

The Development of Critical Thinking as the Primary Goal of the Educational Process

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ABSTRACT

This study examines the different approaches to integrate critical thinking into schooling. The study emphasises critical thinking's role in student intellectual progress and flexibility. Students must think critically to assess information, examine several perspectives, and make educated decisions in an ever-changing educational environment. Critical thinking in the classroom can improve student learning and prepare them for future challenges. This paper gives a complete foundation for applying this method. Due to the rising complexity of the world's concerns, critical thinking education is needed more than ever. Critical thinking may transform the classroom, creating well-versed, creative, and ethically upright students. This study aims to demonstrate how critical thinking can do this. Critical thinking is essential in science, technology, the humanities, and the social sciences. This study emphasises critical thinking in 21st-century education to contribute to the discussion about instructional practices and curriculum development. This study found that encouraging critical thinking in the classroom may help students become more engaged, thoughtful, and active learners. Educational institutions are increasingly emphasising critical thinking to prepare students for a dynamic and unpredictable world. The students and society will gain from this positive effect.

Key words: Critical Thinking, Primary Goal, Skill Development, Real-life.

1. INTRODUCTION

Through the development of your critical thinking abilities, you will be able to significantly improve both your creative thinking and your ability to prioritise your time effectively. Not only does critical thinking require thinking in accordance with the laws of logic and probability, but it also involves applying these talents to real-life issues that are not content-independent. You may be able to get a more profound understanding of who you are by engaging in the practice of critical thinking. If you are able to listen to and comprehend the viewpoints of other individuals, it may assist you in maintaining a disconnection from your own emotions and in maintaining an open mind. If you prepare ahead of time, you may be able to ease some of the pressure that is placed on you to bring fresh ideas and perspectives.

A characteristic that is unique to humans is the ability to think, which is the source of all cognitive activities and processes. Processing the data that has been received from the environment via the use of modification and analysis is required. The activities of thinking, visualizing, problem solving, assessing, and making judgements are the means by which this analysis and manipulation is carried out. The term "thought processing" refers to the activity that takes place in the brain when we engage in activities like as coming up with ideas, finding solutions to problems, reasoning, and making decisions, all of which entail the processing of information. The moment when individuals first became aware of their thoughts is an essential component in the progression of research on the topic. The capacity for thought is a distinguishing feature of the human species that differentiates it from all other species. To be able to think, one must first change or modify a picture that is contained inside themselves. It is her belief that the instant our brains start to function, we start to put what we know to use in order to achieve a goal. Because we all share the same aspirations

in life and engage with one another in social settings, the ability to think critically is essential to the flourishing of the human species. Descartes believed that thinking was the same thing as reasoning, and that reason was nothing more than a collection of fundamental ideas that were connected to one another by stringent rules of logic. Learning and thinking are two concepts that are mutually supportive; they contribute to one another and complete one another. From this perspective, it is feasible to assert that learning styles and critical thinking concepts might be used in conjunction with one another, despite the fact that they are various in terms of their qualifications. Similarly, there are studies that can be found in the literature that concurrently address both different learning styles and the concepts of critical thinking.

1.1 Critical thinking is a prerequisite to succeed in real life

Being born with the capacity to think critically is something that only a tiny fraction of the population has. The development of this skill is possible with the assistance of instructors who provide genuine education within the context of a classroom environment. Since its foundation, the educational system has placed a strong emphasis on memorisation via rote learning and the ability of pupils to recall information that is taught by teachers. Every subject, with the exception of physics and mathematics, is strongly reliant on recalling information and practicing it again. Having the capacity to think critically in a scientific lab or a mathematics class, on the other hand, goes beyond the world of test-taking. Individuals in a wide variety of economic industries and endeavours often have a need for this particular item. Modern curricula place a strong focus on the need of pupils improving their critical thinking abilities for the reasons stated above.

