

CRITICAL THINKING IN THE CLASSROOM

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Abstract

Critical thinking has been defined variously by different scholars but it comes down to the ability of an individual to exercise higher levels of thinking in their judgments. A critical thinker reflects on thinking as a process and also applies high level analysis towards decision making as well as problem solving. As researchers have noted, critical thinking develops in stages, from the very rudimentary to the most advanced levels. At the same time, critical thinking does not just develop. Rather, it must be nurtured within an enabling environment. Notably, no learner, even at the earliest age, comes to the learning institution with a blank mind. Every child brings to school knowledge already gathered at home and other environments to which he or she has been exposed. Also, every child is unique, each with varied abilities that are largely controlled by i) the role of the brain and the most active functions, and ii) the exposure or experiences that the child has gone through. This uniqueness makes each child capable in some areas more than others which leads to different talents and levels of creativity. To develop critical and creative thinkers, therefore, learning institutions of all levels should expose learners to experiences that focus on enhancing their current individual and unique levels of knowledge to higher levels. Learning activities, for instance, must be geared towards development of the higher level of thinking, that is, critical thinking. Unfortunately, this has not been the case in many learning environments. Traditionally, the teacher has always usurped the role of teaching and learning, and the learner has mostly been relegated to the position of a passive listener. In such an environment, the opportunities to develop critical and creative thinking among learners are completely strangled.

This paper explores the concept '*critical thinking*' and how institutions can engage their learners in order to enable them become critical and creative thinkers. Beyond examining the concept, the paper will explore in depth learning activities that enhance the development of higher levels of thinking among learners. Empirical research is expected to follow this initial theoretical paper.

Key words: Critical thinking; Kenya Competency Based Curriculum (KCBC)

Introduction: What is Critical Thinking?

The term 'critical thinking' as applied within the context of learning is thought to have been first made reference to by constructivist John Dewey who referred to it as 'reflective thinking'.

Dewey (1933) defined the term ‘critical thinking’ as “active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends” (p. 9).

The Stanford Encyclopaedia of Philosophy makes the observation that “critical thinking is a widely accepted educational goal. Its definition is contested, but the competing definitions can be understood as differing conceptions of the same basic concept: careful thinking directed to a goal (<https://plato.stanford.edu/entries/critical-thinking/>). Similarly, Watanabe-Crockett (2018) notes that the concept ‘critical thinking’ might be interpreted differently by different people. He goes on to observe that “critical thinking is about thinking *independently*. Critically thinking is about formulating your own opinions and drawing your own conclusions” (<https://globaldigitalcitizen.org/12-strategies-teaching-critical-thinking-skills>).

Doyle (2018) further observes that “critical thinking is one of the most sought-after skills in almost every industry and every workplace. What is critical thinking? It refers to the ability to analyse information objectively and make a reasoned judgment” (<https://www.thebalancecareers.com/critical-thinking-definition-with-examples-2063745>).

It, therefore, is clear that while definitions might vary, they all lead to some form of consensus of the concept - a carefully undertaken thinking process directed to the achievement of a particular goal. A summary of critical thinking is captured in Figure 1.



Figure 1: Critical thinking, Adopted from: https://en.wikipedia.org/wiki/Critical_thinking

In a nutshell, critical thinking should enable learners at all levels to navigate the path between a problem and a solution, as depicted in Figure 2.

