




## **Eficacia del desarrollo del pensamiento crítico en las lecciones de literatura mundial en la escuela secundaria**

### **Effectiveness of the development of critical thinking in the lessons of world literature in secondary school**

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### **Resumen**

El objetivo del artículo es determinar las perspectivas de la literatura universal como materia para el desarrollo del pensamiento crítico de los estudiantes. Se utilizó un conjunto de métodos: prueba, conversación, observación, evaluación formativa y métodos estadísticos. La variable independiente de la evaluación formativa es un sistema metódicamente modificado de lecciones de literatura mundial. La variable dependiente es el pensamiento crítico. Las muestras se formaron entre estudiantes de décimo grado de las instituciones educativas generales y secundarias de Kyiv. Los resultados del estudio dan testimonio de la efectividad del método desarrollado para desarrollar el pensamiento crítico. Se registraron cambios cuantitativos positivos para todos los criterios estudiados: cognitivo, comunicativo, reflexivo. Los resultados del análisis cuantitativo se confirman con datos observacionales, que indican transformaciones cualitativas en la actividad y el comportamiento educativo de los estudiantes. La prevalencia de indicadores medios de pensamiento crítico al inicio del experimento indica el nivel insuficiente del fenómeno estudiado, lo que se explica por el predominio de métodos reproductivos de aprendizaje en el proceso educativo. Las perspectivas de investigación implican estudiar la efectividad de un programa de desarrollo con estudiantes de otros grupos de edad.

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**Palabras claves:** Pensamiento crítico, literatura, escuela Secundaria, evaluación formative, learning.

### **Abstract**

The aim of the article is to determine the prospects of the World Literature as the subject for the development of students' critical thinking. A set of methods was used: testing, conversation, observation, formative assessment, statistical methods. The independent variable of the formative assessment is a methodically modified system of World Literature lessons. The dependent variable is critical thinking. Samples were formed from among tenth-graders of the general and secondary educational institutions of Kyiv. The results of the study testify to the effectiveness of the developed method of developing critical thinking. Positive quantitative shifts were recorded for all studied criteria — cognitive, communicative, reflective. The results of the quantitative analysis are confirmed by observational data, which indicate qualitative transformations in the students' educational activity and behaviour. The prevalence of medium indicators of critical thinking at the beginning of the experiment indicates the insufficient level of the studied phenomenon, which is explained by the predominance of reproductive methods of learning in the educational process. Research prospects involve studying the effectiveness of a developmental programme with students of other age groups.

**Keywords:** Critical thinking, literature, secondary school, formative assessment, learning.

### **Introduction**

The development of critical thinking is one of the important goals of modern education (Hitchcock, 2018). This trend is determined by the general transformation of educational processes, which involves a transition from simple accumulation of information to meaningful learning and assimilation of knowledge (Benavides, 2021). The social significance of critical thinking is also determined by its importance as a condition for the professional development of modern specialists (Mackay-Castro et al., 2018). It was established that critical thinking is the basis of personal autonomy (Prieto-Galindo, 2018). The development of critical thinking skills is closely related to successful communication, leadership qualities, the effectiveness of teamwork, and an active social position (Živkovic, 2016). Their development requires a change in methodological approaches, which involves reducing the proportion of reproductive didactic methods (Madrid, 2018).

It should be noted that the studies on the development of critical thinking have intensified in recent decades both in the context of higher and secondary education. This situation is related to the understanding of the relevance of critical thinking for the comprehensive personal and professional development of a person. It is maintained that the purposeful development of critical

thinking in general secondary education contributes to the development of attentiveness and reflection (Mindiola-Molina & Castro-Mendoza, 2021). The study of critical thinking in the context of different subjects in secondary education is relevant, which determines the practical significance of the study of this issue.

The problem of defining the concept of “critical thinking” is quite relevant in psychological and pedagogical science. Based on the analysis of theoretical literature, Lai (2011) offers seven basic definitions of the phenomenon, which is obviously not a limit. Analysing the mentioned definitions, it is possible to single out a number of characteristics of this cognitive process: purposefulness; reasoning; reasonable doubt; connection with reflection; concentration on true information criteria; sensitivity to the context, that is, appropriateness to a certain situation or method of action; self-regulation; accuracy and adequacy. Hitchcock (2018) distinguished a number of successive stages in critical thinking: record of a certain aspect of reality; uncertainty because of the discovery of a contradiction; astonishment; forecasting possible solutions to the problem; formulation of the hypothesis; use of existing knowledge; experimentation; turning to other information sources; analysis of arguments; assessment; decision making (Tsai, 2019) provides data on the connection between critical and creative thinking.