It has become increasingly important for educational institutions in Bangalore to place a primary emphasis on the cultivation of critical thinking skills among its students. This strategy places an emphasis not only on the acquisition of knowledge but also on the capability to analyse, evaluate, and generate new understanding from information. A growing number of educational programs and instructional strategies are being developed with the intention of cultivating critical thinking abilities among students. These programs encourage students to challenge assumptions, investigate a variety of views, and use logic to find solutions to difficult situations. In order to better prepare students for the problems that the modern world presents, schools in Bangalore have incorporated critical thinking into the core of their educational framework. This will allow students to develop the ability to think independently and make decisions based on accurate information provided to them. In order to cultivate lifelong learning and adaptability in the face of a global landscape that is always shifting, it is vital to place an emphasis on critical thinking.

1.2 Significance of The Study

The significance of this study lies in the fact that it has brought to light the need of educating students to think critically as an aim in and of itself. For students to be successful in this era of rapid technological development and complex global concerns, as well as to have a beneficial effect on society, it is essential for them to have the ability to think critically. The incorporation of critical thinking skills into educational curricula is of utmost importance, and the purpose of this study is to shed light on approaches that are most effective in encouraging students to acquire these abilities. Educators may assist students in developing abilities in independent analysis, problem-solving, and decision-making by putting a focus on critical thinking in the classroom. This study intends to highlight a number of benefits that are associated with the implementation of this instructional approach. Some of these benefits include improved academic performance, increased creativity, and enhanced readiness for both university education and the workforce. Furthermore, it is hoped that educators and policymakers would be able to make use of the practical ideas provided by the research in order to include instructional strategies that place a focus on critical thinking into their curriculum. This will result in a learning environment that is more dynamic and interesting for students.

2. RESEARCH TOPIC

“The development of critical thinking as the primary goal of the educational process”

2.1 Objectives

1. To choose the right-thinking aids to improve critical and creative thinking abilities.
2. To empower educators to create lesson plans that integrate critical and creative thinking abilities.

2.2 Hypothesis

Hypothesis 1: Students' critical and creative thinking abilities will be greatly improved by the choice of suitable thinking aids.

Hypothesis 2: Giving educators the tools to create lesson plans that include critical and creative thinking would enhance students' learning outcomes and general cognitive capacities.

3. RESEARCH METHODOLOGY

The curriculums of schools in Bangalore, were the subject of this study, which aimed to evaluate the degree to which they provide pupils with the opportunity to develop their capacity for critical thinking. The capacity of the students to think in a rational and reflexive manner was examined through the utilisation of a variety of diagnostic instruments, including examinations and exercises meant to measure the students' knowledge. The key focusses of the evaluation were on advancements in skills such as inferring, summarising, and generalising information. For the purpose of ensuring an accurate and meaningful study, the experimental data that was acquired from these evaluations was processed utilising statistical methods. A significant amount of importance was also placed on the utilisation of theoretical approaches, such as analysis, synthesis, and generalisation, in addition to the investigation of theoretical sources, scientific journals, and online resources. Through the utilisation of this all-encompassing method, we were able to acquire a comprehensive understanding of the ways in which the educational system in Bangalore can cultivate and evaluate the critical thinking talents of students.

3.1 Data analysis

The purpose of our pilot study was to investigate the efficacy of these tactics in encouraging critical thinking among students. And this is what we discovered. Tables 1 and 2 provide the results of an investigation into the indicators of the level aspects of the critical thinking experience of students that were conducted during the ascertaining stage of the pilot project.

Table 01. Evaluation of Bagalur pupils' critical thinking markers during pilot study ascertainment

Groups	"There is an effect", the problem has been solved			"There is no effect", the problem has not been solved			Number
	Number of students	%		Number of students	%		
1 level - advanced							
1 pilot group	11	(9,4%)	A	105	(90,6%)	Б	116
2 control group	12	(10,0%)	B	107	(90%)	Г	119
2 level – upper – intermediate							
1 pilot group	18	(15,5%)	A	98	(84,6%)	Б	116