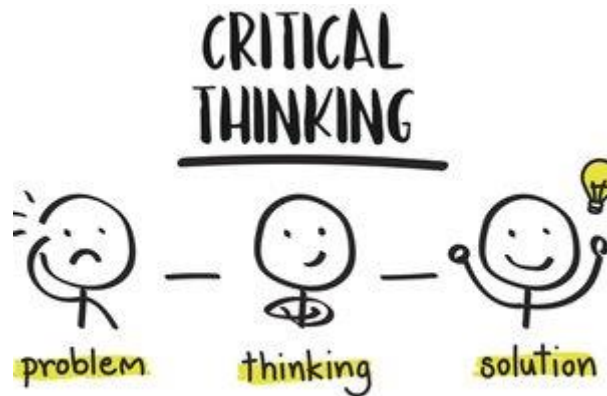


Figure 2: From problem to solution

Image credit: Rawpixel.com/Shutterstock

Critical Thinking within the Kenyan Competency Based Curriculum

Noting that the current 8.4.4. academic system in Kenya is basically academic and exam-oriented (Basic Education Curriculum Framework), a need to design and implement an alternative, skills-based curriculum has been largely viewed as necessary. As the name for the new Competency Based Curriculum (CBC) suggests, learning is intended to be skills-driven. Teachers are viewed as facilitators of the learning process while the learners actively engage in the learning process, and ultimately owning their learning process and progression. To make this process successful, educators must embrace a pedagogical shift from the traditional teacher-centred to the modern learner-centred learning approaches. Subsequently, educators must be knowledgeable of methodologies that can be applied to effectively achieve learning where the learner is at the centre. In the section further below, the paper addresses learner-centred learning methods that have been proven to produce an engaged learner.

The background to the introduction of the Competency-Based Curriculum in Kenya is well captured in the paper *The Why, What and How of Competency-Based Curriculum Reforms: The Kenyan Experience* authored by Kabita and Ji (June, 2017, No.11). The authors note,

Curriculum is the vehicle through which a country empowers its citizens with the necessary knowledge, skills, attitudes and values that enable them to be empowered for personal and national development (p. 4).

They further observe that “Curriculum should, therefore, meet the needs of the individual citizens and the nation” (p. 4). The Kenya Institute of Curriculum Development (KICD) ultimately developed the Basic Education Curriculum Framework (BECF) (2017) to guide the design and implementation of the competency-based model through which these competencies could be achieved. The decision was further informed by the following considerations:

1. Sustainable Development Goals (SDGs);
2. A needs assessment study carried out in 2016;
3. International best practices in education systems and curriculum reforms; and
4. A desire to make learning more meaningful.

The Basic Education Curriculum Framework observes that “the vision of the basic education curriculum reforms is to enable every Kenyan to become an engaged, empowered and ethical citizen”. Further, the document notes,

This will be achieved by providing every Kenyan learner with world class standards in the skills and knowledge that they deserve, and which they need in order to thrive in the 21st century. This shall be accomplished through the provision of excellent teaching, school environments and resources and a sustainable visionary curriculum that provides every learner with seamless, competency based high quality learning that values every learner (p. viii).

Pegged on this claim, it is important for educators at all levels to interrogate the teaching and learning processes that will help realize this vision. BECF further notes that in the context of the Kenyan Competency Based Curriculum (KCBC), “competency will be understood as ‘the ability to apply appropriate knowledge and skills to successfully perform a function’” and that “the curriculum will be designed to emphasize the importance of not only developing skills and knowledge but also applying these to real life situations” (p.9). At the core of this CBC are seven Competencies listed below:

1. Communication and Collaboration;
2. Critical Thinking and Problem Solving;

3. Imagination and Creativity;
4. Citizenship;
5. Digital Literacy;
6. Learning to Learn;
7. Self-Efficacy.

While all the competencies are critical in the new curriculum, the main focus of this paper is critical thinking and its place in learning.

Why Critical Thinking is Important in the Classroom

On the critical thinking competency, the BECF observes,

When learners are empowered with critical thinking, they avoid being subjective, and use logic and evidence to arrive at conclusions. Critical thinking also facilitates exploring new ways of doing things and learner autonomy. Children learn that for every issue there are multiple perspectives that they can explore, rather than a rigid and regurgitation of information (p. 11).

Scholars in education have long observed that critical thinking and problem-solving approaches to learning have often been overshadowed by the traditional approach that focuses on memorization. Raths, Jonas, Rothstein and Wassermann (1967) for instance, argued that memorization and drills, rather than enquiry and reflective learning, was the norm in most schools. Freire (1970) decried this type of teaching and learning that depended almost entirely on memorizing, noting,

Narration (with the teacher as narrator) leads the students to memorize mechanically the narrated content. Worse yet, it turns them into “containers,” into “receptacles” to be “filled” by the teacher. The more completely she fills the receptacles, the better a teacher she is. The more meekly the receptacles permit themselves to be filled, the better students they are. Education thus becomes an act of depositing, in which the students are the depositories and the teacher is the depositor...This is the “banking” concept of education, in which the scope of action allowed to the students extends only as far as receiving, filing, and storing the deposits (pp. 71-72).

