

Importance of Critical Thinking in the Education

Mr. Tilak Raj¹, Prashant Chauhan², Rashmi Mehrotra³, Meenakshi Sharma⁴

¹ Department of Education, SGT University, Gurugram, Haryana, India

² Department of Architecture, Vivekananda Global University, Jaipur, India

³ Department of Education, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India

⁴ School of Education, Sanskriti University, Mathura, Uttar Pradesh, India

Correspondence: Mr. Tilak Raj, Department of Education, SGT University, Gurugram, Haryana, India. E-mail: tilakraj.fbs@sgtuniversity.org

Received: February 14, 2022

Accepted: March 22, 2022

Online Published: April 7, 2022

doi:10.5430/wjel.v12n3p126

URL: <https://doi.org/10.5430/wjel.v12n3p126>

Abstract

The capacity to think clearly and reasonably about what to do or believe is known as critical thinking. It also requires the capacity to think critically and independently. Students engage in critical thinking when they investigate, appraise, interpret, or synthesize information and use creative thought to construct an argument, solve problems, or reach a conclusion in the most basic sense. One of the most fundamental purposes of educations is to produce well-informed students, which implies that students must be able to grasp significant, useful, beautiful, as well as powerful ideas. A critical thinker understands how to use knowledge to solve difficulties and classify acceptable sources of information to educate himself, and he can make conclusions from what he knows. This research looked at the role of critical thinking in educations, as well as the forms, stages, and importance of critical thinking. This research aids in a greater understanding of critical thinking in the educational system and how critical thinking may be used in the educational systems to benefit students.

Keywords: critical thinking, communication, education, learner, students

1. Introduction

Critical thinking not solitary represents the capability to think in accordance with the law of reasons as well as probability, but it also describes the ability to apply these capabilities to real-life problems that are not contents self-governing. You may get a better knowledge of yourself by using critical thinking. It will allow you to be objective, fewer emotional, as well as more open-minded as you value the ideas and opinions of others (A. Z. Bhat, V. R. Naidu, and B. Singh 2019). By planning ahead, you will have the confidence to give fresh viewpoints and new insights into some of your issues. In today's college and university environments, critical thinking is a regular subject. The art of critical thinking, which is often taught as a technique to "better" thinking, is a manner of thinking and, more significantly, learning that incorporates altering how one thinks about thinking (B. Arisoy and B. Aybek 2021, R. H. Ennis 2018).

Thinking is the process through which students create but also apply ideas in order to have a better understanding of how they might improve their thinking. A person is often considered a critical thinker if he or she intentionally improves their thinking on a regular basis. The studies of critical thinking is based on a simple concept: identifying strengths and shortcomings in one's thinking in order to keep the strengths while improving the deficiencies (J. Rai, R. C. Tripathi, and N. Gulati 2020, M. M. Gupta, S. Jankie, S. S. Pancholi, D. Talukdar, P. K. Sahu, and B. Sa 2020, S. Shukla, A. Lakhmani, and A. K. Agarwal 2017) . This paper's use of the term critical does not imply a pessimistic attitude to thinking. Critical thinking entails evaluating thoughts, ideas, or judgments with awareness, inventiveness, and refinement as required (F. K. Cansu and S. K. Cansu 2019, R. Mataniari, J. Willison, M. H. E. Hasibuan, U. Sulistiyo, and F. Dewi 2020, C. Loes, E. Pascarella, and P. Umbach 2012) (Figure 1).