Specific development programmes of the phenomenon under study deserve special attention. Heard et al. (2020) single out the following areas of critical thinking development: accumulation of new knowledge; developing the ability to reason; developing the ability to make decisions. All three directions should be implemented in accordance with the criteria of logic, argumentation, and meaningfulness. Other studies also emphasize the development of critical thinking in the course of activities. In particular, Vong and Kaewurai (2017) distinguished the following stages of the development process: initiation of specific actions, fixation of the problem, study of available data, discussion and evaluation of results, determination of a specific strategy for solving the problem and its demonstration. Cargas et al. (2017) made attempts to create a universal method of developing critical thinking in the educational process.

According to Rivadeneira et al. (2019), an important methodical and practical aspect is the constant diagnostics of the level of learners’ critical thinking, which is a condition for optimizing the developmental opportunities of the pedagogical process. It is obvious that teachers play a key role in the development of critical thinking. Le and Hockey (2022) state that teachers and lecturers

do not have the right to change the defined curricula, but they can choose methodical approaches aimed at stimulating the prospects of cognitive development that the subject offers.

Researchers identified a number of difficulties associated with the development of critical thinking in the educational process. In particular, Chikiwa and Schäfer (2018) conducted studies in South Africa and stated the actual lack of purposeful activities for the development of critical thinking in Mathematics lessons in multilingual classes. Ramada and Solaz-Portoles (2021) also doubt the positive impact of the studied phenomenon on solving academic problems. In this way, the analysis of theoretical literature proved that the problem of critical thinking development in educational institutions is being widely studied. At the same time, there is lack of studies on the critical thinking development in the context of educational subjects, in particular, World Literature. Relevant research is also carried out in the context of different cultures, so it is important to implement the study of developmental methods in a particular state.

In light of the above, the aim of the article is to determine the prospects of the World Literature as the subject for the development of students' critical thinking. The research objectives are: 1) analyse the previous studies on the problem of students' critical thinking development in general and secondary educational institutions; 2) determine the indicators of the students' critical thinking level in general and secondary education institutions; and 3) establish the conditions for the development of critical thinking in the World Literature lessons.

## **Methodology**

### ***Design***

The study was planned and conducted from the beginning of July 2021 to February 2022. The research stages are analysed below. Theoretical stage (June-July 2022) involved the analysis of theoretical literature and courseware with the aim of identifying basic concepts and general research strategy. In particular, the hypothesis about the effectiveness of the implementation of the method of critical thinking development in the World Literature lessons were defined, the methodology and methods of further research were substantiated, the criteria and indicators of the studied phenomenon were selected.

Organizational stage (August 2022) involved planning of the research, selection of empirical methods, sampling, settlement of administrative issues of research, obtaining

respondents' consent. Determination of the primary level of critical thinking (September 2022) provided for the collection and processing of results through valid and reliable diagnostic tools.

The experimental stage (September 2021 - January 2022) involved the implementation of the methodology for critical thinking development in the World Literature lessons. The changes that occurred in the course of the experimental (end of January - beginning of February 2022) were determined through the repeated use of diagnostic methods. Also, the stage of quantitative and qualitative analysis of the obtained data (February 2022) provided for data processing and drawing conclusions.

### ***Participants***

The research was carried out by the authors of the article and involved teaching staff in compliance with all didactic, methodical and psychological norms. Samples were formed from among tenth-graders of the general and secondary educational institutions of Kyiv. The sample's primary selection criteria were the basic knowledge of world literature, students' interest in research, and parental consent. Two samples were formed — control (157 people — 88 girls and 69 boys) and experimental (166 people — 93 girls and 73 boys). Even gender distribution of the sample was maintained.

