

FORMATION OF STUDENTS' CREATIVITY POTENTIAL IN INTELLECTUAL SCHOOLS

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ABSTRACT

The educational system in general and teaching approaches in particular in Kazakhstani schools is shifting from traditional approach to student-centered approach. Although there are a few research studies conducted in the Kazakhstani context on different aspects of education, there is not any research found on the impact of the educational program or school curriculum on the creativity level of students in Kazakhstan. Thus, the main purpose of this research was to study the influences of educational program of the research site on improvement of the creativity potential of students in one of the experimental schools in Kazakhstan. The qualitative research was conducted within the research instruments such as semi-structured interviews, document analysis and classroom observations. The participants were 12 students of grades 7-12 and 12 teachers of various subjects. The research findings revealed that the structure of the school curriculum is effective for improving students' creativity skills. However, implementation of more flexibility is recommended for developing the students' creativity in a more effective way. Thus, the findings of the research suggest some recommendations for both curriculum developers and school administration to take into consideration the students' and teachers' voices for advancing the sections of school curriculum focused on creativity improvement. The study also makes recommendations for further studies on improving the creative thinking skills in secondary school context with a larger sample, using mixed-methods research design.

Keywords: Creativity, Creative Potential, Creative Thinking Skills

INTRODUCTION

Creative thinking skills start to be formed in the early stages of human development (Butler, Gotts and Quinsenberry, 1975). According to Torrance (1965), even small children express the first elements of creativity through their imagination. Kellog (1970) states that children in their early childhood, more precisely at the age of 3 or even earlier, start to draw spontaneous figures in the form of circle, rectangular that push them to understand and perceive the abstracts. Furthermore, it is a way how children start to express themselves as individuals (Jung, 2006). Another way of indicating creativity in early childhood is the use of productive skills, such as writing (drawing some graphs) and speaking (Kellog, 1970). Torrance (1962) supports the opinion of Jung (2006), stating that children's drawing is one of the main elements indicating the level of their creative thinking (Torrance, 1962).

Including creativity into educational policy documents is indication of the fact that the emphasis on creativity is not simply a matter of paying little attention to the concept

(Csikszentmihalyi, 1996; Hussain, 2004) but rather it is the action which was taken. O'Donnell and Micklethwaite (O'Donnell, 1999) revised the educational program documents of 16 countries, (developed countries such as American, European and East Asian), and identified the role of arts and creativity in the education sphere. According to their research, these countries include creativity at different levels of education. Some of these countries start including creativity into the context of education from early childhood up to higher education. For instance, Canada considers “creative thinking” as one of the most essential elements in learning process, while education in Kentucky, USA is based on improving students` creative thinking skills through inventing a novel, practical ideas or products within the learning context. In addition, Korean National Curriculum outlines an educated person as “healthy, independent, creative and moral”. The Government’s National Development Plan in Sweden claims that education should be helpful for students to develop their creativity potential both in Pre-School and Adult Education (1997). One of the essential goals of French schools is to develop in children the “taste for creation” while they study in lower secondary schools. Furthermore, primary schools in Germany and Netherlands put the special emphasis on developing “children’s creative abilities”. Here, one of the significant factors improving creativity potential is the relationship of a student with the society members, especially parents as nowadays fast development of technology is one of the reasons behind less interaction with people and more interaction with computers which negative influences children`s creativity improvement (Marfuga Absatovna Absatova et al., 2018).

Moreover, rapid development of technology and increase in the use of internet for ready answers results in the lack of originality, and, thus, the technology is to be blamed for lazy communication and for diminishing our creativity in any area. According to Guardian “in fact, the web has done a great deal to kill people’s creativity, from the use of emotion labels instead of words, to the proliferation of pre-determined functions to express our views (liking, sharing, and, in some cases, disliking). These new universals of human interaction promote efficient (but lazy) behaviors so that we can devote more time to consuming more content (p.112).

The above mentioned statements led us to research whether these natural creativity instincts are improved parallelly within the improvement of academic performance or academic knowledge. When children start to attend classes where the academic knowledge becomes the main focus and more important than the creativity skills, as it plays a crucial role in school standards, as well as shapes the schools` overall performance while rating the results of high-stake testing. In addition, it was significant to see whether the school curriculum in the experimental school supports the students to improve their creativity skills despite the fact that it is a new experimental platform within the selected students and selected staff where the academic performance of each student is highly significant and where much more attention is given to academic knowledge of students.

