art activities, [16]. The work examines the influence of students' participation in the school percussion group on their involvement in learning.

The research was conducted using a qualitative method through individual semi-structured interviews. Six students between the ages of eleven and fifteen, two teachers of these students, and two facilitators of the percussion group took part in it. The results showed a positive effect of participation in the percussion group on student engagement in learning, with a special emphasis on the behavioral aspect. Given the relationship between learning engagement and learning processes, promoting learning engagement through musical activities can be an innovative strategy to improve academic performance.

The educational process is being modernized to a large extent, the development of digital technologies necessitates the improvement of digital literacy and the search for aptitudes and hobbies of schoolchildren, which would contribute to the comprehensive development of the personality, prevention of dependence on digital means, [17]. The article examines the necessity of forming an educational and developmental environment in modern conditions. The main goal is to study the peculiarities of the educational and developmental environment, its classification, and the development of didactic games in the Writing and Mathematics lessons, which contribute to students' self-organization development. The main types of self-organization of students under the influence of the educational and developmental environment were considered, and the stages of development of self-organization skills were determined. Extra-curricular classes contribute to the comprehensive development of students, their abilities, and aptitudes, [18]. The work is devoted to consideration of the importance of extra-curricular activities in the positive development of youth in conditions of limited resources. The authors use action research with schools in the Kilimanjaro region of northern Tanzania to develop a self-assessment tool for extra-curricular leaders that combines local and global best practices. Encouraging extra-curricular activities is effective at early stages of learning, [11], [19]. The organization of extra-curricular activities indicates a high level of teacher competence and quality of education, [20]. The study is devoted to the role of the course of extra-curricular activities in preparing future teachers and its influence on the practice of conducting such activities. Case studies, interview data analysis, and content analysis were used to evaluate the planned activities. It was found that the course's theoretical material contributed to future teachers' professional and personal growth.

The studies show a direct positive impact of participation in extra-curricular activities on the formation of character and the development of sports skills, [21]. The involvement of primary school students is influenced by the choice and persistence of parents, [22]. Children of parents who are classified as obtrusive attend a larger number of extra-curricular activities, children of parents who are classified as supervisory attend groups chosen by the parents, children of parents who remotely monitor their children were the least involved in primary school, but later some of them chose their own extra-curricular classes. Family relationships influence

belonging to school, and students' self-efficacy through supporting and shaping students' self-esteem.

In the modern educational landscape, the availability of digital information significantly changes children's motivation for independent activity, stimulating some to effective development, while others – to a lack of motivation and activity for self-development, [23], [24], [25]. Influential factors in the attendance of extra-curricular activities by pupils and students are the perception of the need for social or emotional needs, the availability of time, and the desire of students, [22]. An important factor in attending extra-curricular activities is the availability of such activities at school or in the area where children or students live.

Peculiarities of Extra-curricular Activities in Ukraine

Extra-curricular activities in Ukraine involve attending classes in certain types of sports, art, tourism, music, acting, and other types of activities. Services for extra-curricular activities are provided by state and private entities, in particular, child and youth development centers, child and youth sports schools, art schools, and private institutions that provide such services. Some types of extra-curricular activities are also carried out in schools, but as types of extra-curricular activities, the results of participation or non-participation do not have an impact on learning outcomes.

III. METHODS

A. Research Design

The research was carried out in several stages, according to the pedagogical research's purpose, tasks, and specifics. In the first preparatory stage, formulation of research objectives, analysis of recent sources and publications to identify existing gaps in research took place. A selection of participants, research methods, and statistical tools for data processing and evaluation were also carried out. Sociometric and psychometric studies were conducted at the second experimental stage using the following methods. The received data were also processed and evaluated. At the third, final stage, the research results were summed up, conclusions were formulated, and the obtained results were presented. The survey was conducted at the end of the academic year (2022/2023).

B. Sampling

The study involved pupils from 10 schools who study in junior (1-4) grades (n=1118). One of the parents of children involved in the study gave written consent to participate in the study. Supervising teachers of grades 1-4 (n=38) conducted a survey of students using questionnaires during class assemblies. The number of students participating in extra-curricular activities, the direction of the activities, the factors that positively affect participation in such activities, and the reasons for non-attendance of such activities by schoolchildren were determined. Table I presents the composition of students who attend and do not attend extra-curricular classes.

TABLE I. DEMOGRAPHIC CHARACTERISTICS OF STUDENTS WHO PARTICIPATED IN THE STUDY

Grade	Number of students attending extra-curricular activities	Type of extra-curricular activities												The number of students who do not attend extra-curricular activities		
		Music and singing		Art		Sports and dancing		Tourism		Lego building		More than 1 type of activity				
		g	b	g	b	g	b	g	b	g	b	g	b	g	b	
1	120	17	6	12	8	18	21	12	15	5	6	0	0	75	84	159
2	112	11	7	14	8	14	18	14	14	5	7	2	5	73	88	161
3	124	8	7	16	13	24	20	13	12	4	7	4	6	63	85	148
4	111	13	8	11	7	16	18	11	14	5	8	5	6	74	81	155
Total	495	49	28	53	36	72	77	50	55	19	28	11	17	285	338	623

Note: g – girls, b-boys

C. Methods

The research employed a sociological survey, mathematical processing of data. Children’s self-perception was measured using the Self-Perception Profile for Children presented in [26] and validated by [27]. This questionnaire consists of six scales, having 6 questions each. The scales of the questionnaire are as follows: academic competence, social competence, athletic competence, behavior conduct, physical appearance, and global self-worth. Items are evaluated on a Likert scale from 4 – the most adequate self-esteem, to 1 - the least adequate. A detailed description of the methodology is provided in [26]. The questionnaire was properly translated and standardized. The survey according to this questionnaire takes no more than 10-15 minutes.