### ***Instruments***

A complex of methods was used: general theoretical; testing, conversation, observation, formative assessment, statistical methods. General theoretical methods – analysis, synthesis, generalization, systematization of theoretical material. The criteria for critical thinking were identified during the analysis of the information.

*Cognitive criterion* reflects the phenomenon of critical thinking, its intellectual mechanisms. *Reflective criterion* is the ability to self-analyse when fulfilling educational, professional, and personal tasks, which is a mandatory component of critical thinking. *Communicative criterion* is the level of realization of critical thinking mechanisms in interpersonal and business (pedagogical) communication. There were three levels of the criteria: high, medium and low, which were distinguished with an orientation to the scales of the corresponding methods.

*Testing* was used to determine the level of cognitive and reflective criteria of critical thinking. In particular, an adapted Starkey Critical Thinking Test was used to diagnose the

cognitive criterion. The Budassi Test was used to determine the level of the reflective criterion, which allows studying the manifestations of self-assessment of an individual. The Critical Thinking Test meets the validity requirements, which is substantiated by relevant studies (Lutsenko, 2014). The validity of the Budassi Test was verified through peer review by specialists in the psychological field.

The *conversation* is aimed at determining the communicative criterion of critical thinking. The capabilities of learners regarding the argumentation of their own opinion, independent thinking, the ability to engage in a full discussion, and mastery of persuasive methods were determined in the course of free communication. The conversation was conducted both during lessons and in extracurricular time.

Finally, *observation* enabled identifying the peculiarities of the behaviour of the subjects during the experiment. The main observation criteria were the level of motivation for educational activities, the productivity of analytical thinking, the ability to argue one's own opinion, the productivity of memory, and the quality of reflection.

### ***Data collection***

One of the main points of the experiment was the opportunity to argue the position of a literary character, which contradicted the traditional interpretation of literary criticism. So, the ability to critically evaluate even the reputable opinions was stimulated. At the same time, it was emphasized that the analysis of the characters' actions during the lesson should be based on a clear system of criteria. The experiment involved the flipped classroom method, which proved to be quite effective in the development of critical thinking (Hasanuddin et al., 2022). The lesson necessarily ended with reflection in oral or written form. That is, the experimental programme was based on four main positions: ensuring emotional comfort during the lesson, supporting cognitive interest, forming criticality and reasoning of the thinking process, developing reflection. Classes were held remotely through the Zoom video platform because of imposed quarantine restrictions.

### ***Analysis of data***

Statistical methods and percentage analysis were used, as the Kolmogorov-Smirnov test, Student's t-test. The use of these tools allows you to check the effectiveness of experimental exposure. Data analysis was carried out in SPSS.22.

***Ethical criteria***

The participants’ consent was an important aspect of the research, which resolved the ethical contradictions of the scientific research. Since the research participants are minors, consent was obtained from their parents. In this document, the purpose and procedure of the research, obligations and rights of the parties, and guarantees of confidentiality of individual research data were recorded. The content of the methods used do not interfere with the respect and dignity of the research participants, which is confirmed by the opinions of experts — teachers and psychologists.