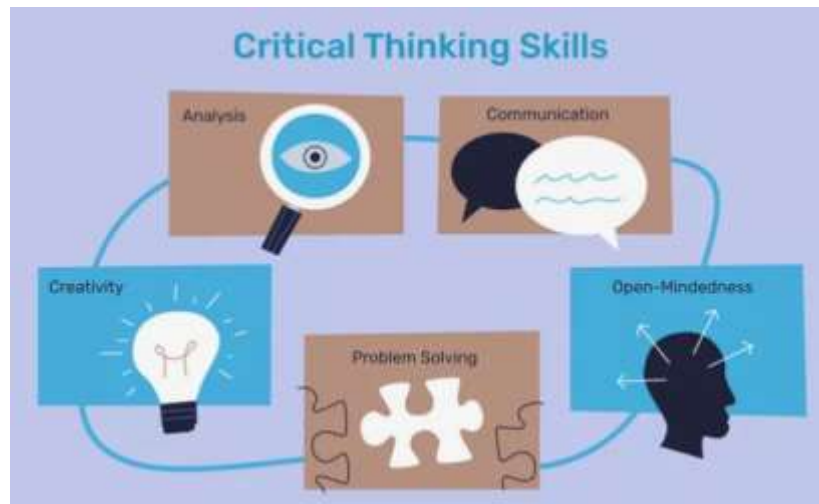


Figure 1. The above Figure illustrates the various Phases of Critical Thinking (Jayakumar, U. M 2008)

Critical thoughtful is the capability to objectively consider, analyze, as well as evaluate an issue or notion in order to arrive at a well-informed conclusion. Critical thinkers don't merely go along with the crowd; instead, they form their own informed opinions based on sound reasoning and evidence. They rely on their critical as well as self-reliant thinking abilities(M. M. Gupta, S. Jankie, S. S. Pancholi, D. Talukdar, P. K. Sahu, and B. Sa 2020, S. Sharma, V. Vijayaraghavan, P. Tandon, D. R. V. Kumar, H. Sharma, and Y. Rao 2012, R. K. Mittal, N. Garg, and S. K. Yadav 2018). In a liberal education approach, where students are taught how to think rather than what to think, improving a student's critical thinking abilities is very important [14]. Here are some of the reasons why pupils in today's world need critical thinking abilities:

- Increasing curiosity and creativity

When a student is trained to think critically, he or she develops an insatiable curiosity about the world around them. Students with a strong sense of curiosity want to evaluate and process information and experiences. They generate their own educated ideas, most of which are out-of-the-box, as a result of this process, which boosts their creativity. All critical thinkers will experiment with creativity in their professional and personal lives. They will generally be able to get their creative juices flowing while searching for solutions in a logical and sensible way.

- Encouraging self-awareness and self-reflection

The fundamentals of critical thinking include self-monitored, self-disciplined, and self-corrective thinking. Someone who 'thinking does so on their own time. There is both an objective internalization and a full understanding of the subject at hand. Because it helps students to reflect on as well as grasp their own viewpoints, critical thinking is at the core of learning. This skill aids a student in finding out how to make sense of things based on own observation and expertise. It gives kids confidence and self-assurance because they realize that the outcome is the result of a cognitive process that creates results. Students gain self-assurance and the ability to learn from their mistakes, which are valuable assets in both private as well as professional lives.

- Improving job possibilities

Critical thinking isn't only for students in the classroom. Following COVID-19, the new economy puts a high demand on a flexible workforce and employees' capacity to analyze data from a variety of sources and come up with creative solutions. In a fast-changing company, a person with good critical thinking abilities will be appreciated.

- Fostering innovators and problem-solvers:

The capacity to analyze and look at issues in a creative and productive manner is one of the by-products of critical thinking abilities. Problem solvers are typically critical thinkers. Before making reasonable judgments to solve a problem, a skilled critical thinker will be able to distinguish facts from views and fiction and evaluate the subject from all perspectives. They will also be able to come up with answers to challenges that are devoid of prejudice, which is important to remember in the workplace. As global concerns such as global warming, pollution, and pandemics continue to afflict the globe, today's youth - who will become tomorrow's leaders - will be expected to shoulder the burden of finding effective answers. Critical thinkers will come up with innovative and long-term

solutions (N. J. Alsaleh 2020, E. Wayne Ross and M. Gautreaux 2018).