The assessment of the child’s striving for independence was determined using the method proposed by [28]. This survey revealed the child’s desire for autonomy and independent solving of problems available for solving by children of a certain age. For this purpose, the child read about 10 problematic situations that happen to children of primary school age (for example, if you are hungry or if you have a headache). It was assessed how the child seeks to solve the situation independently and seeks help from parents or elders. The answers were evaluated as follows: 0 points – when the child does not know what to do or suggests seeking parents’ help, 1 point – when the child suggests addressing to specialist (doctor), 2 points – when the child suggests solving the problem on his own. Accordingly, striving for independence is evaluated on a scale from 0 to 20 points.

Minimum, maximum, average, and standard deviation were calculated to evaluate the obtained values. The Student’s t-test was calculated to identify statistically significant differences between groups of students:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}, \tag{1}$$

where X_1 and X_2 indicate samples;
 n_1 – the number of respondents at the input control;
 n_2 – the number of respondents at the final control;
 s – means the mean squared error:

$$s_x = \sqrt{\frac{1}{(n-1)n} \sum_{i=1}^n (x - x_i)^2}, \tag{2}$$

The obtained data regarding were verified for the normality of distribution using the Shapiro-Wilk test:

$$W = \frac{1}{s^2} [\sum_{i=1}^n a_{n-s+1} (x_{n-i+1} - x)]^2, \tag{3}$$

$$\text{where: } s^2 = \frac{1}{n} \sum_{i=1}^n x_i, \tag{4}$$

Calculations were carried out using the SPSS Statistics package.

D. Ethical Criteria

The study involved children whose parents gave their consent for the child’s participation in the survey. The child could refuse the survey at his/her own request. Parents and children were informed about the purpose, process, and presentation of the obtained results, respecting the principles of anonymity and confidentiality of the study. Potential harm or any pressure during the survey was excluded, the survey was stopped or turned into a game if the child refused or was not ready to answer. All stages of the research were approved by the supervisory boards, which included managers, representatives of the administration, supervising teachers, and psychologists from the schools where the survey was conducted.

IV. RESULTS

The analysis of the received answers to the questions of the questionnaires of children from grades 1-4 gives grounds to state the absence of statistically significant differences between the indicators of the subscales that characterize the self-esteem between students who study in grades 1-4 and attend one of the types of extra-curricular activities. So the indicators of the children’s self-perception were compared in a general summary of the answers of students of grades 1-4 who attend a certain type of classes. A survey of children to determine the level of their self-perception profile shows that children who study in grades 1-2 and who attend various extra-curricular activities have a higher level of self-perception, regardless of gender than those who do not attend any extra-curricular activities.

The comparison of the self-esteem indicators between girls and boys within the group who attend one type of extra-curricular activities found no significant differences (Table II):

TABLE II. COMPARISON OF INDICATORS BETWEEN GIRLS AND BOYS IN GRADES 1-4 WITHIN THE SAME GROUP REGARDING ATTENDING EXTRA-CURRICULAR ACTIVITIES

Subscales		Music and singing	Art	Sports and dancing	Tourism	Lego building	More than 1 type of activity	DO not attend
Academic competence	t test	0.136	0.252	0.258	0.019	0.722	0.462	0.241
	p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Social competence	t test	0.766	0.567	0.984	0.564	0.756	0.756	0.756
	p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Athletic competence	t test	0.897	1.121	0.954	1.098	0.786	0.678	0.564
	p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
behavior conduct	t test	0.546	1.098	1.231	0.787	0.954	0.897	1.121
	p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
physical appearance	t test	1.012	0.897	1.121	0.898	0.756	0.989	1.112
	p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Global self-worth	t test	1.342	0.956	1.178	1.128	1.231	0.987	1.121
	p	0.447	0.402	0.399	0.493	0.239	0.324	0.406

TABLE III. COMPARISON OF SELF-ESTEEM INDICATORS OF BOYS IN GRADES 1-4 WHO ATTEND VARIOUS TYPES OF EXTRA-CURRICULAR ACTIVITIES