2 control group	19	(16,3%)	B	100	(83,7%)	Г	119
3 level –intermediate							
1 pilot group	45	(38,7%)	A	71	(61,3%)	Б	116
2 control group	45	(37,8%)	B	74	(63,2%)	Г	119
4 level – elementary							
1 pilot group	43	(37,0%)	A	73	(63%)	Б	116
2 control group	43	(36,1%)	B	76	(63,9%)	Г	119

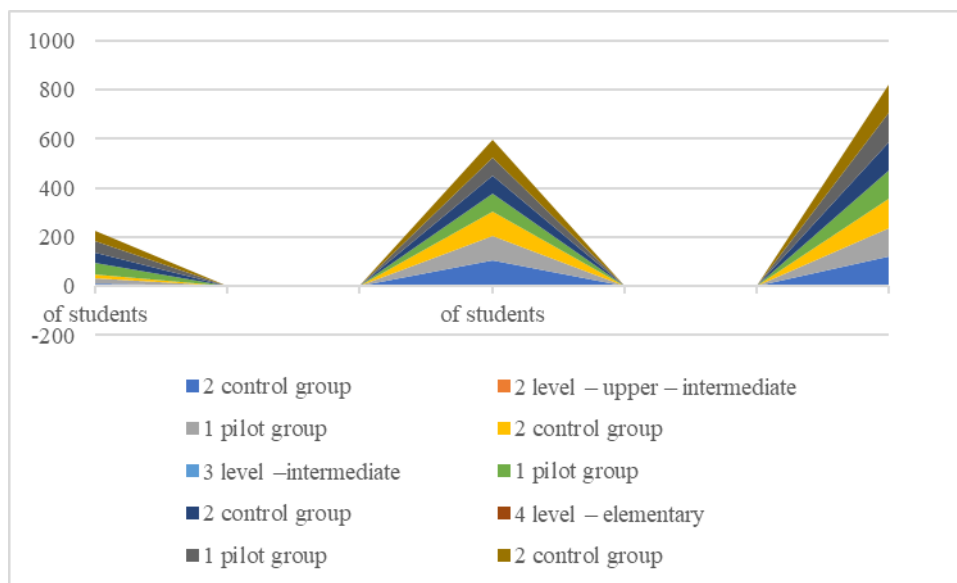


Figure -1 : Evaluation of Bagalur pupils' critical thinking markers during pilot study ascertainment

Table 02. A study in Bagalur village investigated pilot and control group students' critical thinking while testing

Characteristics of the of students' critical thinking experience	ϕ empirical *	ϕ empirical * < ϕ critical*; ϕ empirical * < 1,64 ($p \leq 0,05$)	N2	N1
1 level - advanced	0,16	No differences $p \leq 0,05$	119	116
2 level – upper – intermediate	0,16	No differences $p \leq 0,05$	119	116
3 level –intermediate	0,14	No differences $p \leq 0,05$	119	116
4 level – elementary	0,14	No differences $p \leq 0,05$	119	116

According to the findings of the critical thinking experience formation, only around nine percent of the students in the control and pilot groups are capable of forming their own ideas and calling into question the facts that are generally accepted. It is estimated that just around 37 percent of students are capable of drawing correct conclusions, conducting acceptable evaluations of the content, and distinguishing between conflicting opinions depending on particular criteria. Just a little bit more than one-third of students have shown some fundamental capacity to challenge commonly held beliefs and to engage in critical thinking about themselves, their communities, and the world in general. The results indicate that there was no discernible difference between the control group and the pilot group when statistical analysis was performed on the indicators of level aspects of students' critical thinking experience at the ascertaining stage of the pilot study. As a result, they are analogous to one another and insufficient alike. As a result, there are opportunities with regard to their improvement.

According to the data shown in Tables 3 and 4, the critical thinking experience of the formation students was also investigated during the control stage of the study methodology.