**Results**

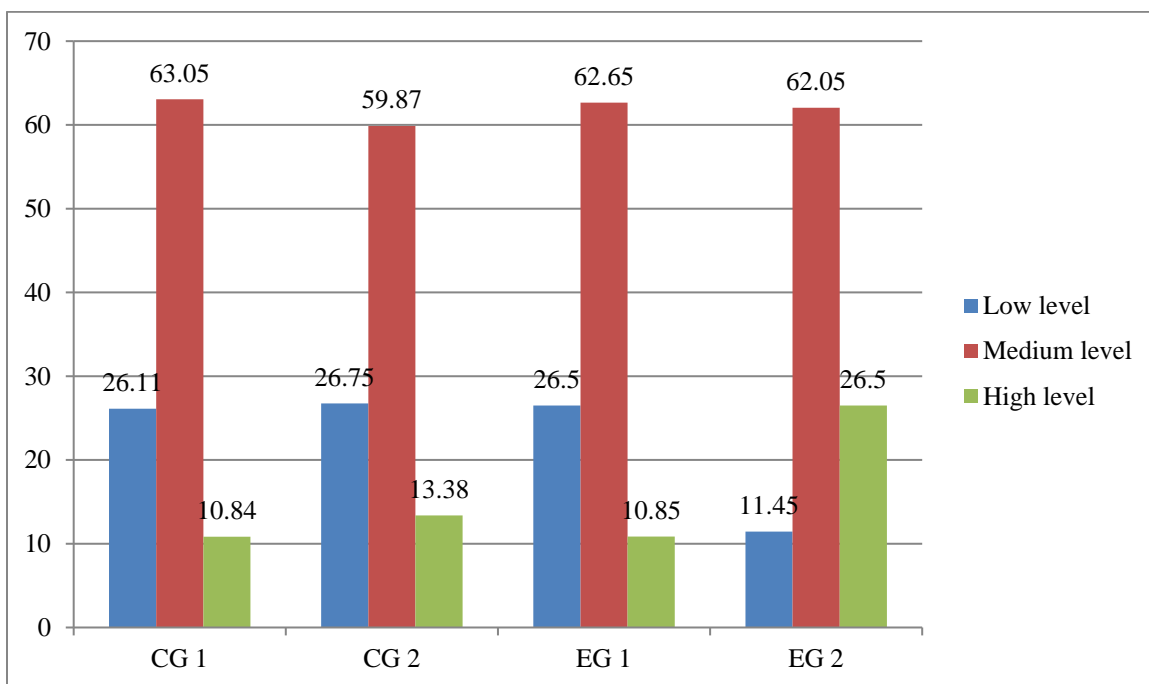
The results of the experiment are presented in Table 1 as percentage trends. The analysis of the results of the primary section showed that the percentage distribution of indicators for each investigated criterion in both groups is similar. The dynamics of each studied criterion of critical thinking were considered below. Table 1 presents the summarized results of the quantitative analysis.

**Table 1**

*Changes in the levels of critical thinking criteria under the influence of an experimental programme*

Components of professional competence	Development levels	Number of subjects							
		Control group				Experimental group			
		Before the experiment		After the experiment		Before the experiment		After the experiment	
		%	Number	%	Number	%	Number	%	Number
Cognitive	Low	26.11	41	26.75	42	26.5	44	11.45	19
	Medium	63.05	99	59.87	94	62.65	104	62.05	103
	High	10.84	17	13.38	21	10.85	18	26.5	44
Communicative	Low	32.48	51	26.11	41	27.1	45	13.25	22
	Medium	40.13	63	43.95	69	44.58	74	36.75	61
	High	27.39	43	29.94	47	28.32	47	50	83
Reflective	Low	21.66	34	19.75	31	15.66	26	10.85	18
	Medium	68.79	108	66.87	105	71.69	119	60.83	101
	High	9.55	15	13.38	21	12.65	21	28.32	47

The primary diagnostic test revealed the prevalence of medium indicators of the cognitive criterion of critical thinking — more than 60% of the respondents of both groups (Figure 1). Low values of the component were diagnosed in almost a third of the students surveyed. High values were recorded in about ten percent of learners in both samples. That is, we can talk about the lack of clearly developed critical thinking among senior schoolers students. No significant changes were diagnosed in the control group after the experimental programme — a high level was diagnosed in only four people. A repeated empirical test in the experimental group showed an overall decrease in the low level and an increase in the high level by 15.05%. Quantitative indicators of the medium level did not change during the experimental training. Consequently, cognitive manifestations of critical thinking increased after the introduction of specialized programme in the World Literature lessons.