Type of extra-curricular activity	Subscales		Art	Sports and dancing	Tourism	Lego building	More than 1 type of activity	Students who do not attend extra-curricular activities
Music and singing	Academic competence	t	0.614	0.365	0.489	0.356	0.488	2.325
		p	>0.05	>0.05	>0.05	>0.05	>0.05	<0.05
	Social competence	t	1.114	1.211	0.878	0.565	0.754	2.355
		p	>0.05	>0.05	>0.05	>0.05	>0.05	<0.05
	Athletic competence	t	0.658	3.541	2.477	1.147	2.854	1.325
		p	>0.05	<0.05	<0.05	>0.05	<0.05	>0.05
	Behaviour conduct	t	1.546	0.785	0.687	0.258	0.635	1.355
		p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
	Physical appearance	t	0.895	2.237	3.145	0.458	3.451	3.157
		p	>0.05	<0.05	<0.05	>0.05	<0.05	<0.05
	Global self-worth	t	0.365	1.564	1.124	0.877	0.432	3.358
		p	>0.05	>0.05	>0.05	>0.05	>0.05	<0.05
Sports and dancing	Academic competence	t	0.564		0.895	0.745	1.215	2.569
		p	>0.05		>0.05	>0.05	>0.05	<0.05
	Social competence	t	0.635		0.369	1.021	1.157	3.325
		p	>0.05		>0.05	>0.05	>0.05	<0.05
	Athletic competence	t	3.256		0.221	5.232	0.741	3.656
		p	>0.05		>0.05	<0.05	>0.05	<0.05
	Behaviour conduct	t	1.232		0.253	1.212	0.211	1.242
		p	>0.05		>0.05	>0.05	>0.05	>0.05
	Physical appearance	t	2.323		0.541	1.124	0.232	5.212
		p	<0.05		>0.05	>0.05	>0.05	<0.05
Global self-worth	t	1.232		0.412	1.221	1.213	2.363	
	p	>0.05		>0.05	>0.05	>0.05	<0.05	
Tourism	Academic competence	t	0.363			1.232	1.542	3.523
	Social competence	p	>0.05			>0.05	>0.05	<0.05
	Athletic competence	t	3.022			0.856	0.985	3.569
	Behaviour conduct	p	<0.05			>0.05	>0.05	<0.05
	Physical appearance	t	3.212			0.865	0.965	2.636
	Global self-worth	p	<0.05			>0.05	>0.05	<0.05
Lego building	Academic competence	t	0.985				0.686	1.235
	Social competence	p	>0.05				>0.05	>0.05
	Athletic competence	t	0.145				0.568	0.252
	Behaviour conduct	p	>0.05				>0.05	>0.05
	Physical appearance	t	0.563				0.363	3.021
	Global self-worth	p	>0.05				>0.05	<0.05
More than 1 type of activity	Academic competence	t	0.363					3.369
	Social competence	p	>0.05					<0.05
	Athletic competence	t	0.212					5.021
	Behaviour conduct	p	>0.05					<0.05
	Physical appearance	t	0.896					3.012
	Global self-worth	p	>0.05					<0.05

It can be said that no statistically significant differences were found between boys and girls in the assessment of their academic, social, and athletic competence, behavior, physical appearance, and global self-esteem depending on participation in extra-curricular activities. The absence of statistically significant differences indicates that participation in different types of extra-curricular activities does not similarly affect boys and girls in the 1st to 4th grades. Comparing scores between boys who attend different types of extra-curricular activities, statistically significant differences exist in self-

worth subscales such as Athletic Competence between those who attend art and those who attend sports or dance classes, tourism, and more than one of the types of extra-curricular activities. However, indicators of Social and Academic Competence, and Behaviour Conduct do not have significant differences between boys who attend various types of extra-curricular activities and those who do not attend extra-curricular activities (Table III).

TABLE IV. COMPARISON OF SELF-ESTEEM INDICATORS OF GIRLS IN GRADES 1-4 WHO ATTEND VARIOUS TYPES OF EXTRA-CURRICULAR ACTIVITIES