Table 03. Assessment of students' critical thinking skills during the study's control period in Bagalur villages

Groups	"there is an effect", the problem has been solved			"there is no effect", the problem has not been solved			Number
	Number of students	%		Number of students	%		
1 level - advanced							
1 pilot group	31	(26,72%)	A	85	(73,28%)	Б	116
2 control group	17	(14,28%)	Б	102	(85,72%)	Г	119
2 level – upper – intermediate							
1 pilot group	39	(33,62%)	A	77	(66,38%)	Б	116
2 control group	24	(20,16%)	Б	95	(79,84%)	Г	119
3 level –intermediate							
1 pilot group	25	(21,55%)	A	91	(78,45%)	Б	116
2 control group	40	(33,61%)	Б	79	(66,39%)	Г	119
4 level – elementary							
1 pilot group	21	(18,10%)	A	95	(81,9%)	Б	116
2 control group	38	(31,93%)	Б	81	(68,07%)	Г	119

Table 04. Comparing pilot and control groups' critical thinking experience in Bagalur villages during the control phase

Indicators of the level characteristics of the of students' critical thinking experience	ϕ empirical	ϕ empirical * > ϕ critical*; ϕ empirical >2,31 ($p \leq 0,01$)	n2	n1
1 level - advanced	2,39	differences, $p \leq 0,01$	119	116
2 level – upper – intermediate	2,35	differences, $p \leq 0,01$	119	116
3 level –intermediate	2,09	No differences, ϕ empirical * < ϕ critical uncertainty zone	119	116
4 level – elementary	2,43	differences, $p \leq 0,01$	119	116

The findings of the diagnostic test revealed that the students in the pilot groups had a higher level of experience in advanced critical thinking (26.72 percent), a higher level of experience in upper-intermediate critical thinking (33.62% compared to 14.28 and 20.16% in the control groups, respectively), and a lower level of elementary critical thinking experience (18.1% compared to 31.93% in the control groups). Based on the data shown in table 4, there is a statistically significant difference between these values.

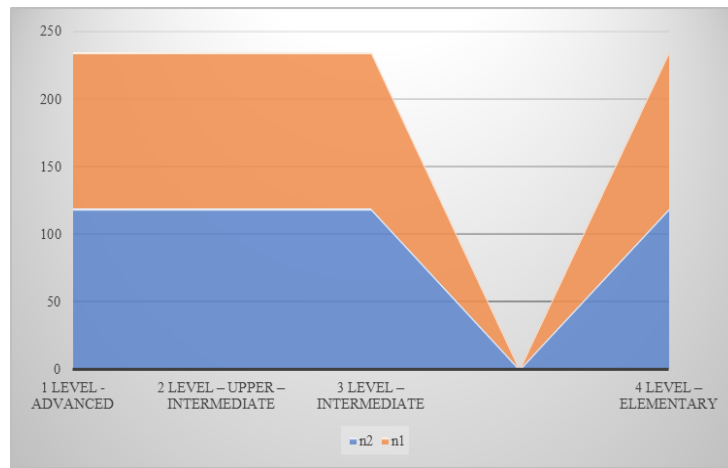


Figure .2 : Critical thinking experience in Bagalur villages during the control phase

As a point of interest, it is important to point out that the degree of critical thinking experience exhibited favourable dynamics during the regulating stage of the research in comparison to the ascertaining stage. To be more specific, when it comes to the advanced level of complexity, there was a rise from 9.4% to 26.72% in quantitative indicators ($\chi^*=2.78$, $p < 0.05$). Additionally, there was a rise from 15.5% to 33.62% in upper-intermediate level indicators ($\phi^*=3.27$, $p < 0.05$), which indicates a statistically significant difference. According to the diagnostic data analysis (bar chart 1), students in the experimental groups fared better than their counterparts in the control group in the ascertaining stage of critical thinking development. This was the case across the board in the controlling stage. There is a difference that may be considered statistically significant here.

3.2 Major Finding/ Results

We shall describe critical thinking as the capacity to think about a problem from numerous sides, arrive at a conclusion that is well informed, and assess one's own thought process in light of that conclusion. This definition is based on the research that was provided earlier. This allowed us to determine the scope of critical thinking, which includes activities such as problem-solving, working with information, and revising one's own thought processes and representations.