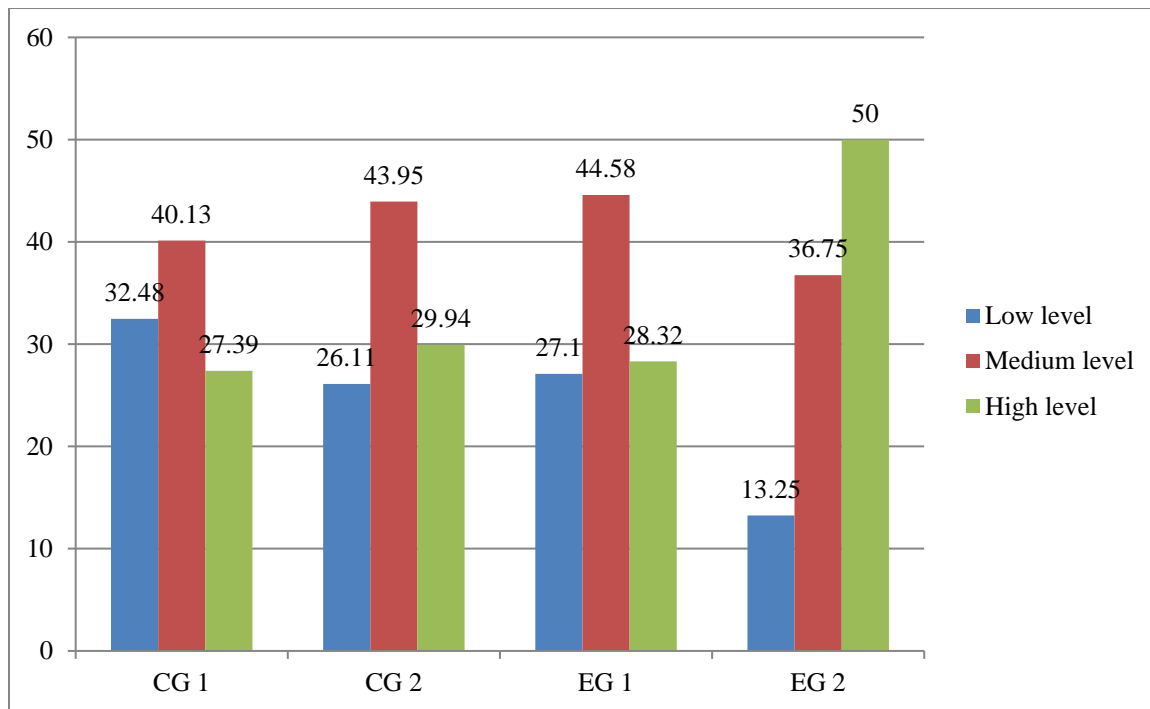


**Figure 1.** Changes in the cognitive criterion of critical thinking during the experiment

The primary and secondary diagnostics of the communicative revealed specific trends in its manifestation (Figure 2). In particular, an almost even distribution of persons with high and low levels of the investigated criterion was diagnosed before the experiment. The percentage of people with a medium level of the component was approximately 40%. No significant changes were observed in the control group after the experimental programme. In the experimental group, the