Type of extra-curricular activity	Subscales		Art	Sports and dancing	Tourism	Lego building	More than 1 type of activity	Students who do not attend extra-curricular activities
Music and singing	Academic competence	t	0.725	0.653	0.523	0.632	0.564	2.187
		p	>0.05	>0.05	>0.05	>0.05	>0.05	< 0.05
	Social competence	t	1.342	1.212	1.755	1.434	0.878	2.651
		p	>0.05	>0.05	>0.05	>0.05	>0.05	< 0.05
	Athletic competence	t	1.434	2.323	2.459	1.323	3.656	1.565
		p	>0.05	< 0.05	< 0.05	>0.05	< 0.05	>0.05
	Behaviour conduct	t	0.677	0.876	0.989	0.436	1.457	1.343
p		>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	
Physical appearance	t	1.112	2.767	2.985	1.123	2.612	3.345	
	p	>0.05	< 0.05	< 0.05	>0.05	< 0.05	< 0.05	
Global self-worth	t	0.988	0.987	1.234	0.488	0.676	2.989	
	p	>0.05	>0.05	>0.05	>0.05	>0.05	< 0.05	
Sports and dancing	Academic competence	t	0.656		1.114	0.787	0.676	3.324
		p	>0.05		>0.05	>0.05	>0.05	< 0.05
	Social competence	t	0.635		0.369	1.021	1.157	3.325
		p	>0.05		>0.05	>0.05	>0.05	< 0.05
	Athletic competence	t	2.767		0.221	3.234	0.645	3.234
		p	< 0.05		>0.05	< 0.05	>0.05	< 0.05
	Behaviour conduct	t	0.989		0.878	1.767	0.822	1.657
p		>0.05		>0.05	>0.05	>0.05	>0.05	
Physical appearance	t	3.124		0.761	1.165	1.233	4.345	
	p	< 0.05		>0.05	>0.05	>0.05	< 0.05	
Global self-worth	t	0.878		0.545	1.768	1.211	2.878	
	p	>0.05		>0.05	>0.05	>0.05	< 0.05	
Tourism	Academic competence	t	0.545			1.112	1.454	2.564
	Social competence	p	>0.05			>0.05	>0.05	< 0.05
	Athletic competence	t	0.989			0.434	0.566	2.887
	Behaviour conduct	p	>0.05			>0.05	>0.05	< 0.05
	Physical appearance	t	3.232			0.676	0.878	3.122
	Global self-worth	p	>0.05			>0.05	>0.05	< 0.05
Lego building	Academic competence	t	1.212				0.754	0.989
	Social competence	p	>0.05				>0.05	>0.05
	Athletic competence	t	0.655				0.765	0.435
	Behaviour conduct	p	>0.05				>0.05	>0.05
	Physical appearance	t	1.114				0.988	2.767
	Global self-worth	p	>0.05				>0.05	< 0.05
More than 1 type of activity	Academic competence	t	0.787					3.435
	Social competence	p	>0.05					< 0.05
	Athletic competence	t	0.343					3.054
	Behaviour conduct	p	>0.05					< 0.05
	Physical appearance	t	1.767					2.989
	Global self-worth	p	>0.05					< 0.05

TABLE V. THE AVERAGE RESULT OF STRIVING FOR INDEPENDENCE AMONG SCHOOLCHILDREN

Grade	Type of extra-curricular activity												Students who do not attend extra-curricular activities	
	Music and singing		Art		Sports and dancing		Tourism		Lego building		More than 1 type of activity			
	g	b	g	b	g	b	g	b	g	b	g	b	g	b
1	11.21± 1.12	12.22± 1.25	10.65± 2.23	11.35± 1.25	12.65± 0.987	11.95± 0.975	12.23± 0.965	12.54± 0.975	11.29± 1.25	12.49± 1.545	12.96± 0.954	13.04± 0.865	9.55± 1.53	9.04± 1.35
2	11.09± 0.95	12.34± 0.89	11.76± 1.12	12.06± 1.22	12.42± 0.76	12.35± 1.15	13.02± 0.96	12.44± 1.16	11.34± 1.25	12.05± 0.95	12.32± 0.75	12.76± 1.15	10.33± 1.55	10.29± 0.75
3	10.12± 1.55	11.96± 1.32	11.34± 1.44	11.77± 0.65	11.25± 1.15	11.06± 1.15	11.22± 1.25	12.34± 0.75	11.73± 1.15	12.34± 1.71	12.46± 1.65	12.85± 1.87	10.78± 1.65	10.95± 1.76
4	11.23± 1.16	12.32± 0.97	12.24± 1.15	12.58± 0.76	12.87± 0.95	12.35± 0.76	11.98± 1.16	12.45± 0.95	11.98± 0.78	12.68± 1.15	12.95± 1.16	12.96± 0.95	11.26± 0.85	11.13± 1.25

Most comparisons did not show statistically significant differences between different activities. However, there are some exceptions where statistically significant differences are observed. For example, children who participate in sports and dance have higher self-esteem scores regarding physical appearance than those who do not participate in extra-curricular activities. Children who are involved in tourism have also been found to have higher scores on behavioral skills compared to those who do not participate in extra-curricular activities. It can be said that the type of extra-curricular activity may influence certain aspects of boys' self-esteem at primary school. Still, this influence may generally be insignificant, depending on the specific type of activity and the specific aspect of self-esteem.

Boys who attend sports and dance classes show statistically significant differences in self-reported scores of Athletic Competence with the Lego building group and better self-reported scores of their Physical Appearance than those who attend art classes (Table III). Boys who attend classes in tourism scored better on the scales of self-perception Athletic Competence and Physical Appearance than those who attend art classes. There are statistically significant differences between all subscales that characterize the self-perception of boys who attend various types of extra-curricular activities and those who do not attend such activities (Table III).

Indicators of self-perception of girls of primary school age between those who attend and do not attend extra-curricular activities have statistically significant differences (Table IV).

The table compares the self-esteem indicators of girls from 1st to 4th grade who participate in various extra-curricular activities. Most comparisons did not show statistically significant differences between different activities. However, there are some exceptions where statistically significant differences are found. For example, girls who participate in sports and dance have higher self-esteem scores regarding physical appearance than those who do not participate in extra-curricular activities. Girls who are involved in tourism are also found to have higher scores on behavioral ability compared to those who do not participate in extra-curricular activities.

Girls who attend music and singing classes do not have a statistical advantage in self-esteem over those who attend art classes. At the same time, girls who attend Sports, Dancing, and Tourism and who attend more than one type of extra-curricular activities have a statistical advantage over those who attend Art and Lego building classes. Girls who attend

more than one type of extra-curricular activity have advantages in self-esteem over those who do not attend extra-curricular activities.