According to the western literature, creativity is the crucial factor, which improves students` cognitive skills as well. These researchers state that the creative thinking is the basis of the general thinking process. Consequently, it should be stated that the students require imaginative skills to improve their academic performance. Here, Runco (2009) claims that the creative thinking is not a single way of expressing himself or herself, but it is a holistic universal process which can be noticed through different kinds and forms based on the



students' individual skills (Runco, 2009). For instance, one student can better express his creative skills in the visual area, while the other one can express it better in the verbal area. Hence, it was important for us to study the students' creativity potential in the experimental school, where each student is gifted and unique as they have to undergo the selection process to enter the school.

Another reason for studying this particular area is the growing interest in the role of creativity in education as creative thinking is one of the factors, which can address many issues related to students' motivation or academic performance (Parkhurst, 1999). The reason for this case is that the creative potential is one of the crucial aspects, which might lead to not only high academic performance, but also economic achievement by coping with the increased competition throughout the globe. It is the case why the creativity should be used as the main focus in education within teaching and learning process (Poole, 1980). It is also important in inclusive education as there are different students with their unique skills and abilities in one classroom. Despite the fact that the education is changing currently in order to fulfill the needs and skills of each student, there is still a critique that the education is not effective enough for forming creative and original thinkers (Rogers, 1970).

Table 1: Key Features of Creativity Potential by Runco (2009) and Torrance (1962), and Jung (2006)

Common features of creativity potential	Imagination
	Perceiving abstracts
	Creative thinking
	Original thinking
	Unique skills

Source: Runco (2009) and Torrance (1962), and Jung (2006).

Furthermore, education is blamed for 'killing' the creativity rather than improving it because of the 'spoon-fed' approach and lack of strong and professional differentiation (Parnes, 1970). One of the reasons for such critiques is that the education is mainly focused on students' academic knowledge rather than creativity. Thus, educational achievement is the main focus in schools and institutions. However, currently the criteria depicting the educational success is being changed by valuing the role of creativity in teaching and learning process. Consequently, the school curriculum has the clear sections where the improvement of students' creativity potential is considered through the academic lessons, extracurricular activities and other additional events organized within the annual plan of the school such as concerts, round table discussions, seminars, sessions, meeting with celebrities and so on. Teachers in that school highly understand the importance and role of such events. However, there is no data whether these mentioned events influence students' level of creativity. Hence, it was important for us to study the influence of these curricular and extracurricular activities on development of students' creative thinking skills. Studying the structure and impact of such events is significant for further improvement of school curriculum. Therefore, the perception of students and teachers of the experimental school about the effect of school activities on the improvement level of creative thinking skills was investigated in this study.

Based on the analysis of the literature, a conceptual framework was developed. The suggested conceptual framework consists of the main characteristics of creativity potential and its reflection in the education process as my research is focused on investigating the creative thinking of students at the experimental school. The descriptions of creativity potential given in the conceptual framework is proposed by Arthur J. Cropley (2001). It is divided into two main sections depending on the level of the features of creativity potential: sublime creativity and everyday creativity. It was mentioned before, that teachers understand the term creativity in their own way and improve students' creativity potential in different ways for different purposes. However, it is significant that teachers meet the requirements of these levels in order to improve student creativity potential effectively and not to face any challenges and difficulties while improving it in their classrooms through different tasks and activities. Thus, in my research I analyzed how the research participants perceive, practice formative assessment in their classrooms, and what challenges they face while implementing it using the following conceptual framework.

Conceptual Framework

Table 2: Conceptual Framework. Adapted from “Creativity in Education and Learning”, by Arthur J. Cropley, 2001

Common features of creativity potential	Their characteristics
Sublime creativity	People achieving widespread professional or artistic acclaim or commercial success. Such products win awards like the Nobel Prize, the Booker Prize, the Archibald Prize or the Pulitzer Prize List of winners
Everyday creativity	People who will never produce anything novel, effective and ethical, i.e. the apparently paradoxical idea of creativity without acclaimed products Examples: knitting, flower growing, and others
Participants of creativity improvement process	Both teachers and students Peers Parents Curators, tutors
Implementation period of creativity improvement	Lessons, extracurricular activities, outside the class Either inside the classroom or outside
The ways how teacher adjust creativity practices	Through long-term, mid-term and short-term lesson plans School documents
Teacher-student interaction	All interactions are based on: Formal and informal roles
Motivation	Can be both extrinsic and intrinsic
Factors influencing to refine creativity practices	Commonly external factors

Source. “The practical implications of educational aims and contexts for formative assessment”, J.H. McMillan, 2010.