- Developing related life skills

Organization, planning, open-mindedness, as well as communication are just a few of the life skills that critical thinking encourages. Critical thinking is a life skills that enables you to overcome challenges in both your private as well as professional lives. It promotes self-confidence as well as independence, which leads to successful lives. Individuals will learn from your mistakes as well as boost your output in all aspects of your life as a critical thinker.

- Saving Time

By assisting you in prioritizing work and identifying relevant resources and information, critical thinking may help you save time in the long term. It assists you in making well-informed choices that are more likely to result in the intended outcome, while also reducing the time and effort you spend making modifications and reacting to unforeseen events.

1.1 Types of Critical Thinking

Critical thinking abilities come in a variety of forms. Here are a few examples:

1.1.1 Problem-solving

The last stage is to put the solution into action after you've identified and assessed the issue and explored potential remedies. It is vital to understand if the proposed solution is beneficial for the aim before applying it. Here are some problem-solving abilities you'll need in this situation:

- Clarification
- Decision-making
- Attention to detail

1.1.2 Open-mindedness

When thinking critically, you must be impartial and objectively assess ideas. Making choices based on data analysis rather than assumptions or judgments is what this entails. Here are several abilities that can assist you in thinking with an open mind:

- Fairness
- Diversity
- Humility

1.1.3 Creativity

Critical thinking also requires creativity and innovation. These may be used to come up with new ideas or to spot trends in the data presented. Here are some innovative critical thinking strategies to assist you:

- Curiosity
- Flexibility
- Imagination

1.4 Stages of Critical Thinking

The majority of us use critical thinking strategies that are lesser time consuming and non-reflective. Analytical thinking methods, but at the others hand, necessitate effort and dedication (B. Casiraghi and J. C. S. Arag 2019, H. Tunjungsari and B. Takwin 2021). The following are six different styles of critical thinking as shown in Figure 2:



Figure 2. The above Figure Illustrates the Six Stage of the Critical Thinking (Mayhew, M., Wolniak, G., & Pascarella, E 2008)

- Stage 1: The Unreflective Thinker

People who do not think critically, who act only on their beliefs, biases, and prejudices will acquire misunderstandings. They do not consider the influence and consequences of their actions on their life. They are rash and lack critical abilities that would enable them to analyze their thoughts.

- Stage 2: The Challenged Thinker

This individual is aware of the impact that thoughtful has on their lives and behaviors, as well as understands that an absence of critical thinking may lead to serious problems. To address a problem, you must first recognize that one exists. According the questioned thinker, critical thinking requires challenging assumptions, conclusions, as well as other points of view. They may be well aware of their own deception. People at this stage of development may believe their reasoning is superior to what it really is, making it even more difficult to see their own flaws.

- Stage 3: The Beginning Thinking

People who think at this level actively regulate their thoughts and behaviors in a variety of aspects of their life. They've realized that thinking has blind spots as well as other issues, and they're taking measures to remedy them. A Beginning Thinker will recognize the importance of logic, are becoming more self-aware of their own thought processes, and investigate underlying prejudices and preconceptions. Simultaneously, the novice will gain higher internal standards of clarity, logic, as well as correctness, as well as a greater understanding of the role of emotion and ego in critical thinking. The Beginning Thinker will also be more receptive to criticism and feedback in this area, and will use it to modify their thinking orientation.

- Stage 4: The Practical Thinker

The Practical Thinker will be conscious of their flaws and will have learned how to work around them. They will cultivate healthy thinking habits as well as conduct frequent assessments of their mental processes. Although the Practical Thinker is aware of their mind's strengths and flaws, they may not have a methodical technique of acquiring insight into their thinking. They might still be deceived by themselves.

