

## RESEARCH DESIGN AND METHODOLOGY

*Ruziev Khusniddin Bakhritdinovich*

*Termiz State University*

*Teacher of the department of English language and literature*

**Abstract:** This article deal with researching design and methodology. Different types of research design and methods to discuss and analyze in this article.

**Key words:** Objectives of Research, hypothesis, Sample group and content, methods of research.

We consider the process of critical thinking learning on the basis of pedagogical objectives taxonomy which was developed by a group of American psychologists under the leadership of Bloom (1956). According to Bloom’s taxonomy, the educational objectives are divided into three spheres: cognitive, affective and psychomotor. The concept of taxonomy includes classification and systematization of the items situated gradually according to the rising complexity. So, the following chain can be presented: knowledge – comprehension – application – analysis – synthesis – evaluation. In modern consideration it has the view of the levels: remembering, understanding, applying, analyzing, evaluating, and creating. Namely these levels refer to critical thinking or thinking of a higher order. They can be realized while working with the text using block-schemes which contribute to its deeper understanding and more effective following representation of the information being analyzed.

**Purposes and Objectives of Research:** Our study is aimed at confirming the rising efficiency of textual information representation at ESP teaching through activation of thinking processes (classification, analysis, synthesis and evaluation) on the basis of the block-schemes construction.

**Hypothesis:** The hypothesis of our study is that in the teaching process we realize the model of text understanding with the help of block schemes which are constructed with account of Bloom’s taxonomy, and the use of them leads to the rising efficiency of the learning process due to the development critical thinking of learners.

The understanding of any text has some phases: identification, assimilation and accommodation. Identification is a process of comparison the information developed in the text with the knowledge the learners have already gained. Assimilation is thought as the acquisition of some parts of the text which are the most important. Accommodation is considered as the application of new knowledge taken out of the text to a new situation. The processes mentioned above are inherent for learners’ critical thinking in the process of text perception. And in these phases the chain of Bloom’s taxonomy is realized:

- Knowledge. The acquisition of professional term system while reading the text and making active vocabulary before the block-schemes construction.

- Comprehension. It implies the work with authentic texts of professional interest and the process of this material information value understanding. On the basis of work with professional terms in English we can start to discuss texts and to form the basic skills which are necessary for critical thinking development.

- Application. The formulation of the basic questions developed in the text, classification of the problems and these results using while representing and discussing the text are implied on this stage.

- Analysis. The main ideas of the text are classified and the block-schemes are constructed.

- Synthesis. Having analyzed the material presented in the text, the students should express their opinion, grounded it on the valid arguments. At this stage the learners must demonstrate their skills to establish cause-and-effect relations, to compare different points of view, to agree or disagree with some of them and to formulate their own argumentative conclusions.

- Evaluation. At this stage after discussion the students have a possibility to evaluate their participation in the course of work with the text. It allows revealing the reflexive correction of students' activity for the future learning.

**Sample group and content:** The experiment was carried out in groups of students (62 participants) who studied at the Institute of Biology at National Research Tomsk State University. The experimental group (EG) consisted of 32 students, and in the control group (CG) there were 30 students. In class activities the texts of special interest for these students were used, and they were connected with the problems in ecology, zoology, genetics and morphology of plants.

**Methods of research:** In order to confirm the hypothesis and reach the objectives of the study we used the following methods and research tools: systematic observation; knowledge test; psycho-pedagogical experiment; and in order to interpret the results, we used mathematical-statistic methods (T-criterion of Student). We made a conclusion after the experiment about the following correlations: between using block-schemes for text analysis and efficiency of learning; between understanding the main ideas of the text, their classification and analysis and the improvement of text representation; between using block-schemes and making easier the understanding of the problems being discussed. In the organization of class activities we systematically used block-schemes to activate mental abilities of students.

**Implications and Further Suggestions for Research:** Critical thinking is believed to have an enormous effect on students' classroom engagement. As mentioned above, according to Dewey (1933), the more the students practice thinking critically,

the more successful they are in terms of academic achievements because they can decide more rationally, and their problems can be addressed more sensibly. Attention should be paid that this study is of great significance for those people who are engaged in the learning process including those devising curriculums, develop materials, teachers, and learners. Critical thinking is a skill that should be developed in learners so that they would compare and contrast ideas, and as a result, decide wisely and accomplish what they have planned for. Accordingly, opportunities must be provided by the educators to provide a learning environment in which autonomous learning, active engagement, reflection on learners’ learning process, and L2 advancement are emphasized, for example, task-based activities.

Additionally, further studies can be done to find more about the variables in this study. With regard to various age groups, the understanding of critical thinking might be different. Teenagers are said to start thinking critically and hypothetically; however, undoubtedly there is a big difference between what can be perceived about critical thinking by teenagers and adolescents in the educational contexts. Consequently, how different levels of critical thinking can be conceptualized in the learning context is one of the studies that can be conducted in the future.