METHODS

This chapter presents the methodology and research design chosen for conducting this study on the creative potential students in one of the experimental schools in Kazakhstan. It also describes the sampling strategies and participants selected to address the main research question: How does the educational program of the school contributes to the development of students' creativity skills?

Research Design

The study employed a qualitative approach since it aimed at investigating the perceptions and practices of creativity skills within the curriculum framework through the in-depth exploration of the classroom experiences of creativity as well. Elliot and Eisner (1997) state that “qualitative inquiry can provide the double advantage of learning about schools and classrooms in ways that are useful for understanding other schools and classrooms and learning about individual classrooms and particular teachers in ways that are useful to them”, which is exactly the same with the objective of the current research (Eisner,1997). Furthermore, Elliot and Eisner (1997) claim that:

The qualitative study of particular classrooms and particular teachers in particular schools makes it possible to provide feedback to teachers that is fundamentally different from the kind of information that they are given in in-service education programs or through journal publications (Elliott, 1995).

Thus, the qualitative approach was selected for this study as we were interested in understanding in-depth the process of implementing creative thinking skills in one experimental school which is translating its best pedagogical experiences to other mainstream schools in Kazakhstan.

Research Site

The study was conducted at one experimental school in Kazakhstan, which is already implementing student-centered approach in teaching and learning processes. The research focused on teachers' and students' understanding and practice of improving creativity skills. To be more specific, there were two reasons for selecting this research site. The first reason can be clarified by the idea that the experimental school, which is implementing the world's best educational practices since 2013, is already disseminating its teaching and learning practices to other Kazakhstani mainstream schools. Thus, it was important for us to explore how the students of the experimental school are improving their creative thinking skills within the new educational program implemented in this school as they carry an essential role in sharing their practice and experience with their colleagues from the mainstream schools throughout Kazakhstan. The second reason for choosing this particular educational institution as the research site was that the experimental school is regarded to be convenient for the researcher because of its accessibility in terms of distance and time as well as its openness to any type of research which will contribute to the improvement of education.

Research Participants

The research participants and the sampling procedures employed in this study are described in this section. According to Maxwell (2013), the researcher's purpose is not only generalizing the findings to a bigger population by using larger sample, but the purpose is to explore the phenomenon comprehensively, analyze and interpret it accurately and relevantly (Maxwell,



1992). Furthermore, Patton claims that the sampling should not be considered as the number of participants, but as the in-depth understanding of received information (Patton, 1990).

The target population of this research was the students of Grade 7-12 and teachers of different subjects in an experimental school in Kazakhstan. The study employed purposeful sampling to explore how the students and teachers of this school understand and perceive creativity and how they practice it in their school in order to improve the level of creative thinking of students. As Emmel (2013) claims, the implementation of a purposeful sampling allows a researcher to receive an opportunity to reflect on his/her findings. Furthermore, a purposeful sampling is widely implemented in qualitative research for recognizing information-rich cases by using the restricted resources successfully and by choosing participants who are well-informed and experienced in the concerned topic. For these reasons, we used purposeful sampling and invited teachers of different departments and students of grades 7 to 12 to voluntarily participate in this research. After recruitment process, 12 teachers of different departments (1 teacher from each department) were selected whose work experience is 1 to 6 years in the experimental school and the students who have been studying at this school for 1 to 6 years (grade 7 to 12). While selecting the research participants, representation of both genders (male and female) and Grades from 7 to 12 was ensured.

Data collection instruments

Considering the nature of a qualitative approach which gives each research participant an opportunity to thoroughly explain his/her experience, the study included semi-structured interviews, observations and document analysis as data collection instruments. The semi-structured interviews allowed each research participant to share his/her own viewpoints on, and approaches to, the use of creative thinking skills in a detailed way while classroom observation and document analysis provided me an opportunity to study continuing practice of improving creativity in the participating classrooms.