Similarly, Hargreaves (1982) made the following observation of the teacher-centred learning whose focus was on memorization:

Teachers are qualified in their subjects; they know; and they are not satisfied until they have told their pupils what they know. In the jargon of the

educationists this is the ‘transmission’ model of teaching: the function of the teacher is to impart knowledge to (in this respect) ignorant pupils, and the most obvious way in which to achieve this is by telling (p. 200).

In contrast to this memorization-driven approach, Freire (1970) argued that “knowledge emerges only through invention and re-invention, through the restless, impatient, continuing, hopeful inquiry human beings pursue in the world, with the world, and with each other” (p. 72). Socrates observed this phenomenon of learning many centuries ago when he claimed: “I shall only ask him, and not teach him, and he shall share the inquiry with me: and do you watch and see if you find me telling or explaining to him, instead of eliciting his opinion” (Socrates c. 400 BC). This is now widely referred to as the Socratic method of learning which is largely inquiry-based and will be discussed later.

While steps may have been taken to move away from the traditional method of teaching, observation in our institutions, from the lower to the higher institutions of learning, however, indicate that many learners are still going through the memorization learning style which is basically focused on the passing of examinations. Complaints of poor analytical skills and the tendency to reproduce lecturer notes by students in assignments and examinations, even at the university level, abound. Yet today the world is constantly bombarded with the call for the 21st century skills, a call for new ways of thinking and doing things. Some of the skills now in demand include communication, collaboration, leadership, creativity and critical thinking. High academic grades are not enough by themselves for a graduate to be considered competent in the new world. The new job market and society in general requires that one is equipped with these other skills, often referred to as soft skills, beyond the academic grades. Locally in Kenya, these are the skills called upon if the country is to achieve its Vision 2030 whose objective is “to transform [Kenya](#) into a newly industrializing, [middle-income](#) country providing a high quality of life to all its citizens by 2030 in a clean and secure environment.” It is, therefore, important that educational institutions at all levels expose their learners to an environment where these skills are learned and nurtured. Ultimately, critical thinking in the classroom leads to critical thinkers and problem solvers in the society.

Developing Critical Thinking

It is worth noting that critical thinking is not a one-time acquired skill. Rather, there are several stages that take the learner from the very rudimentary to the most advanced stages of critical

thinking. Elder and Paul (2010) for instance, talk of six stages of critical thinking development, as listed below:

Stage One: The Unreflective Thinker

Stage Two: The Challenged Thinker

Stage Three: The Beginning Thinker

Stage Four: The Practicing Thinker

Stage Five: The Advanced Thinker

Stage Six: The Accomplished Thinker

Stage One, the unreflective thinker refers to a learner who does not engage in critical thinking, while stage Six, the accomplished thinker, is one who has engaged in the critical thinking process to an extent where they are able to apply the skill to the utmost level. It is also important to add that critical thinking should be part of learning throughout the learner's school life, right from the early years to the advanced years in school. It is not, therefore, enough to start teaching courses on critical thinking at university level for instance, when learners have all along been exposed to learner-passive, teacher-centred approaches in their formative years. For learners to embrace critical thinking as part of their way of thinking, they must be introduced to it early in life.

Towards Critical Thinking: Some Teaching and Learning Methodologies

Carr (1988) observed that while most people recognized the importance of critical thinking in teaching and learning, the methodologies applied in teaching were often defective and did not achieve the objective. This is often the case when teachers are not well prepared to engage learners in critical thinking, or to apply methodologies that enhance critical thinking. In this paper, several methods are suggested as practices that, when well designed and implemented, could promote critical thinking. One of the key methods of enhancing critical thinking is through inquiry, which we shall discuss next.

Inquiry-Based Learning/ Socratic Approach

In contrast to the traditional teacher-centred 'transmission' methods which produce passive learners (discussed above), inquiry-based methods are learner-centred with a focus in producing independent learners who are actively engaged in their learning process. Inquiry-based learning encourages learners to develop as critical thinkers and problem solvers. In this

inquiry-based approach, learners take control of their learning while the teachers facilitate the process. Among other things, learners are encouraged to explore the most effective ways of solving problems. The role of the teacher, therefore, rather than taking the traditional approach of providing or ‘transmitting’ knowledge to the learners, takes the facilitator approach, providing an environment whereby learners are able to explore knowledge through various ways, e.g. through research, reflection, experiments and group discussions among others. Several inquiry-based learning models have been suggested. In the next section we shall explore the 5E inquiry model as proposed by Bybee & Landes (1990).

