Chapter Four

Basic Concepts of Critical Thinking

4.1 Introduction

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. Conceptions differ with respect to the scope of such thinking, the type of goal, the criteria and norms for thinking carefully, and the thinking components on which they focus. Its adoption as an educational goal has been recommended on the basis of respect for students' autonomy and preparing students for success in life and for democratic citizenship. "Critical thinkers" have the dispositions and abilities that lead them to think critically when appropriate. The abilities can be identified directly; the dispositions indirectly, by considering what factors contribute to or impede exercise of the abilities. Standardized tests have been developed to assess the degree to which a person possesses such dispositions and abilities. Educational intervention has been shown experimentally to improve them, particularly when it includes dialogue, anchored instruction, and mentoring. Controversies have arisen over the generalizability of critical thinking across domains, over alleged bias in critical thinking theories and instruction, and over the relationship of critical thinking to other types of thinking.

4.2 Meaning and Definition of Critical Thinking

Meaning

Critical thinking is the analysis of facts to form a judgment. The subject is complex, and several different definitions exist, which generally include the rational, skeptical, unbiased analysis, or evaluation of factual evidence. Critical thinking is self-directed, self- disciplined, self- monitored and self-corrective thinking. It presupposes assent to rigorous standards of excellence and mind full command of their use. It entails effective communication and problem-solving abilities as well as a commitment to overcome native egocentrism and sociocentrism.

History

The earliest documentation of critical thinking are the teachings of Socrates recorded by Plato. Socrates established the fact that one cannot depend upon those in "authority" to have sound knowledge and insight. He demonstrated that persons may have power

and high position and yet be deeply confused and irrational. He established the importance of asking deep questions that probe profoundly into thinking before we accept ideas as worthy of belief. He established the importance of seeking evidence, closely examining reasoning and assumptions, analyzing basic concepts, and tracing out implications not only of what is said but of what is done as well. His method of questioning is now known as “Socratic questioning” and is the best known critical thinking teaching strategy. In his mode of questioning, Socrates highlighted the need for thinking for clarity and logical consistency. Socrates asked people questions to reveal their irrational thinking or lack of reliable knowledge. Socrates demonstrated that having authority does not ensure accurate knowledge. He established the method of questioning beliefs, closely inspecting assumptions and relying on evidence and sound rationale. Plato recorded Socrates' teachings and carried on the tradition of critical thinking. Aristotle and subsequent Greek skeptics refined Socrates' teachings, using systematic thinking and asking questions to ascertain the true nature of reality beyond the way things appear from a glance. Socrates set the agenda for the tradition of critical thinking, namely, to reflectively question common beliefs and explanations, carefully distinguishing beliefs that are reasonable and logical from those that—however appealing to our native egocentrism, however much they serve our vested interests, however comfortable or comforting they may be—lack adequate evidence or rational foundation to warrant belief. Critical thinking was described by Richard W. Paul as a movement in two waves (1994).The "first wave" of critical thinking is often referred to as a 'critical analysis' that is clear, rational thinking involving critique . Its details vary amongst those who define it.

According to Barry K. Beyer (1995), critical thinking means making clear, reasoned judgments. During the process of critical thinking, ideas should be reasoned, well thought out, and judged. The U.S. National Council for Excellence in Critical Thinking defines critical thinking as the "intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action."

Etymology

In the term critical thinking, the word critical, (Grk. κριτικός = kritikos = "critic") derives from the word critic and implies a critique; it identifies the intellectual capacity and the means "of judging", "of judgment", "for judging", and of being "able to discern". The intellectual roots of critical thinking are as ancient as its etymology, traceable, ultimately, to the teaching practice and vision of Socrates 2,500 years ago who discovered by a method of probing questioning that people could not rationally justify their confident claims to knowledge.

Definitions

Traditionally, critical thinking has been variously defined as follows: "The process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information to reach an answer or conclusion" "Disciplined thinking that is clear, rational, open-minded, and informed by evidence" "Purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based" "Includes a commitment to using reason in the formulation of our beliefs" The skill and propensity to engage in an activity with reflective scepticism (McPeck, 1981) Thinking about one's thinking in a manner designed to organize and clarify, raise the efficiency of, and recognize errors and biases in one's own thinking. Critical thinking is not 'hard' thinking nor is it directed at solving problems (other than 'improving' one's own thinking). Critical thinking is inward-directed with the intent of maximizing the rationality of the thinker. One does not use critical thinking to solve problems—one uses critical thinking to improve one's process of thinking. "An appraisal based on careful analytical evaluation" Contemporary critical thinking scholars have expanded these traditional definitions to include qualities, concepts, and processes such as creativity, imagination, discovery, reflection, empathy, connecting knowing, feminist theory, subjectivity, ambiguity, and inconclusiveness. Some definitions of critical thinking exclude these subjective practices.