Semi-structured interviews

The interview questions were initially structured to inquire about the approaches used by the teachers and school administration to improve the creativity skills of students. According to Gavora (2006), the semi-structured interview is considered to be more flexible and adaptive, taking into account the fact that the interviewer can create and avoid questions during the interview with the purpose of adjusting to the topic (Gavora, 2006). What is more, the semi-structured interviews are regarded to be suitable and used mainly with small groups to examine the specific situations since they provide deeper insight to perceptions and opinions of people. Consequently, this leads to more effective way of data collection process. Therefore, semi-structured interviews were implemented in the research as the study focuses on the particular group of teachers experiencing the practice of creativity in their classes. Furthermore, this research instrument provided the researchers with trustworthy relationships with the research participants which is one of the significant part of any study. The language of the interviews was selected according to the wishes of research participants as the research participants' mother tongue differed from each other (Kazakh, Russian, English).

Classroom observations

The researcher conducted one classroom observation for each teacher and one classroom observation for one student in order to examine ongoing practices of improving the creative thinking skills in the participating classrooms. The researcher conducted the classroom



observations in order to cover the following objectives: 1) to support or enhance interview data about the participants' perceptions of creativity and practices of improving creative thinking skills; 2) to see if the match and mismatch between research participants' perceptions and practices of improving the creativity potential; 3) to understand the creativity practices and challenges more profoundly. Furthermore, the observation provided me with an opportunity to reveal a real picture of classroom situations regarding the perception and practice of creativity improvement.

Document analysis

The next instrument of the research was document analysis. Within the document analysis, the researcher studied the school's policy, curriculum, course plan, as well as the mid-term and short-term lesson plans of interviewed teachers as these documents reflected the strategies and the ways of improving the students' creativity potential.

RESULTS

The focus was about teachers' and students' understanding of creativity and their perceptions on the impact of school activities and lessons on the improvement on creative thinking skills. According to the collected data, it was revealed that almost all research participants, students and teachers, have a positive attitude and perception about the use of creativity and the ways of its improvement in the experimental school.

Table 3: General Data about Research Participants

Group 1: More experienced teachers			
No	Participant	Time period of work and study in the experimental school	The areas of improving the creativity potential
1	Participant A	4,5 years	Lessons, extracurricular activities, research and project works
2	Participant B	4,5 years	Lessons, extracurricular activities, research and project works
3	Participant C	4 years	Lessons, extracurricular activities, research and project works
4	Participant D	4 years	Lessons, extracurricular activities, research and project works
5	Participant E	3 years	Lessons, extracurricular activities, research and project works
6	Participant F	3 years	Lessons, extracurricular activities, research and project works
Group 2: Less experienced teachers			
7	Participant G	2 years	Lessons, extracurricular activities
8	Participant H	2 years	Lessons, extracurricular activities
9	Participant I	1,5 years	Lessons, extracurricular activities
10	Participant G	1 year	Lessons, extracurricular activities
11	Participant K	Less than 1 year (novice teacher)	Lessons, extracurricular activities
12	Participant L	Less than 1 year (novice teacher)	Lessons, extracurricular activities

Group 3: Grade 7-9 students			
1	Participant A1	Up to 1 year	Inside and outside the classroom
2	Participant B1	Up to 1 year	Inside and outside the classroom
3	Participant C1	Up to 2 years	Inside and outside the classroom
4	Participant D1	Up to 2 years	Inside and outside the classroom
5	Participant E1	Up to 3 years	Inside and outside the classroom
6	Participant F1	Up to 3 years	Inside and outside the classroom
Group 4: Grade 10-12 students			
7	Participant G1	Up to 4 years	Inside and outside the classroom
8	Participant H1	Up to 4 years	Inside and outside the classroom
9	Participant I1	Up to 5 years	Inside and outside the classroom
10	Participant J1	Up to 5 years	Inside and outside the classroom
11	Participant K1	Up to 6 years	Inside and outside the classroom
12	Participant L1	Up to 6 years	Inside and outside the classroom

Commonly, the research participants' positive perception was revealed through their special emphasis on the positive impact of promoting creativity on students' motivation, enthusiasm, and learning. This can be evidenced by the participants' responses to the question about their general understanding about creativity, as some of them stated:

In my point of view, creativity is the only thing which makes both students and teachers feel happy, motivated and enthusiastic about the thing that they are teaching or learning. The lessons become more interesting when the teachers use creative methods and approaches such as learning the concepts through drawing, songs and imagination. And it usually happens in our school (Participant F).