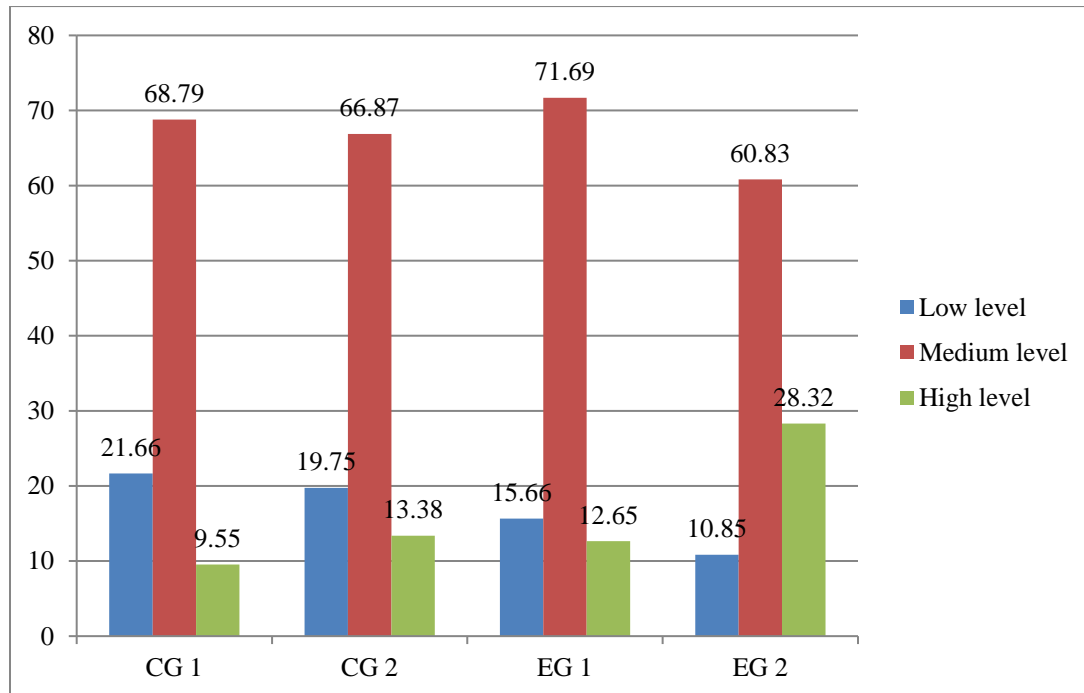


second empirical test showed a decreased percentage of students with a low level by 13.85%, and an increased share of individuals with a high level by 21.68%. The number of students with medium levels of the studied criterion decreased by 7.83%. In general, the dynamics of the communicative criterion of critical thinking were more positive than the trends of cognitive manifestations.



**Figure 2.** Changes in the communicative criterion of critical thinking during the experiment

It was established that medium indicators of the reflective criterion of critical thinking prevail — 70% of the subjects — at the beginning of the study (Figure 3). People with low and high levels distributed approximately in the proportion of 20% to 10%. The trends in the control group did not change significantly after the experiment. In the experimental group, an increase of 15.67% was recorded among students with a high level of reflective component. Indicators of the medium level decreased by about 10%, and the low level — by 5%. In general, the recorded shifts of the reflective criterion of critical thinking were not as significant as the trends of the previous components.



**Figure 3.** Changes in the reflective criterion of critical thinking during the experiment

Although the results of the analysis of percentage trends confirm the thesis about the effectiveness of the developed method of developing critical thinking in the World Literature lessons, the data need to be clarified by using mathematical statistics methods, namely the Student's t-test (Table 2). The appropriateness of using Student's t-test is substantiated by the calculation of the Kolmogorov-Smirnov test, which demonstrated the correspondence of the studied statistical series to the normal distribution.

Analysis of statistical data revealed no significant changes in all studied components in the control group. The experimental sample demonstrated significant shifts in all the studied criteria of critical thinking — cognitive, communicative, reflective (significance of changes at  $p=0.05$ ). The obtained results of the statistical analysis prove the effectiveness of the developed experimental programme. However, the system of classes needs to be improved, since no coefficient of the Student's t-test at the significance level of  $p=0.01$  was found.

**Table 2**

*The values for the Student's t-test of the critical thinking components of students*

<b>Professional competence</b>	<b>Student's t-test</b>	
	Control group	Experimental group
Cognitive	1.058	1.988*
Communicative	1.198	2.012*
Reflective	1.223	1.975*

Additional information about the manifestation of critical thinking in the World Literature Lessons can be provided by the results of observing the peculiarities of student behaviour during the experiment. In particular, a number of types of students' cognitive and educational activities were identified:

1. Indifferent, unmotivated — students who are not interested in cognitive activity. They participated in didactic games without interest. Reproductive responses without analysis and critical approach are dominant. It should be noted that the transformation of such activity to more productive activity was recorded in the experimental group, but not in all cases. Sometimes aggressive reactions of such students towards classmates were observed. About 30% of such students were recorded during the research.

2. Superior, ironic — students who have analytical abilities and critical thinking skills, but have inflated self-esteem. They reluctantly complete assignments, often engage in unreasonable discussions with the teacher, show passive aggression. The level of critical thinking is insufficient, which the learners try to compensate for with superior interaction. The share of such children is about 20%. The behavioural strategy did not undergo significant changes during the experiment.

3. Analytical, insecure — such students have a high level of critical thinking in the absence of sufficient social interaction skills. These young men and women are quite intelligent, they know how to think logically, but they cannot argue their opinion during communication. The work was carried out with such students, which involved intensifying their participation in interactive games, teamwork, and brainstorming. The share of such persons was about 50% at the beginning of the study, while it was about 80% at the end. The selected typology opens up opportunities to optimize the developed training programme.