The assessment of the children striving for independence shows that children who attend extra-curricular classes have a significantly higher level of striving for independence (Table V).

A comparison of the level of striving for independence among students of grades 1-4 found statistically significant differences between the indicators of boys and girls. At the same time, a statistically significant difference between children from different years of study was recorded in the indicators of independence between girls of grade 1 and girls of grades 2-4 who are engaged in extra-curricular activities in the field of Art, and similarly among boys of the same age and type of extra-curricular activities. Lower indicators of striving for independence are also recorded in girls who attend Lego building classes and other types of extra-curricular activities. The indicators of striving for independence in students who do not attend extra-curricular activities compared to children who attend various types of extra-curricular activities are statistically lower. But statistically insignificant differences in striving for independence are also noted in children who attend more than one type of classes are somewhat higher.

V. DISCUSSION

The conducted research gives grounds to ascertain the effectiveness of attending extra-curricular activities by primary school students on their self-perception and striving for independence. It was determined that various extra-curricular classes contribute to the formation of a certain child's self-perception regarding the development of relevant abilities. In particular, playing sports and dancing, tourism contributes to the development of self-perception of one's physical form at a higher level than that of children engaged in music, art, and Lego building. This is especially relevant for modern youth, because according to [29] only 20% of children and adolescents fulfill the requirements of the World Health Organization regarding physical activity. Focusing on improving the motor skills of young people promotes future participation in sports activities. So, it is necessary to involve children and adolescents in activities in their free time in order to promote physical activity, [9].

Taking part in certain types of extra-curricular activities contributes to the formation of such types of self-perception,

which are affected by a certain activity. In particular, was proved that the introduction of the Logic course into the educational process of primary school in grades 2-4 contributes to the development of the ability to efficiently interact with others, as well as the development of communication skills, [30]. This is confirmed by the obtained results regarding the self-assessment of children who attend designing classes, which have reliable differences in academic performance compared to children who attend other types of extra-curricular activities.

[31], study that whether elementary students attend extra-curricular activities is influenced by parents, especially in grades 1 and 2. Researchers in [32] proved that preterm children participate less in sports activities, which is related to various factors, such as the health and level of children's development, and the wishes or fears of the parents regarding their children. Taking into account the data obtained earlier by the specialists, it is also worth considering the results obtained in this study, that children who attend more than one type of extra-curricular activity do not have statistically significant differences in self-perception from those who attend one type of extra-curricular activity. This means that the choice of too many types of extra-curricular activities does not have a pronounced effect on the self-perception of primary school students, however, excessive workload can have negative consequences on the child's development, and in the future - on the motivation for various types of activities. [13] are of the same opinion, who claim that participation in extra-curricular learning activities or in a greater number of educational services does not always contribute to the improvement of socio-emotional skills of primary or high school students. The obtained results indicate the need for a rational choice of more than one type of extra-curricular activity for a child to attend, the complementarity of different types of extra-curricular activities, taking into account the child's capabilities and needs. Participation in extra-curricular sports activities contributes to the comprehensive development of junior high school students and increases their level of motor activity, [33]. [34] showed the effectiveness of attending extra-curricular activities in music on the students' development, which was confirmed by the results of the conducted research. Children who attend music classes have statistically higher self-perceived scores in academic development and general self-esteem than children who attend sports activities, dance, and design. Other specialists proved the effectiveness of attending extra-curricular activities on the cognitive and motor development of children. The type of sport and the level of motor activity during various sports are also important, [35]. Finally, the obtained data confirm the results obtained in [36] that participation in extra-curricular activities contributes to the acquisition of skills for successful activities in the modern globalized world.

From a theoretical point of view, the results confirm the importance of extra-curricular activities in forming children's self-perception and independence. Research has shown that participation in various extra-curricular activities contributes to developing specific abilities and skills, which is reflected in increased self-esteem and academic achievement. Theoretical findings also emphasize the importance of adapting educational programs to children's individual needs, which

contributes to a better understanding of the mechanisms of development through extra-curricular activities.

The practical implications of the study are significant for educational policy and practice. They point to the need to actively involve children in various extra-curricular activities, especially physical activity, to improve their health and fitness. Practical recommendations could include expanding the offer of extra-curricular activities in schools, particularly sports and arts, and supporting parents in choosing the best activities for their children. The results also indicate the need for a careful approach to the number of extra-curricular activities to avoid excessive load on children and maintain their motivation. Given the influence of parents on children's participation in extra-curricular activities, it is also important to conduct information campaigns to raise awareness among parents about the benefits and optimal approaches to extra-curricular activities.

The study provides a deeper understanding of the impact of extra-curricular work on children's development, especially in forming their self-perception and desire for independence. It was found that participation in various extra-curricular activities contributes to the development of specific abilities that are not always covered by the main curriculum. In particular, sports, dance, and tourism contribute to improved physical fitness and self-esteem, while music and design activities develop academic skills and overall self-esteem.