To reach this point, the individual must have "intellectual persistence." This entails creating a methodical and intentional strategy, as well as deliberate practice techniques, to take small, manageable steps toward development. Queries and questions that seek answers for a specific reason - are inextricably linked to thinking. This requires knowledge, as well as the ability to evaluate and comprehend that information via the use of inferences. Our conclusions are tinted by a notion and our point of view, and they are founded on our assumptions.

- Stage 5: The Progressive Thinker

The Expert Thinker will have developed strong habits that allow them to ruminate on their own thoughts as well as get insights into a variety of issues. They are usually able to detect biases in their own thinking and understanding, as well as from the perspective of others. They'll be unbiased. While the Advanced Thinker recognizes their ego's role in the spread of thoughts, they may not be conscious of all the inferences underlying influences that form their own and others' mindsets. Self-criticism will be second nature to the Advanced Thinker, and he or she will try to improve in little stages. They will create new thinking patterns and habits as a result of their intellectual breakthroughs. They've developed intellectual integrity, identifying inconsistencies and contradictions, as well as

intellectual empathy, which allows them to see the world through the eyes of others and really understand them. Advanced thinkers will be able to confront ideas as well as viewpoints that aren't necessarily their own.

- Stage 6: The Master Thinker

Master Thinkers have total controls over their decision-making and information processing processes. They are continually honing their thinking abilities. They elevate the level of their thought to a degree of conscious awareness via consistent practice. A Master Thinker will have great insights into mental processes and ego control. Assumptions, including cognitive biases will be constantly re-examined, resulting in increased practical knowledge and insights. They'll evaluate and scrutinize their own responses.

When left to their own devices, our thoughts will always go toward what is instantly simple and comfortable. The brain is always looking for ways to save energy; it utilizes almost 20% of our total energy and is always looking for ways to be useless. The brain searches for whatever will benefit it the most, which is often the route of least resistance. It will fight anything that is difficult to comprehend and includes a great deal of intricacy. Most of us will never become master thinkers, according to psychologists (who are probably correct).

1.5 Critical Thinking's Importance to the Country

The significance of critical thinking to people in particular and the country in general is indicated in the few conceptions of critical thinking offered above. Everybody, without a question, analyzes, as well as it is in our nature to do so. Thinking, on the other hand, is often casual as well as informal. Much of our thinking is warped, twisted, incomplete, ignorant, or plain biased when left to its own devices. The quality of our lives, as well as the quality of what we produce, create, or build, is directly proportionate to the quality of our brains. Poor thinking costs money and takes away from one's pleasure of lives. This fact emphasizes the need of critical thoughtfulness in both national and personal affairs.

Critical thinking minimizes the chance of accepting, reacting on, or responding with an inaccurate belief by allowing one to assess, evaluate, explain, and reorganize one's thoughts. Even if a thinker understands the methods of logical inquiry, such as reasoning, errors might occur owing to incapacity to apply the techniques or personality qualities such as egocentrism. Prejudice, biases, propaganda, personality, distortions, and misinformation are all covered by critical thinking. We all live in a difficult environment, and it is critical for everyone, especially students, to have the skills, talents, and capacities to deal with personal as well as societal issues, making the country a desirable place to live.

1.6 Critical Thinking in the Classroom

Critical thinking is a word that is often used in schools, as previously stated. Adults are encouraged to develop and apply these skills in a variety of settings. Critical thinking involves assessing and refining the ideas created, making a preliminary decision about what action would best handle the problem or what belief about the issue is most logical, and thereafter analyzing and improving that solution or belief. The value of excellent problem-solving skills cannot be emphasized. The capacity to solve problems has the potential to have a stronger immediate and long-term impact on people. It's vital to recognize critical thinking as a useful skill. Critical thinking can as well as should be taught in a supervised manner that gives students experience evaluating and testing ideas. Even in classes where critical thinking is required for success, critical thinking is not a natural outcome of attending college courses.