## Discussion

The results of the study prove the effectiveness of the developed method of developing critical thinking in the World Literature lessons. Positive quantitative shifts were recorded on all studied criteria — cognitive, communicative, reflective. The results of the quantitative analysis are confirmed by observational data, which indicate qualitative transformations in the educational activity and behaviour of students. Predominance of medium indicators of critical thinking at the beginning of the experiment indicates insufficient level of the studied phenomenon. This situation can be explained by the unfavourable specific conditions of the pedagogical process and the general traditions of domestic education, which determine the trend towards reproductive methods of education. The insufficient development of the reflective component is explained by the age characteristics of the subjects, in particular, the turning points in the formation of self-awareness, the formation of life plans, and the search for the meaning of life.

The revealed contradictions of the obtained results with the conclusions of other researchers are analysed below. The implementation of our programme calls into question the creation of a universal method of critical thinking development. Regardless of the general algorithm, the described method (Cargas et al., 2017) must be adapted to the needs of a specific subject. In the process of observation and data analysis, the positive influence of game elements on critical thinking development was confirmed. At the same time, there are studies denying the effectiveness of such an influence (Jodoi et al., 2021). The difference in results can be explained by the fact that the mentioned research deals with the gamification of mobile developmental applications, while our research deals with the traditional educational process. The use of the flipped classroom method did not demonstrate the proper effect, which contradicts the results of other researchers (Hasanuddin et al., 2022). This situation can be explained by insufficient level of students' independent work skills, which should be taken into account in further research.

Researchers Ramada and Solaz-Portoles (2021) came to generalizations about the lack of positive influence of critical thinking on solving academic problems, but emphasized the conditional representativeness of the research sample, since its number was small. The relationship between critical and creative thinking is not unambiguous — these processes can be in antagonism. This statement contradicts the findings of other researchers (Tsai, 2019).

After conducting the research, we agree with the conclusions of Rivadeneira et al. (2019) regarding the need for continuous monitoring of the students' critical thinking. The effectiveness

of group educational work was also confirmed (Erdogan, 2019). It should be, however, noted that this form of educational work involves constant intervention with the teacher's activity aimed at maintaining the social and psychological atmosphere and levelling conflicts.

In general, the formative influence corresponded to three phases of critical thinking — actualization of knowledge, comprehension, reflection (Yurchak, 2020). A promising direction of optimization of the developed programme is the clear coordination of the teacher's actions and the rearing practices of the learner's family members (Uribe-Enciso et al, 2017). Foka (2020) states that critical thinking develops in the course of analysing a work of art, comparing and evaluating the actions of characters, and arguing behaviour. Although these findings apply to students of higher educational institutions, these considerations are confirmed in the context of our study.

The aim was achieved and the research objectives were fulfilled in the article. The research hypothesis was confirmed. The positive dynamics of the cognitive, communicative and reflective criterion of critical thinking when implementing the developed programme in the World Literature lessons were revealed. The obtained results have practical significance and can be used by teachers to increase the developmental potential of general and secondary education. It is appropriate to hold seminars and round tables to discuss the results of the research. Further research should be focused on testing the effectiveness of the developmental programme with learners of other age groups.

### ***Limitations***

It is advisable to expand the age and territorial range of the sample to obtain more reliable results. It is also advisable to consider the performance of the programme implemented in direct interaction. It should be noted that the described programme was implemented before the beginning of the Russian-Ukrainian war.

### **Conclusions**

The problem of critical thinking development is very relevant for modern pedagogical science, since its effective solution is a guarantee not only of a comprehensive personal development, but also of social progress. A fairly large number of publications provide research on this issue. In this context, the subject World Literature is promising, as it has wide opportunities for comprehensive analysis of events, arguments of one's own opinion, a wide range of material

for critical evaluation. So, the research topic is relevant from a theoretical and practical points of view.

It was found that medium indicators of cognitive, communicative and reflective criteria of critical thinking dominated at the beginning of the experiment. The reflexive criterion was the least developed, which is explained by the age characteristics of the students. The methodology for critical thinking development in the World Literature lessons was built on the following principles: providing emotional comfort, supporting cognitive interest, developing criticality and argumentation of the thinking process, and developing reflection. The obtained results can be discussed at seminars, round tables and used to optimize the educational process. Prospects for further research involve studying the effectiveness of a developmental programme with students of other age periods.

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