4.3 Principles of Critical Thinking

PRINCIPLES OF CRITICAL THINKING

- Knowledge is acquired only through thinking, reasoning, and questioning. Knowledge is based on facts.

- Belief is not knowledge. Beliefs are opinions acted upon as if they were facts.

- Opinions are not based on facts, knowledge, or reasoning.

- Critical thinking is an active process based on applying analysis, the synthesis of data, and your ability to assess the information being received.

- It is only from learning how to think that you learn what to think.

- The unquestioning acceptance of what another says as fact is not learning nor is it part of the skill of thinking critically. It, in fact, inhibits any learning from taking place.

- To become educated you need to learn how to gather, analyze, synthesize, assess,

and apply data for yourself.

- Critical thinking is an organized and systematic process used to judge the effectiveness of an argument.

- It is void of emotional constrictions and is, consequently, unbiased.

- In order to be most effective as a critical thinker you must have data and facts available for a rebuttal of an argument.

- Effective argumentation is based on empirical evidence.

- Critical thinking is a search for meaning.

- The meaning is for you in what an author or speaker says, implies, and insinuates.

- It is a way of making sense out of what you are reading or hearing in order to find the validity of the data being presented.

- Critical thinking is a skill that can be learned.

- It is based on active, logical reasoning, on facts and evidence and a desire to learn.

- Your attitude toward learning is all-important in being a critical thinker.

- It is important that a high value be placed on learning in order for learning to be useful.

- The skill of critical thinking is learned by doing and by an inter-change of information and ideas with others who are assessing the same things. In this way one's ideas and arguments can be presented and evaluated.

- You must be actively involved in exchanging thoughts and ideas in order to become a critical thinker. Sitting passively by is not how any skill is learned.

4.4 Criterion/Standard of good Argument

What is a good argument?

In this tutorial we shall discuss what a good argument is. The concept of a good argument is of course quite vague. So what we are trying to do here is to give it a somewhat more precise definition. To begin with, make sure that you know what a sound argument is.

Criterion #1: A good argument must have true premises.

This means that if we have an argument with one or more false premises, then it is not a good argument. The reason for this condition is that we want a good argument to be one that can convince us to accept the conclusion. Unless the premises of an argument are all true, we would have no reason to accept to accept its conclusion.

Criterion #2: A good argument must be either valid or strong

Is validity a necessary condition for a good argument? Certainly many good arguments are valid. **Example:**

All whales are mammals.

All mammals are warm-blooded.

So, all whales are warm-blooded.

But it is not true that good arguments must be valid. We often accept arguments as good, even though they are not valid. **Example:**

No baby in the past has ever been able to understand quantum physics.

Kitty is going to have a baby soon.

So Kitty's baby is not going to be able to understand quantum physics.

This is surely a good argument, but it is not valid. It is true that no baby in the past has ever been able to understand quantum physics. But it does not follow logically that Kitty's baby will not be able to do so. To see that the argument is not valid, note that it is not logically impossible for Kitty's baby to have exceptional brain development so that the baby can talk and learn and understand quantum physics while still being a baby. Extremely unlikely to be sure, but not logically impossible, and this is enough to show that the argument is not valid. But because such possibilities are rather unlikely, we still think that the true premises strongly support the conclusion and so we still think that the argument is a good one. In other words, a good argument need not be valid. But presumably if it is not valid it must be inductively strong. If an argument is inductively weak, then it cannot be a good argument since the premises do not provide good reasons for accepting the conclusion.

Criterion #3: The premises of a good argument must not beg the question

Notice that criteria #1 and #2 are not sufficient for a good argument. First of all, we certainly don't want to say that circular arguments are good arguments, even if they happen to be sound. Suppose someone offers the following argument:

It is going to rain tomorrow. Therefore, it is going to rain tomorrow.

So far we think that a good argument must (1) have true premises, and (2) be valid or inductively strong. Are these conditions sufficient? The answer is no.

Consider this **example:**

Smoking is bad for your health.

Therefore smoking is bad for your health.

This argument is actually sound. The premise is true, and the argument is valid, because the conclusion does follow from the premise! But as an argument surely it is a terrible argument. This is a circular argument where the conclusion also appears as a premise. It is of course not a good argument, because it does not provide independent reasons for supporting the conclusion. So we say that it begs the question.