Actually, creativity is everything happening in the class: the way we introduce the topic to students, the way we demonstrate our knowledge to students, the way we ask questions to students and many other things. Creativity is not just singing a song or dancing, it is a holistic concept which has many indicators. And many of its indicators are being demonstrated successfully by both teachers and students in our school (Participant C).



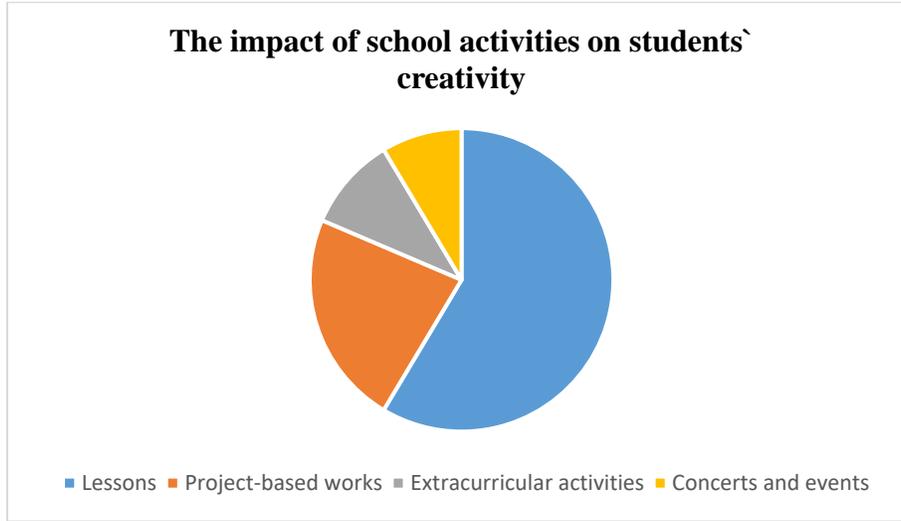


Diagram 1: The Impact Percentage of School Activities on Students` Creativity Potential

The above diagram presents the results of interview findings. According to research participants, both teachers and students, the lessons in the experimental school carry a big role in enhancing students` creativity skills. Research participants claim that most of their time in school spent on lessons, so the lesson is the main source of creativity potential. The creativity skills of students are improved through various tasks, problems, projects, role-plays, debates, games and other activities conducted during the lesson. Teachers and students shared their opinions on which strategies to implement so that they can effectively improve the creative potential of students:

Participant E. I believe that embrace creativity is a significant part of learning and teaching process. Because of it teachers need to create a classroom that recognizes creativity. Teachers may use different ways of solving a problem, or creative solutions to situations, which are met in the real life.

Participant A. In my lessons I try to use the most effective strategies. I am aware of the works of Torrance who offered the most effective ways of improving students` creativity potential. He considered meta-analysis as the most effective way to teach creativity. So I also try to implement it in my lessons.

Participant L. If we want to improve our creativity potential, then we must be aware during discussions. If you noticed some students ask more questions than the others. Of course, sometimes it is time consuming and sometimes it is boring to answer all the questions. However, as a teacher we need to involve such students in discussions and invite them separately to answer some of their questions so that their questions will not be left unanswered.

In order to see the connection and correlation between the answers of teachers and students as well as to investigate the topic from deep roots, the same question was asked to students. The purpose was to hear the students` voice and understand which of the strategies that teachers

implement for improving students' creativity potential is more effective according to students as they are the main focus of my research area.

Participant G1. In my point of view, when teachers give us any type of task during the lesson, no matter which subject it is, teachers should evaluate not only the final result, but the process of solving the problem should be evaluated too. For example, a student may not have a correct answer to one task, but the process when he wanted to find the answer and his some steps should be assessed. I believe that it will motivate us more and help us to become more creative.

Participant A1. I think that students should establish more freedom in class. Students should not be afraid to give one particular answer. They should use their creativity and answer the question in the way how she or he sees right.

Participant K1. Of course, creativity builds confidence. And when teachers improve our creativity, we start to take ownership of our own learning. Thus, teachers could give us more tasks to design a project, for example, or an exhibition of our final projects. While doing these works, students become so proud of their final work and they learn much information from the presentations of their peers.