Secondly, teachers’ success and well-being are also tremendously affected by the way they think. Therefore, from this point of view, a study can be conducted in the future so as to find the correlation between teachers’ critical thinking and other aspects of their lives. The reason why this study should be carried out is that considering the L2 environment, students’ way of thinking is impacted by how they are treated by their teachers. Teachers are supposed to equip students with techniques through which the learning process will be facilitated and students’ creativity will be boosted, therefore, it is what helps them to be critical thinkers both in the classroom context and out of it. Another line of research that is worth being done is that diverse activities that can enhance learners’ ability of critical thinking should be categorized based on learners’ characters. In a modern educational world where individual differences are emphasized, classroom activities should be classified, regarding the learning differences of the learners. Therefore, according to Birjandi and Bagherkazemi (2010); Vdovina and Gaibisso (2013), and Li and Liu (2021), teachers’ critical thinking ability play a vital role in how students are engaged in the class.

For the control over the students’ activity in their work with the text according to the realization of Bloom’s taxonomy parameters with the help of block-schemes construction, we made 6 pretests and post-tests which were taken from the system of TOEFL. These tests included the tasks for the texts reading and comprehension, which were realized through multiple choice tests (20 questions and statements) for each text. The experimental teaching was carried out during two terms (8 months).

The students of both experimental and control groups showed an approximately similar level of the text comprehension while making pretest at the initial stage of the experiment. It confirmed the similar skills of students in EG and CG for working with texts. After implementation of block-schemes for the information of professionally oriented texts analysis and then the synthesis and representation of this information in class activities using the block-schemes, the students of EG revealed better results in comparison with those shown by the students of CG.

The value of T-criterion gives evidence of the relevance in difference and of the obtained results validity. It confirms our hypothesis that the block-schemes application while analyzing the professionally oriented texts allows increasing the efficiency of teaching due to the development of students' skills to analyze, classify and then to synthesize the textual material. The students of EG who worked with texts on the basis of block-schemes application, showed higher results while making control tests because, in our opinion, the realization of the text comprehension model was realized at the stages which correspond to Bloom's taxonomy: knowledge – comprehension – application – analysis – synthesis – evaluation. This fact allowed students to represent the information systematically, with reliance on distinguished main ideas of the text, to represent argumentatively the reports according to the problems of the text.

#### REFERENCES:

1. Anderson, L. W., & Krathwohl, D. R. (2001). A taxonomy for learning, teaching and assessing: A revision of Bloom's Taxonomy of educational objectives. Complete edition, New York, Longman.
2. Bloom, B. S. (1956). Taxonomy of Educational Objectives: The Classification of Educational Goals. Susan Fa uer Company, Inc.
3. Cluster, D. (2001). What is critical thinking? International journal about thinking development through reading and writing, Peremena, 4, 15 –18.
4. Dewey, J. (2004). How we think. Kessinger Publishing.
5. Mogonea, F-R., & Mogonea, F. (2014). The Constructivist teaching and the optimization of learning through cognitive maps, Procedia Social and Behavioral Sciences, 128, 164 – 168.
6. Фарманов Г. Х. Ритмико-интонационное оформление английской речи // Актуальные проблемы гуманитарных и естественных наук. – 2020, С. 93-95 GALAXY INTERNATIONAL INTERDISCIPLINARY RESEARCH JOURNAL (GIIRJ)ISSN (E): 2347-6915 Vol. 11, Issue 12, December (2023) 519
7. Фарманов Г. Х. Активизация мыслительной деятельности учащихся при проверке домашнего задания // Вопросы педагогики. – 2018, С. 96-98.
8. . Фарманов Г. Х. Основные тенденции развития систем образования в мировой педагогической практике // Вопросы педагогики. – 2017, С. 69-71.

9. Farmanov, G. X. (2020). The importance of using games in teaching English to young children. *Актуальные научные исследования в современном мире*, (11-12), 11-13.
10. . FARMANOV, G. X., & XURRAMOVA, D. X. (2019). The main techniques of teaching different types of pronunciation in efl classes. *Наука среди нас*, (5), 16-23
11. . Farmanov, G., & Shukhrat, T. (2021). THE FACTORS THAT ARE IMPORTANT FOR EFFECTIVE PRONUNCIATION LEARNING. *InterConf*.
12. .Farmanov Gayrat Khujakulovich. Practical ways and examples of Pragmatics. *American Journal of Pedagogical and Educational Research* ISSN (E): 2832-9791| Volume 19, | December, 2023 page 106 [www.americanjournal.org](http://www.americanjournal.org)
13. Рузиев Х. Б. Возможности уроков английского языка в формировании коммуникативных навыков у младших школьников // *Актуальные проблемы гуманитарных и естественных наук*. – 2020, С. 125-128.
14. . Рузиев Х. Б. Основное значение билингвализма при изучении языка // *Развитие и актуальные вопросы современной науки*. – 2018, С. 101-104.
15. Рузиев Х. Б. Употребление вопросного и вопросительного предложения в устной речи в английском языке // *Развитие и актуальные вопросы современной науки*. – 2018, С. 69-73.
16. Рузиев Х. Б. Сравнение естественных и учебных настроек для изучения языка // *Наука среди нас*. – 2018, С. 314-318.
17. Рузиев Х. Б. Некоторые советы по использованию диалогов в устной речи // *Наука среди нас*. – 2018, С. 275-278.
18. Ruziev K. B Semantic analysis of the words of value and respect in English and Uzbek // *In Человекознание*. – 2018, pp. 40-41.