2. Discussion

Critical thinkers investigate ideas and assumptions rather than taking them at face value. They'll constantly strive to figure out whether the ideas, debates, and findings are representative of the full picture, and they'll be astonished if they aren't. Critical thinkers will find, evaluate, and solve problems in a logical way rather than depending on intuition or instinct. In the past, certain years of school were more concerned with mindless mechanical learning and the capacity to repeat and recall material from books. Problem-solving abilities have hitherto been limited to mathematics, with just a few tests conducted in scientific laboratories. Learning, on the other hand, is increasingly focusing on the developments of the critical thinking and skills that will prepare pupils for life beyond school. One of the most essential academic abilities is critical thinking, which enables students to examine or reflect on their own comprehension and knowledge of the material offered. Students who have been given an assignment and must do extensive study on the subject should use critical thinking. In the long term, it will also benefit you at work. Simply put, critical thinking is the capacity to comprehend information as well as critically assess the potential consequences of actions.

This generation of students has grown up in an age of large quantities of data, the bulk of which comes from online

sources, and it is evident that they will need to learn how to assess what they read and hear, as well as how to recognize misleading information beyond the surface facts supplied. Higher education may help students grow critical thinking proficiency "How to progress critical thinking capabilities in pupils," is one essential issue that comes to mind at this point. It's worth noting that critical thinking capacity may be instilled in a student at any age. Any level of the educational pyramid. The only thing that differs is that at each level, there is a different degree of interaction. As a result, although it is crucial to begin emerging critical thinking skills in the classroom, it affects students at the higher level more than it does children in elementary school. This is it because kids at this level are more cognitively developed and capable of coping with the demands.

However, the topic of how to help kids improve their abilities remains unanswered. This is a unique opportunity there is a methodological problem. What strategy should we use to successfully teach critical thoughtful in the classroom and student? As can be seen, critical thoughtful entails being willing's as well as capable of evaluating one's own actions. The teaching and study of any topic in the school curriculum might influence students' thinking. Students must learn to suspend their disbelief in order to develop critical thinking abilities. To be effective at this, one must adopt a viewpoint rather than a judging attitude. That is, while applying critical thinking to topics, one should resist jumping from insight to judgments. Critical thoughtful is founded on ideas and principles rather than rigid rules. These notions are

This includes things like problem identification, rational inquiry, conceptual analysis, logical reasoning, and nature. While critical thinking skills such as developing an argument, identifying premises, and reaching a conclusion are important, so is the collection of knowledge based on facts via reasoning, thinking, and questioning. as well as education How to think about what to think about; analyzing the effectiveness of an argument by examining how to think about what to think about; Critical thoughtful as a quest for meaning and critical thinking as a competence are two concepts that are sometimes employed interchangeably.

2.1 Critical Thinking as Well as Education

One of the most fundamental purposes of education is to produce well-informed students, which implies that students must be able to grasp significant, useful, beautiful, and powerful ideas. Another objective is to educate critical and analytical thinkers who want to use what they've learned to better their own lives including contributing to their society, culture, as well as civilization (B. Arisoy and B. Aybek 2021, L. F. Santos 2017). These two educational areas for promoting critical thinking are founded on specific assumptions.

- The brain is a living organism. Minds are created. As a consequence, the curriculum has turned into a mind-altering device. This emphasizes the moral importance of seeing students as self-contained centers of awareness with the inherent ability to alter their own brains and lives.
- Rather than preparing pupils for preconceived roles, education should try to prepare them for self-direction. As a consequence, students must be prepared to navigate the maze of challenges that life will hurl at them on their own.
- Neophytes are often inducted into the forms of representation as well as domains of meaning that humanity have so far developed via educational institutions.
- Careful analysis, clarity of thought, and reasoned conversation are the bedrocks of democracy and democratic life.
- On the basis of these arguments, critical evaluation and analytical skills emerge as essential for a high quality of life.