The following abilities are formed as a result of pupils' critical thinking development:

- to assess the effectiveness and sufficiency of mental activity stages and outcomes;
- to find alternative approaches to problem solving;
- to think critically and independently, to verify the accuracy of judgements, to critically analyse the text;
- to think critically about reality in moral evaluations, to cultivate a culture of ethical values in the world, society, and oneself.

According to the findings of contemporary academics, there are a variety of paths that may be taken to facilitate the development of critical thinking abilities in pupils. Among them are the use of simulations (live modelling, virtual modelling, and structural modelling), the utilisation of group work, and the implementation of complicated trainings and tactics. It is also possible to benefit from visual thinking courseware (VTC), which is comprised of visual effects that have the ability to represent, change, produce, and evoke symbolic information that is not linguistic in nature. Furthermore, students get the opportunity to develop their statistical thinking abilities and acquire the ability to question hypotheses and claims. In conclusion, discussions may serve as a framework for teaching students how to solve issues in a step-by-step manner. This involves identifying the problem, acquiring and arranging essential information, assessing the credibility of the information, and ultimately, studying and interpreting the outcomes for the problem. The development of students' critical thinking skills via the study of issues that span several disciplines, the

use of reasoned reasoning, the resolution of problems through peer criticism, and the participation of students in collaborative and group projects.

We have come to the conclusion that critical thinking serves three purposes: first, to evaluate the efficacy and appropriateness of mental processes and their outcomes; second, to stimulate the acquisition of new information and abilities through self-directed study; and third, to discover the truth by confirming the accuracy and veracity of one's own and other people's assessments regarding the truth. Techniques for contextual retelling, text evaluation, judgements, questions (in the context of the lesson topic, the problems of modernity, etc.), finding sophisms in the text, developing critical text analysis, etc.; using graphical images of argument structures for evidence and deduction of the thesis, etc. are some of the methods that we have developed and evaluated for the purpose of improving critical thinking. These methods were developed based on an examination of the existing literature.

In the following, we will examine the fundamental approach that has been responsible for the development of critical text analysis. You will need to put together a list of questions that will serve as a roadmap for your critical text analysis in order for this approach to be successful. A revised version of the critical issues that were presented by American colleagues Neil and Stuart (1998) is incorporated in the works that Tyaglo (2001) has produced.

The following is a list of some of the significant questions that Tyaglo (2001) raised:

You've explained the text's issue and concluded. 2. Does the conclusion have supporting reasons? 3. What structure guides the argument? 4. Which expressions or sentences suggest deception?" 5. Does the article contain many incorrect or poorly explained concepts? 6. Can you explain explicit and implicit value assumptions? Does providing information about anything involve explicit or implicit assumptions? 7. What requirements must an argument meet to be accepted? 8. Does this matter make sense? 3. 10. Does the conclusion fit the topic? 11. Are the arguments worth considering? Are the reasons given logical? 12. Is the argument persuasive? 14. Were any logical errors made? 15. Modifications can affect the problem or results.

For secondary school pupils, we think a more thorough and logical set of questions is necessary. As a result, we provide a series of enquiries grounded on the principles of logic:

- To examine the author's objectives (Why did the author write the text? What issue did the author bring up? How may one assess the validity of an expert's opinion? Who provides problem-supporting arguments? (Is the expert really an authority on the subject? What are the evidences of his proficiency?)
- Show the text's internal organisation and identify any connections to other items (other subjects covered in the unit or course).
- Are all of the ideas and conclusions in the work properly stated and formulated? Are all of the conclusions and reasoning correct?
- Are all of the ideas and conclusions used in the same way? Is it retained during the whole reasoning process?
- Does the text include any logical flaws, such as erroneous use of the homonym, "substitution of one concept by another," or "thesis substitution"?
- Do the rulings in the text make sense?
- Does the text issue have any other solutions? Does the alternative solution to the issue have a clear choice?
- Which of the two contradictory conclusions is correct?
- Does the text include any genuine judgements that are rendered without adequate justification? Has the validity of the thesis been shown using all of the arguments?