5E Inquiry-Based Teaching and Learning Methodology

The model is grounded in constructivism (e.g. Piaget, 1926; Dewey, 1910, 1933; Vygotsky, 1978) who argue that learning takes place when learners engage in constructing their own knowledge. Constructivism argues that learners learn when they are able to create meaning out of their interactions and experiences with the world around them. The 5E inquiry-based approach, while originally designed with a focus on the Science class, can be adapted to suit teaching and learning in all other areas and at all levels. It entails five levels, namely: engage, explore, explain, elaborate and evaluate as briefly described next.

Engage: This is the introductory stage and the teacher applies methods that capture the learner’s interests. The teacher may use various activities in the classroom, including demonstration, reading aloud, assessment of prior knowledge and also asking questions about the topic.

Explore: At this level, learners go a bit deeper and may carry out cooperative activities to explore the topic and to develop a common set of concrete knowledge.

Explain: Learners develop their own explanations and listen to each other through collaborative learning. At this point, the teacher may make clarification on concepts, introduce new vocabulary, and may correct misconceptions. Learners get the opportunity to critique, ask questions and may engage in extended learning activities to develop further concrete explanations.

Elaborate: As learners advance to these higher levels of learning, they may carry out further activities to deepen their knowledge, answer new questions, or confront misconceptions.

Evaluate: at this level, learners are considered advanced in their learning process and they may engage in sophisticated learning activities that could include self/peer evaluation of the learning process. The teacher evaluates student learning of concepts and skills. Evaluation may lead into a new 5E cycle of learning to expand on or correct concepts.

For a learner to develop to the advanced level of learning where they are fully engaged in critical thinking and can engage in evaluative activities, they must be exposed to a learning environment that enhances their development. In the next section we shall suggest and examine a few methods that nurture critical thinking.

Some Learning Methods for Enhancing Critical Thinking in the Classroom

With the understanding that critical thinking is independent thinking in a self-regulated and self-corrective manner, the following methods are some of those considered effective in developing the different levels of inquiry and ultimately critical thinking in learners in the classroom setting. This is especially relevant as the Kenyan government introduces CBC.

- 1. Socratic Method:** The Socratic Method is inquiry-based and encourages the learner to seek solutions to problems. When using the Socratic Method, the teacher acts as a model of critical thinking by showing respect for the learners' initial understanding of a given topic, probing their understanding, and showing genuine interest in their thinking. The teacher asks questions that are more meaningful and relevant to a given topic and allows learners to develop their own meaning and understanding. During the development of critical thinking, the teacher creates and sustains an intellectually stimulating classroom environment and acknowledges the value of the student in that environment. In an intellectually open, safe, and demanding learning environment, learners will be challenged, yet they will still be comfortable in answering questions honestly and fully in front of their peers. This method provokes the minds of learners and inspires a quest for knowledge. The questions posed can be a review of a previous lesson, assignments in or out of class or from a play or video that the learners have watched. This form of learning brings about explorations of various situations and brainstorming. Questions can also be based on project learning scenarios that enable them discover various aspects of the communities they live in. Inquiry-based learning

fosters problem solving techniques and sharpens knowledge retention among learners without necessarily going through memorization.

2. Group discussion

Critical thinking skills develop best through teamwork and collaboration. Learners view their peers as an excellent source of information. Through group discussions learners learn to give their views freely and develop confidence when speaking in small groups. Furthermore, they learn to critically apply knowledge by explaining themselves in the midst of their peers. They identify with the strengths and weaknesses of others and easily work on their own. They build on their reasoning and have critical perspective on the issue under discussion. The discussion can be based on a current situation, past experiences and what they learnt from it using relevant knowledge.