2.2 Critical Thinking's Educational Benefits

Critical thinking instructors provide students the opportunity to recognize as well as manages their own learning. Students who use critical thinking skills approach course material with more thoughtfulness as well as effectiveness, ask more difficult questions, and engage more actively in the learning process. Critical thinking abilities are commonly used long into adulthood by those who acquire them. These abilities have the potential to impact their lives in the long run. Critical thinking skills are required for academic and professional success. Students who use these talents have a larger perspective of the world and are more capable of making crucial choices in school and in life. Instead of trusting your own reasoning as adequate proof, critical thinking is the capacity to assess how you think and give evidence for your opinions. Mastering critical thinking skills may bring a number of benefits, including more control over your own knowledge or even empathy for other people's viewpoints(M. L. Styers, P. A. Van Zandt, and K. L. Hayden 2018, N. D. Saidin, F. Khalid, R. Martin, Y. Kuppusamy, and N. A. P. Munusamy 2021,

P. A. Igwe, U. C. Okolie, and C. V. Nwokoro 2021).

3. Conclusion

Critical thinking is undoubtedly essential in every aspect of life, but notably in vocations that interact with people, as shown in the prior section. We may be able to communicate our ideas more successfully if we think clearly as well as carefully. Eventually, Critical Thinking Skills assist you with bettering comprehend the encounters and perspectives on others, upgrading your capacity to work with various individuals. Critical thinking increases comprehension skills by teaching students how to evaluate the logical structures of texts. Critical thinking abilities enable you to comprehend and appraise a situation using all relevant facts and information. Teachers and counselors must first be dedicated to critical thinking and its philosophy before they can apply it in their classrooms. The ability to think critically that is taught in the classroom has a substantial impact on future work learning. Individuals are impressed with the capacity to think deeply and critically about workplace problems and their specific responsibilities in developing corporate cultures while contributing value to the goods or services a business gives to the community or the globe after learning these abilities.

Using critical thinking skills, people may arrange and organize information, data, and facts to identify and solve a problem. You almost certainly already possess a number of critical thinking skills that you may discuss in interviews and list on your CV, and you can work on honing them. This article looks at critical thinking talents, including their description, importance, how to improve them, and examples. It is a person's ability to analyze their own mental processes and provide evidence for their ideas in its most basic form. Rather than depending only on one's own judgment. When a student develops critical thinking skills, they have a variety of advantages, including increased learning capacity in order to empathize with the perspectives of others. A person with well-developed critical thinking will examine the facts provided, reject any inaccurate or unscientific reasoning, and scrutinize the information sources. They will be well and capable of determining the value of a debate and drawing deliberate yet evidence-based decisions. Critical thinking is one of the most crucial skills that each learner should learn.