The methodological limitations of this study include several aspects. First, the sample of participants may be limited in size or geographic location, affecting the overall results. Second, the study may rely on self-reports by students and their parents regarding participation in extra-curricular activities, which may lead to subjectivity and inaccuracies in the data collected.

VI. CONCLUSIONS

A. *Relevance*

The modern education system should contribute to the comprehensive development of the individual, the ability to navigate in various spheres of life, as well as the development of various skills in addition to the acquisition of theoretical knowledge. Attending extra-curricular activities is an effective means of expanding children's worldviews, acquiring skills, building purposefulness, physical development, and other vital skills.

B. *Research Findings*

The obtained survey data of children who attend various extra-curricular activities and more than one extra-curricular activity show their statistically significant advantage over their self-perception over those who do not attend such classes. Striving for independence gradually increases with age in all children, but this desire is higher in those who attend extra-curricular activities than in those who do not attend such activities. Indicators of striving for independence in girls and boys who attend more than one type of activity do not have statistically significant advantages over those who attend only one type of extra-curricular activity but have significant advantages over those who do not attend extra-curricular activities.

Attending a certain type of extra-curricular activities contributes to the formation of certain qualities, in particular, children who attend classes in the fields of Sports, Dancing and Tourism have statistically higher self-perceptions of their physical development and competence than those who attend Art, Music, and Designing classes. Indicators of the desire for independence in girls and boys who attend additional extra-curricular activities are higher than in those children who do not attend extra-curricular activities.

C. Applications

The obtained results show the effectiveness of attending certain extra-curricular activities on the formation of their self-perception in various areas, in particular, a stronger influence on the positive self-perception of their physical appearance and athletic competence by children who attend sports and dance clubs, and tourism. At the same time, attending designing, music, and art classes contributes to the development of the necessary skills in these activities and the development of the child's abilities and aptitudes. Therefore, the choice of types of extra-curricular activities can be based, first of all, on the need to develop the necessary qualities in a child (physical development). The results of children who attend more than one type of activity show that the children's self-perception does not have statistically significant differences with those children who attend one type of activity. This indicates the need for a reasonable choice of activities for children of primary school age, which, first, will not overload the child, and second, will contribute to the mutual development of certain qualities. In particular, it can be a criterion for choosing the necessary load, for example, for children who attend art classes and sports classes.

D. Prospects for Further Research

Future research can be aimed at studying the impact of attending extra-curricular activities on student's academic performance, their organization and homework time, and the impact of attending various extra-curricular activities on the health and development of children's physical qualities. And finally, the prospect for further research is to study the duration of time spent by children who attend extra-curricular activities, the time spent on digital devices, the quality of this time (studying or academic games, or passive observation of various information), and comparing these indicators with children who do not attend extra-curricular activities, studying visual acuity, academic performance, interaction with parents.

Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work the authors used **Quillbot** to <https://quillbot.com/grammar-check>. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication. Generative AI contributed to the creation of text fragments, the structuring of materials and the automation of data analysis processes. The use of AI also made it possible to carry out a more accurate and objective assessment of information, which positively affected the quality and

reliability of the results obtained. All results were checked and verified by the authors of the article to ensure their compliance with academic standards and scientific ethics.

References

- [1] O. Stoliarchuk, O. Serhieienkova, S. Khrypko, N. Prorok, S. Kalishchuk, M. Kolinko and K. Binkivska "Self-Development as a Vector of Sustainable Development of Society: The Perspective of Ukrainian Students", *Europ. J. Sustainable Dev.*, vol. 13, no. 1, pp. 428-428, 2024. <https://doi.org/10.14207/ejsd.2024.v13n1p428>.
- [2] X. Matteucci, and M. K. Smith "Journeys of Self-development", In *The Creative Tourist: A Eudaimonic Perspective (The Tourist Experience)*, Emerald Publishing Limited, Leeds, pp. 69-85, 2024. <https://doi.org/10.1108/978-1-83753-404-320241005>.
- [3] K. B. Alievich "Pedagogical Psychological Characteristics of Self-Development of Teachers of the Future Beginner Class", *Excellencia: Int Mult J Educ.*, vol. 2, no. 5, pp. 925-929, 2024. [Online]. <https://multijournals.org/index.php/excellencia-imje/article/view/1111> Last Accessed Date 15 February 2024
- [4] D. R. Akmal, A. D. Noviyanti, D. W. Rahman, O. Sulistia, S. A. N. Adi, M. Novitasari and K. S. Pratama "Improving Self-Development Capability in Dressing Through the Application of Demonstration Method for Cerebral Palsy Quadriplegia Children", *JASSI ANAKKU*, vol. 23, no. 1, pp. 74-83, 2023. [Online]. <https://ejournal.upi.edu/index.php/jassi/article/view/67895> Last Accessed Date 15 February 2024
- [5] C. Wikman, M. W., Allodi, and L. A. Ferrer-Wreder "Self-concept, prosocial school behaviors, well-being, and academic skills in elementary school students: A whole-child Perspective", *Educ Sci.*, vol. 12, no. 5, paper 298, 2022. <https://doi.org/10.3390/educsci12050298>
- [6] S. Munir and M. Zaheer "The role of extra-curricular activities in increasing student engagement", *Asian Association of Open Universities J.*, vol. 16, no. 3, pp. 241-254, 2021. <https://doi.org/10.1108/AAOUJ-08-2021-0080>.
- [7] R. Finnerty, S. A. Marshall, C. Imbault, and L. J. Trainor "Extra-curricular activities and well-being: Results from a survey of undergraduate university students during COVID-19 lockdown restrictions", *Front Psychol.*, vol. 12, paper 647402, 2021. <https://doi.org/10.3389/fpsyg.2021.647402>.
- [8] K. Chałas, O. Dubinina, T. Burlaienko and T. Kravchynska "Information Technology of Education in the Light of Vincent Ocon's Theory of Multi Sided Personality Learning", *Int J Comput Sci Network Secur.*, vol. 22, no. 9, pp. 657-665, 2022. <https://doi.org/10.22937/IJCSNS.2022.22.9.86>.
- [9] C. Wang, J. Gao, Z. Deng, et al. "Extra-curricular sports activities modify the proprioceptive map in children aged 5-8 years", *Sci Rep.*, vol. 12, paper 9338, 2022. <https://doi.org/10.1038/s41598-022-13565-8>.