- Is there a strong enough connection between the thesis and the grounds, or between the premise (argument) and the conclusion? Does deductive reasoning, inductive reasoning, etc. include any errors?
- Is the conclusion sufficiently supported by the premise? Are the reasons strong enough? What other details may have supported the conclusion, or what premises are missing? Arguments or counterarguments: which is stronger?
- Explain how the book relates to both your own and the others' experiences. Make arguments.
- When the author presents arguments, what background does he use? Look for hints of the author's personality in the writing. Pose enquiries to him.

3.3 Let us explain how we formulated these questions.

There are two subfields that fall under the umbrella of basic logic: dialectical logic and formal logic. A "tool to discover and establish the truth"—the result that is supposed to be achieved through the use of logical reasoning—the laws of logic are the rules of correct thinking. Critical thinking is a kind of reflection that requires a solid understanding of both general and applied scientific concepts, as well as the elements of logic. It is vital to have this understanding in order to engage in critical thinking. In light of this, before you can attempt to develop a series of questions for critical text analysis, you need to evaluate whether or not the laws of logic are violated in that particular instance.

3.4 Let's study them.

Rule of self: "Every concept and judgement must be identical to itself while reasoning." This applies regardless of how often a thought appears in an argument or its relationship to others. Another thought will come to you. So, critical text analysis' third inquiry goes: Are all textual concepts and conclusions explained clearly and accurately? Are the thesis, arguments, and conclusions credible? Fourth, are all concepts and assessments used equally? Does reasoning maintain it?" Mistakes occur when this law is ignored. The "substitution thesis" logical fallacy can be used to present or rebut evidence, purposefully or accidentally. Homonyms can confuse logic. Question 5: Does the text contain logical errors like improper homonym use, "substitution of one concept by another," or "thesis substitution"? Too much sophistry distracts. The non-contradiction principle prohibits presenting opposing opinions in the same context. 6th, "Are the text's judgements consistent?"

The exclusion of the third applies when two competing judgements are true and the third is lacking. The scenario says one judgement is right and the other erroneous. Seventh and eighth questions were based on it: The text problem: any logical alternatives? Does the multitude of options make sense? No two verdicts are imaginable; which is right? (2014) According to Salhor. The ninth and tenth critical text analysis writing questions used the fourth rule of sufficient grounds: Any valid textual assumptions that need justification? Has the thesis been proven using all arguments? Do premises, conclusion, and thesis match? Do you know inductive, deductive, or other reasoning errors?

Is the conclusion's premise sound? This prompted our 12th question. Were the arguments sufficient? How is the conclusion unsupported, and would more evidence have helped? Which is stronger, arguments or counterarguments? As stated, verifying arguments and premises is essential. The first question is: can we trust an expert's viewpoint and who offers the thesis's evidence?

The fourteenth critical text analysis study is: What background knowledge does the author use to argue? Thus, we addressed formal logic-based critical text analysis concerns. Students doing critical text analysis papers should follow these guidelines:

Continue reading.

Answer the initial and second questions. The introduction's topic statement, the main body's different opinions, and the conclusion should be examined. Another textual structure is possible.

- As you go through questions № 3-5, take notice of these infractions. You shouldn't discuss it in the analysis if the content is free of infractions.
- Go over the content once again and attempt to respond to questions № 6–10. Indicate which premises (arguments) support the arguments and their conclusions. After that, respond to the following query: "Are the premises (arguments) sufficiently strong? Are arguments and conclusions clearly connected?"
- Verify each and every conclusion.
- Respond to questions №12 and 13.
- Keep in mind that the author may have a different opinion. Respecting his viewpoint is essential.
- Getting closer to the truth is the goal of the analysis, not to "defeat" someone's stance.

Tenth graders analyse Bilalov (2008)'s "Personality as a subject of history" excerpt on "Political repressions of the 30s." To emphasise a historical figure. The title asks, "How to assess the role of bright, outstanding individuals in the events that occurred on a national or epochal scale?" Soon after, he defines "outstanding personality." He describes a "big-time" politician's problems and remarkable qualities. The author argues why "big-time" politicians are problematic and calls for change. Author explains why HR policy is a mess. Bilalov's conclusion reveals the solution.