References

- Alsaleh, N. J. (2020). Teaching critical thinking skills: Literature review. *TOJET Turkish Online J. Educ. Technol.*
- Arisoy, B., & Aybek, B. (2021). The effects of subject-based critical thinking education in mathematics on students' critical thinking skills and virtues. *Eurasian Journal of Educational Research*, 21(92). <https://doi.org/10.14689/ejer.2021.92.6>
- Bhat, A. Z., Naidu, V. R., & Singh, B. (2019). Multimedia cloud for higher education establishments: A reflection. *Advances in Intelligent Systems and Computing*, 691-698. https://doi.org/10.1007/978-981-13-2285-3_81
- Cansu, F. K., & Cansu, S. K. (2019). An overview of computational thinking. *International Journal of Computer Science Education in Schools*, 3(1), 17-30. <https://doi.org/10.21585/ijcses.v3i1.53>
- Casiraghi, B., & Aragão, J. C. S. (2019). Problem-solving methodologies structured on the stages of critical thinking. *Psicol. Escola e Educ.* <https://doi.org/10.1590/2175-35392019010902>
- Ennis, R. H. (2018). Critical thinking across the curriculum: A vision. *Topoi*, 37(1), 165-184. <https://doi.org/10.1007/s11245-016-9401-4>
- Gupta, M. M., Jankie, S., Pancholi, S. S., Talukdar, D., Sahu, P. K., & Sa, B. (2020). Asynchronous environment assessment: A pertinent option for medical and allied health profession education during the covid-19 pandemic. *Education Sciences*, 10(12). <https://doi.org/10.3390/educsci10120352>
- Igwe, P. A., Okolie, U. C., & Nwokoro, C. V. (2021). Towards a responsible entrepreneurship education and the future of the workforce. *International Journal of Management Education*, 19(1). <https://doi.org/10.1016/j.ijme.2019.05.001>
- Jayakumar, U. M. (2008). Can higher education meet the needs of an increasingly diverse and global society? Campus diversity and cross-cultural workforce competencies. *Harvard Educational Review*, 78(4), 615-651. <https://doi.org/10.17763/haer.78.4.b60031p350276699>
- Loes, C., Pascarella, E., & Umbach, P. (2012). Effects of diversity experiences on critical thinking skills: Who benefits? *Journal of Higher Education*, 83(1), 1-25. <https://doi.org/10.1353/jhe.2012.0001>
- Mataniari, R., Willison, J., Hasibuan, M. H. E., Sulistiyo, U., & Dewi, F. (2020). Portraying students' critical thinking skills through research skill development (RSD) framework: A case of a biology course in an Indonesian University. *Journal of Turkish Science Education*. <https://doi.org/10.36681/tused.2020.28>

- Mayhew, M. J., Wolniak, G. C., & Pascarella, E. T. (2008). How educational practices affect the development of life-long learning orientations in traditionally aged undergraduate students. *Research in Higher Education*, 49(4), 337–356. <https://doi.org/10.1007/s11162-007-9081-4>
- Mittal, R. K., Garg, N., & Yadav, S. K. (2018). ‘Quality assessment framework for educational institutions in technical education: a literature survey,’ on the Horizon. *On the Horizon*, 26(3), 270-280. <https://doi.org/10.1108/OTH-08-2017-0066>
- Rai, J., Tripathi, R. C., & Gulati, N. (2020). A comparative study of implementing innovation in education sector due to COVID-19. <https://doi.org/10.1109/SMART50582.2020.9337148>.
- Saidin, N. D., Khalid, F., Martin, R., Kuppusamy, Y., & Munusamy, N. A. P. (2021). Benefits and challenges of applying computational thinking in education. *International Journal of Information and Education Technology*, 11(5), 248–254. <https://doi.org/10.18178/ijiet.2021.11.5.1519>
- Santos, L. F. (2017). The role of critical thinking in science education. *Journal of Education and Practice*.
- Sharma, S., Vijayaraghavan, V., Tandon, P., Kumar, D. R. V., Sharma, H., & Rao, Y. (2012). Dental education: Current scenario and future trends. *Journal of Contemporary Dental Practice*, 13(1), 107-110. <https://doi.org/10.5005/jp-journals-10024-1103>
- Shukla, S., Lakhmani, A., & Agarwal, A. K. (2017). A review on integrating ICT based education system in rural areas in India. <https://doi.org/10.1109/SYSMART.2016.7894531>.
- Styers, M. L., Van Zandt, P. A., & Hayden, K. L. (2018). Active learning in flipped life science courses promotes development of critical thinking skills. *CBE Life Sciences Education*, 17(3), ar39. <https://doi.org/10.1187/cbe.16-11-0332>
- Tunjungsari, H., & Takwin, B. (2021). Understanding critical thinking practice in everyday life through stages of critical thinking skills and disposition. *Mind, Brain, and Education*, 15(3), 225-231. <https://doi.org/10.1111/mbe.12279>
- Wayne Ross, E., & Gautreaux, M. (2018). *Thinking critically about critical thinking Aula abierta*. <https://doi.org/10.17811/rifie.47.4.2018.383-386>

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).