- [10] J. Jamaluddin, S. Syahrani, S. Sirajuddin and N. Nasrullah "The Influence of Extra-curricular Activities on Character Building of Students of SMPN 22 Makassar", *J Office*, vol. 7, no. 1, pp. 1-10, 2021. <https://doi.org/10.26858/jo.v7i1.18989>.
- [11] G. Alexander, Sh. Matoti and P. Van Zyl "Ascertaining the use of extra-curricular activities in promoting learners' Holistic Development in multicultural school settings", *Educ New Dev.*, vol. 2021, pp. 182-186, 2021. <https://doi.org/10.36315/2021end039>.
- [12] T. Feraco, D. Resnati, D. Fregonese, A. Spoto and Ch. Meneghetti, "Soft Skills and Extracurricular Activities Sustain Motivation and Self-Regulated Learning at School", *J Exp Educ.*, vol. 90, no. 3, pp. 550-569, 2019. [Online]. Available: <https://eric.ed.gov/?id=EJ1346306> Last Accessed Date 15 February 2024.
- [13] W. Carbonaro and E. Maloney "Extracurricular Activities and Student Outcomes in Elementary and Middle School: Causal Effects or Self-selection?", *Socius*, vol. 5, pp. 1-17, 2019. <https://doi.org/10.1177/2378023119845496>.
- [14] A. E. King, F. A.E. McQuarrie and S. M. Brigham "Exploring the Relationship Between Student Success and Participation in Extra-curricular Activities", *SCHOLE: J Leisure Studies Recreation Educ.*, vol. 36, no. 1-2, pp. 42-58, 2021. <https://doi.org/10.1080/1937156X.2020.1760751>.
- [15] T.-L. Griffiths, J. Dickinson and C. Day "Exploring the relationship between extra-curricular activities and student self-efficacy within university", *J Further and High Educ.*, vol. 45, no. 9, pp. 1294-1309, 2021. <https://doi.org/10.1080/0309877X.2021.1951687>.
- [16] M. Costa, I.G. Cruz, F. Martins, L. Verissimo and I. Castro "Extra-curricular Music Activities in School and School Engagement: Students' and Teachers' Perspectives", *Qualitat Research Educ.*, vol. 12, no. 1, pp. 52-80, 2023. <https://doi.org/10.17583/qre.11206>.
- [17] V. Chaika, O. Pysarchuk and O. Chykurova "Educational and developmental environment as a factor of skills formation of self-organisation of primary school pupils' educational activity", *Ped Educ Manag Rev.*, no. 1, pp. 79-90, 2020. <https://doi.org/10.36690/2733-2039-2020-1-79>.
- [18] M. A. Guest, P. Siamoo, G. Maige and J. Li "Integrating global and local best practices for youth development afterschool: Constructing the Kilimanjaro extracurriculars self-assessment", *Cogent Educ.*, vol. 8, no. 1, paper 1982600, 2021. <https://doi.org/10.1080/2331186X.2021.1982600>.
- [19] M. Ostrovska, K. Margitych, N. Bryzhak, I. Bopko, and M. Bedevelska "The Use of Creative Projects for the Enhancement of Primary School Students' Learning Motivation", *J University Zulia*, vol. 14, no. 41, pp. 890-907, 2023. <https://doi.org/10.46925/rdluz.41.43>.
- [20] D. İleritürk "Evaluation of extra-curricular activities in education according to pre-school teacher candidates' views", *Soc Sci & Humanities Open*, vo. 8, no. 1, paper 100524, 2023. <https://doi.org/10.1016/j.ssaho.2023.100524>.
- [21] E. Todaka, and A. Doering "Lifestyle Sports and Public Education in Japan: New Collectivism, Contest(ed) Benefits, and Community Revitalization in Aoshima's Surfing Bukatsu", *Educ Sci.*, vol. 13, no. 11, paper 1111, 2023. <https://doi.org/10.3390/educsci13111111>.
- [22] J. Li and W. Shao "Influence of Sports Activities on Prosocial Behavior of Children and Adolescents: A Systematic Literature Review", *Int J Environ Res Public Health*, vol. 19, no. 11, paper 6484, 2022. <https://doi.org/10.3390/ijerph19116484>.
- [23] B. Sauce, M. Liebherr, N. Judd, et al. "The impact of digital media on children's intelligence while controlling for genetic differences in cognition and socioeconomic background", *Sci Rep.*, vol. 12, paper 7720, 2022. <https://doi.org/10.1038/s41598-022-11341-2>.
- [24] M. Vedeckina and F. Borgonovi "A Review of Evidence on the Role of Digital Technology in Shaping Attention and Cognitive Control in Children", *Front Psychol.*, vol. 12, pp. 1-22, 2021. <https://doi.org/10.3389/fpsyg.2021.611155>.
- [25] O. Konotop, O. Bykonja, O. Bondar, Y. Shevchenko and T. Korobeinikova "Effectiveness of generative learning strategies in independent study of English using mobile technologies", *Rev Eduweb.*, vol. 17, no. 3, pp. 160-181, 2023. <https://doi.org/10.46502/issn.1856-7576/2023.17.03.14>.
- [26] S. Harter "Self-perception profile for adolescents: Manual and questionnaires", Denver, CO: Univeristy of Denver, Department of Psychology, pp. 31-45. 2012 [Online]. Available: <https://www.apa.org/obesity-guideline/self-preception.pdf> Last Accessed Date 15 February 2024.
- [27] S. Guerin and M. Tatlow-Golden "How valid are measures of children's self-concept/self-esteem? Factors and content validity in three widely used scales", *Child Indic Res.*, vol. 12, pp. 1507-1528, 2019. <https://doi.org/10.1007/s12187-018-9576-x>.
- [28] H. Orlova "Relationship between self-concept and independent activity of junior schoolchildren: dynamics of development", *Theoretical and Methodical Problems of Children and Youth Educ.*, vol. 24, no. 2, pp. 38-55, 2020. <https://doi.org/10.32405/2308-3778-2020-24-2-38-55>.
- [29] C.R. Lykkegaard, H.S. Andersen, S. Wehberg, et al. "The association between childhood motor performance and developmental trajectories of sport participation over 5 years in Danish students aged 6-16-year-old", *Sci Rep.*, vol. 13, paper 4133, 2023. <https://doi.org/10.1038/s41598-023-31344-x>.
- [30] A. Mytnyk, O. Matvienko, A. Guraliuk, N. Mykhalchuk and E. Ivashkevych "The development of constructive interaction skill as a component of social success of junior pupil", presented at the Society. Integration. Education. Proceedings of the International Scientific Conference, vol. 2, pp. 387-401, 2021. <http://dx.doi.org/10.17770/sie2021vol2.6406>.
- [31] E. Schmid and V. Garrels "Parental involvement and educational success among vulnerable students in vocational education and training", *Educ Res.*, vol. 63,