3. Role playing

Role playing is an excellent method of exercising critical thinking. This involves embodying another person and assuming her or his characteristics. This calls for stretching both the analytical and creative mind. Learners can watch a play, or a video and choose a character whom they wish to enact. They create their own views of a conflict and explain their point of view. This translates their thoughts to visualize themselves as the real characters and encourages critical thinking beautifully. The learners are also guided using the unique mental skills of other characters. Role playing among learners stimulates their thinking capacity and encourages character learning. It is exciting and learner driven. The character strengths and or weaknesses form the priority issues to the learner's choice. Personal biases are expressed and any assumptions on a character freely aired.

4. Research

Learners can be trained to conduct research from early years, even where it entails simply interviewing their parents about their extended family members. Research equips the learner with the skill to search for information individually. They also get to learn how to analyse the data they collect and write reports. Thus the learners become independent and are able to conduct and own their own learning process.

5. Reflective Journaling

Learners are encouraged to keep a regular record of the events taking place in their lives and taking time to reflect on them. Within the learning context, the learner can reflect on what they learn, how they are learning it and also what they could do to improve their learning.

6. Story telling

Stories provide an excellent and fun way of learning. From the use of the most basic folk tales of the escapades of the hare and the hyena to the most sophisticated ones, learners can use stories to reflect on the theme/s of the story and relate them to real life experiences. Stories can be adapted to suit learning in different subjects.

7. Debates

Learners can be issued with topics upon which they conduct intensive research and prepare to engage in an intelligent debate amongst themselves. Apart from enriching their research skills, learners engage in critical thinking as they analyse the topic from both the supporting and the opposing points of view. During the debate, they have to engage in quick thinking as they respond to points raised by the opposing side during the rebuttal session. In addition, debate is a great method for equipping learners with several other skills. For instance, they learn to listen to each other, respond to each other with respect, speak confidently in front of others and also cooperate as members of a team. All these are skills that are highly demanded in the modern work place and society in general.

Some Challenges and Possible Solutions in Implementing Approaches for Critical Thinking

While the development of critical thinking is without doubt a great idea, implementation of the suggested learning methods that enhance it within the CBC classroom may be hindered by several factors, among them the following.

1. Teacher preparedness

Most teachers in the field are a product of the traditional teacher-centred pedagogy which largely shapes their practice. To be able to practise the new learner-centred methods which enhance critical thinking, the teachers themselves need to undergo intensive re-training where they must unlearn the old habits and learn new ones. Until all teachers are well familiarized with these teaching/learning methods, enhancement of critical thinking and other related skills will not be achieved effectively. To counter this challenge, all teachers need to be well trained and prepared in these methods.

2. Large class sizes and time factor

Most of these strategies are best practised in small to moderate class sizes. However, in some cases, especially in public schools, a class may hold as many as 80 -100 learners. The size becomes a challenge as the teacher needs to continually monitor the progress

of each learner. At the same time, a teacher may feel pressured to complete a given syllabus and this jeopardizes the learner-centred approaches which are more time-consuming. To control on class size and time factor, more trained teachers are needed in schools where there are large classes.

3. **Attitude towards the new curriculum**

Change is not always welcome and given the opportunity, people prefer operating within their comfort zones. The new CBC brings with it many changes and demands a mind shift by all those involved, including the learners, teachers and parents, among others. Shifting from the traditional examination-oriented teaching and learning to a new independent and skills-based approach will pose a challenge to many of the stakeholders who may not understand it fully. To develop a positive attitude towards the new ways of learning, it is important for the education agencies involved in the development and implementation of the new curriculum to continuously engage the stakeholders to provide them with relevant education on its benefits.

Conclusion and Way forward

Critical thinking is now recognized world-wide as one of the fundamental aspects of learning that enables the learner to engage effectively in the outside world. Critical thinking equips the learner with the ability to reason, analyse and evaluate issues intelligently leading to ability to make good decisions and solve problems effectively. To achieve these abilities, a learner must be exposed to a learning environment that richly embraces learner-centred methods that enhance critical thinking. At the same time, teachers must be well prepared to engage in a new way of teaching which differs from what they have traditionally been used to. In Kenya, teachers need to be re-trained and equipped with new delivery methods in order for them to be able to effectively implement the new KCBC. At the same time, on-going research is required to continuously monitor the progress of the new curriculum in order to provide effective feedback and suggestions for improvement. As a follow-up to this paper, the authors intend to engage in field research which will provide a detailed analysis of the development of critical thinking skills in the new CBC classroom.

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