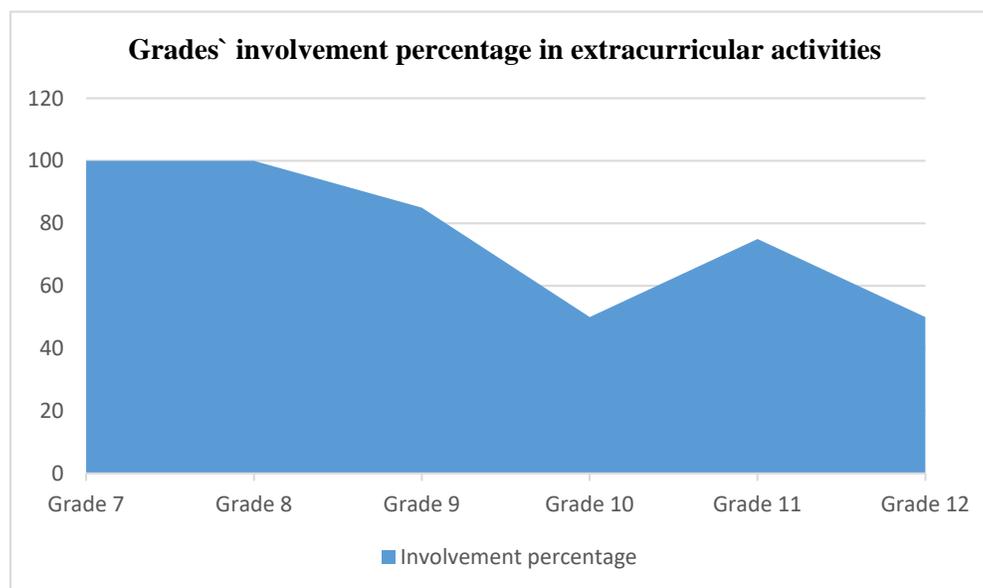


Diagram 2: The Grades' Involvement Percentage of School Students in Extracurricular Activities

The above diagram shows the involvement percentage of students of Grade 7-12 in the extracurricular activities involving various clubs such as foreign language clubs, pottery clubs, robotics, ICT designing clubs, concerts, meeting with well-known celebrities in the sphere of Arts, politics and science as well as self-governance activities. Self-governance contributes to the improvement of students' freedom to develop their talents and make decisions, while freedom helps students to become more responsible (Anara et al., 2018).

Participant C1. In my point of view, teachers should always encourage curiosity. They must remember those times when they were students and wonder what is important to



students. Because if they choose a material or task which is interesting to students then it will help us to like the subject that he or she teaches. Learning will become easier. So in other words I would say that creativity should be promoted by taking into account students' motivation and viewpoints.

However, it was revealed that despite the fact that all research participants have a positive perception about the creativity practices during lessons and extracurricular activities, some of them still have some complains about the way how the creativity should be improved:

It is good that the educational program of our school promotes the improvement of not only our academic knowledge, but it pays a special attention to the development of our creativity. Generally, it is achieved during the lesson by playing some games, drawing, singing songs or creating something new, making new designs, creating robots, working in the laboratory, conducting experiments and so on. Furthermore, we have an opportunity to organize a concert where every student can participate, we have a lot extracurricular and sport activities which really improve our creativity. However, sometimes it is too much, especially when we need to prepare for our exams, it becomes extremely difficult to manage our time. I would say that everything should be done and conducted with the agreement and opinion of students. For example, some activities that is aimed at improving creativity should be cancelled.