The paper's author is an expert as a philosophy professor and PhD. This makes the piece serious and professional. Read the article. The author does not distinguish between "historical personality" and "outstanding personality," hence some statements dispute. Bilalov (2008) lists global historical figures. They often shape history. Not all people are like that. Social progress depends on great labour. To make matters worse, the author admired Stalin. This "great man" definition contradicts the author. He says "a great man does everything for the people, solves the historical problems of the social progress and humanisation" . After Stalin's death, humanising society challenges persisted. Totalitarianism is characterised by human rights violations and personality deterioration. Stalin was not always nationalistic. So he cared for half the population and sent the other half to the Gulag. Some of history's worst political crises occurred during 20th-century authoritarianism. Due to anti-human authoritarianism, the regime fell almost inevitable.

The author doubts K. Jaspers' wish "that no dictator could be considered a great man." Finally, the author celebrates those "who do everything for the benefit of the people and who solve the historical problems of social progress and humanisation of society". The author thanks them. Bilalov (2008) contends that politicians eventually base their decisions on mutual interests rather than morality. Because of this, "common interests" might create harsh and unfair choices. Given "big-time" politicians' severe and unfair interests, how may lives be improved? This author says "moral principles exist selectively in politics," which is intriguing. I think several "big-time" officials in our country see "through me" and my future goals. Most likely not. Who wants bright prospects and charisma? The author's explanations for the "big-time" politician's actions are untrue.

The essay finishes with the author's "great personality" theory of great people's behaviours. Bilalov (2008) says we don't commemorate celebrities with monuments or streets. Great people help others and address society's problems by making society more compassionate. I believe that if we want great leaders and to recover from this economic slump, which has given rise to the philosophy of rationalising lies, corruption, and cynicism, we must address our nation's spiritual and cultural roots, public and private morality, and ethics. Only then can we recover from this downturn. This does not require a "extraordinary measures" proposal.

I think it's important to stress Bilalov's humanistic interest for the issue he researched.

I believe Bilalov's morality is crucial.

I want to know, M. I. Bilalov, what kind of society you would construct as president. I would ask the essay author if we met. What interactions can people have? What ethical principles would guide this country's sustainable development strategy? I wish to study about alternatives to capitalism in the West and socialism in the USSR.

4. DISCUSSION

A number of different approaches to developing critical thinking have arisen as a result of our study, and this article gives an overview of one of those approaches. The findings of the pilot study indicate that incorporating critical thinking development techniques into the classroom has a positive impact on the students' ability to think critically. This is demonstrated by the students' capacity to evaluate arguments and evidence based on predetermined standards, to propose a well-reasoned and well-rounded solution to any given judgement or problem, to take into consideration other points of view, and to critically examine both themselves and others. It is possible for educators to make use of the tools for the development of students' critical thinking in order to address the problem of students' individual progress over the course of their education. One of the key focusses of continuous attempts to solve problems is to emphasise the need of enhancing students' critical thinking abilities via the utilisation of information technology. One example of such an approach is the use of visual aids in the process of structuring the argumentation of the thesis, which is the evidence that supports the study.

5. CONCLUSION

Critical thinking is a skill that is required in every facet of life; nevertheless, jobs that involve interacting with others are more demanding of this capacity. Winkelman emphasised the significance of the individuals who make a contribution to human fitness in each and every practice and control. In particular, he emphasised the significance of those individuals who instantly get involved in the life of the character, such as educationalists, psychologists, and counsellors. When educators and guidance counsellors wish to include fundamental thinking into their classrooms, the first thing they need to do is ensure that they adhere to the notion of important thinking. It is possible that teachers, just like everyone else, may gain something from chances for professional development and guidance on how to improve their narrative abilities and make their coaching toolset more comprehensive. In order for students to be able to assume a more significant ownership of their own learning, it is necessary for academics to take into consideration the works and implement strategies. It is something that they would want to give up, which is coaching that places an emphasis on the trainer and discipline.

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