- no. 4, pp. 456-473, 2021. <https://doi.org/10.1080/00131881.2021.1988672>.
- [32] K. Tamai, N. Matsumoto, A. Takeuchi, et al. "Sports participation and preterm birth: A nationwide birth cohort in Japan", *Pediatr Res.*, vol. 92, pp. 572–579, 2022. <https://doi.org/10.1038/s41390-021-01808-9>.
- [33] A.M. Vallance, J. Hebert, E. Jespersen, et al. "Childhood motor performance is increased by participation in organised sport: the CHAMPS Study-DK", *Sci Rep.*, vol. 9, paper 18920, 2019. <https://doi.org/10.1038/s41598-019-54879-4>.
- [34] I. Bartalis "Primary School Extracurricular Music Activities in Covasna and Harghita Counties", *Central Europ J Educat Res.*, vol. 3, no. 1, pp. 36–46, 2021. <https://doi.org/10.37441/cejcr/2021/3/1/9349>.
- [35] P. Buckley and P. Lee "The impact of extra-curricular activity on the student experience", *Active Learning in Higher Educ.*, vol. 22, no. 1, pp. 37-48, 2021. <https://doi.org/10.1177/1469787418808988>.
- [36] M. De Sisto, H. Afreen and D. Genevieve "Sense of belonging in second-year undergraduate students: the value of extra-curricular activities". *High Educ. Res. & Dev.*, vol. 41, pp. 1727-1742, 2021. <https://doi.org/10.1080/07294360.2021.1902951>.

Contribution of individual authors to the creation of a scientific article (ghostwriting policy)

We confirm that all Authors equally contributed in the present research, at all stages from the formulation of the problem to the final findings and solution.

Sources of funding for research presented in a scientific article or scientific article itself

No funding was received for conducting this study.

Conflicts of Interest

The authors have no conflicts of interest to declare that are relevant to the content of this article.

Creative Commons Attribution License 4.0 (Attribution 4.0 International, CC BY 4.0)

This article is published under the terms of the Creative Commons Attribution License 4.0

https://creativecommons.org/licenses/by/4.0/deed.en_US