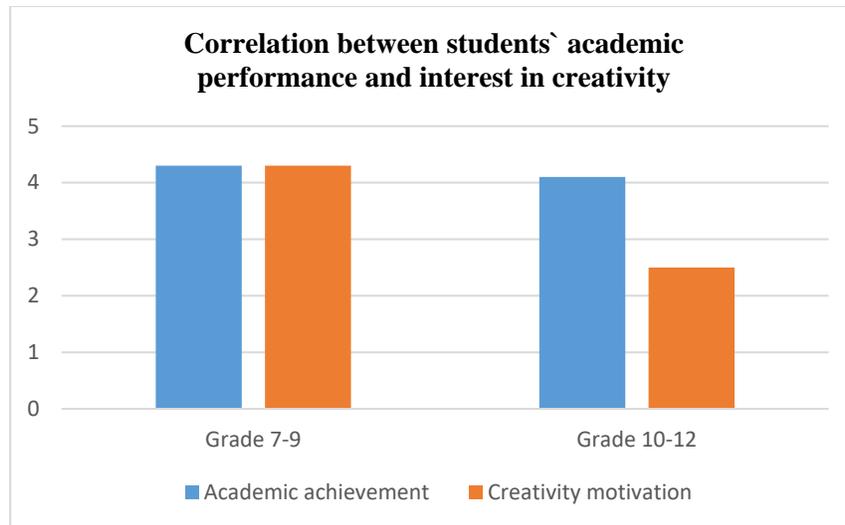


Diagram 3: The Correlation Difference in Students' Academic Performance and Creativity Interests

From here, one can understand that despite the fact that formation of the creativity skills of students in the intellectual school which is considered to be the experimental arena for the whole Kazakhstani schools is well-organized and well-structured, it needs further advancement taking into consideration not only the opinions of students, but also their individual skills, abilities and needs in order to avoid time-management problems, complains of students on the set deadlines and other issues. In general, creativity should not be considered

as only singing a song, dancing, drawing or painting, it is also how the students deal with tasks, how they analyze any situation and how they come to conclusion. Thus, the students' creativity is not only formed through the extracurricular activities such as clubs, games or round tables, but mainly it is formed during the lessons as well. It means that the teachers need to be professional and competent enough in order to improve students' creative thinking skills using the time allocated for lessons effectively.

CONCLUSION

To sum up, creativity should not be described as a specific skill, but rather everyone should understand that it is a holistic process, which may occur and be presented in various forms and shapes. Here, the role of teachers is highly significant as they are the ones who promote creativity during the school day and affect students' creativity after classes as well. It is a common problem and challenge for teachers to identify the students' creativity level and interest on time and improve it further as it will lead to a better formation of students' creativity skills according to their individual personalities and interest areas.

One of the most common research finding was that students face problems in time-management and overload caused by planned events in curriculum. These events are, actually, focused on improving students' creativity potential and take place in the form of clubs, student meetings, round tables, seminars, concerts, coaching, competitions, debates, TEDx, READx, and other sport events. Despite the fact that these events help students to improve themselves on different sides, there is a common complaint from students' side about the lack of flexibility in attending these activities. Students have to attend these events according to their interest or motivation, not by someone's order as taking part in such events by someone's force will not improve or form students' creativity but, on the contrary, it will lessen their motivation and interest in the particular area. Thus, it is highly significant to take into consideration both students' and teachers' voice while creating an annual plan of school and curriculum as it will provide students with more flexibility and sense of being heard.

Based on the above mentioned conclusions, the following recommendations are done:

First, there should be a close relationship and cooperation among student-teacher-parent-curator-student. This circle helps teachers be aware of the individualistic features, skills, abilities and interest areas more profoundly. It also gives a holistic picture of the students' creativity potential. Parents should play the key role in communicating with school by giving detailed and proper information about their children's interests and hobbies. This will help school community to better analyze the needs and abilities of each student. Thus, parents should be given more responsibility on students' development.

The next recommendation is to organize systematic workshops for teachers on forming students' creativity potential based on students' individual features. Although the teachers are aware of the significance of forming creativity potential in their classrooms, they have some challenges in their daily practices. The main reason behind this case is that teachers lack professional competence on identifying students' needs and development trajectory. Another reason is that some teachers do not perceive creativity as a holistic approach, by being focused on some elements of creativity such as games, songs and art. While teachers are able to create the above mentioned events and develop students' creativity, they commonly face challenges in improving their creativity within the academic lessons.



It was also revealed that generally most teacher training programs on creativity improvement contribute to the improvement of teachers' theoretical knowledge rather than practices. For instance, all teachers recognize the importance and role of creativity as well as advantages, but the research revealed that they have still difficulties while practicing it: identifying students' creativity level, interest area, talent and working on it. According to this statement, participants claim, more professional development sessions are theory-based and little opportunity is given to practice it in the real classroom. Thus, teachers believe that they need more practice-oriented courses to improve their practices on the formation of creativity.

Based on the findings of the present research, some suggestions can be made for further research. As the present study focused on formation of students' creativity at the intellectual schools only, the future studies may include a larger sample involving various schools such as primary and secondary schools in order to see contextual differences and factors impacting the formation of students' creativity potential.

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