Here is another **example** of an argument that begs the question:

Since Mary would not lie to her best friend and Mary told me that I am indeed her best friend, I must really be Mary's best friend.

Whether this argument is circular depends on your definition of a "circular argument". Some people might not consider this a circular argument in that the conclusion does not appear explicitly as a premise. However, the argument still begs the question and so is not a good argument.

Criterion #4: The premises of a good argument must be plausible and relevant to the conclusion

Here, plausibility is a matter of having good reasons for believing that the premises are true. As for relevance, this is the requirement that the subject matter of the premises must be related to that of the conclusion. Why do we need this additional criterion? The reason is that claims and theories can happen to be true even though nobody has got any evidence that they are true. If the premises of an argument happen to be true but there is no evidence indicating that they are, the argument is not going to be persuasive in convincing people that the conclusion is correct. A good argument, on the other hand, is an argument that a rational person should accept, so a good argument should satisfy the additional criterion mentioned.

Summary

So, here is our final definition of a good argument:

A good argument is an argument that is either valid or strong, and with plausible premises that are true, do not beg the question, and are relevant to the conclusion. Now that you know what a good argument is, you should be able to explain why these claims are mistaken. Many people who are not good at critical thinking often make these mistakes:

"The conclusion of this argument is true, so some or all the premises are true." "One or more premises of this argument are false, so the conclusion is false." "Since the conclusion of the argument is false, all its premises are false." "The conclusion of this argument does not follow from the premises. So it must be false."

1.5 Factors Affecting Critical Thinking

What are the common pitfalls or barriers to thinking critically and analytically? Some of these were highlighted in the visual summary, and include:

- **Misunderstanding** this can arise due to language or cultural differences, lack of awareness of the process involved, or a misunderstanding that critical thinking means making 'negative' comments.
- **Reluctance to critique** the 'norm or experts in a field and consider alternative views (feeling out of your 'comfort zone' or fearful of being wrong).
- **Lack of detailed knowledge** superficial knowledge (not having read deeply enough around the subject).
- **Wanted to know the answers without having to ask questions.**

Why do you think being aware of these potential pitfalls is important?

As a critical and reflective thinker, you will need to be aware of the barriers, acknowledge the challenges they may present, and overcome these as best you can. This starts with an understanding of expectations. Some students feel anxious about questioning the work of experts. Critical thinking does not mean that you are challenging someone's work or telling them that they are wrong, but encourages a deeper understanding, a consideration of alternative views, and engagement in thought, discourse or research that informs your independent judgment. At postgraduate level you will also need to read widely around a subject in order to engage effectively with critical and analytical thinking, and to ask questions: there are no 'right' or 'wrong' answers, only supported arguments. This is at the heart of postgraduate study.

Critical thinking encourages you to be constructive, by considering the strengths and weaknesses of a claim and differing sides to an argument. It helps you to clarify points,

encourages deeper thought, and allows you to determine whether information that you come across is accurate and reliable. This helps you to form your own judgment, and drives research forward.

People can find it difficult to think critically, irrespective of their education or intellectual ability. The key to understanding critical thinking is not only knowing and making sure that you understand the process, but also being able to put this into practice by applying your knowledge.

Critical and reflective thinking are complex and lifelong skills that you continue to develop as part of your personal and professional growth. In your everyday life, you may also come across those who do not exercise critical thinking, and this might impact on decisions that affect you. It is important to recognize this, and to use critical and reflective thinking to ensure that your own view is informed by reasoned judgment, supported by evidence.

Take another look at the visual summary. You will see two aspects to critical thinking: one focusing on the disposition of the person engaged in critical and reflective thinking, and the other concerning their abilities. Let's focus here on dispositions. At a personal level, barriers to critical thinking can arise through:

- An over- reliance on feelings or emotions
- Self- centered or societal/cultural- centered thinking (conformism, dogma and peer- pressure)
- Unconscious bias, or selective perception
- An inability to be receptive to an idea or point of view that differs from your own (close- mindedness)
- Unwarranted assumptions or lack of relevant information
- Fear of being wrong (anxious about being taken out of your 'comfort zone')
- Poor communication skill or apathy
- Lack of personal honesty.

Be aware that thinking critically is not simply adhering to a formula. For example, reflect on the following questions:

How can you communicate with those who do not actively engage with critical thinking and are unwilling to engage in a meaningful dialogue?

How would you react or respond when you experience a lack of critical thinking in the media, amongst your own family members, colleagues at work, or on your course?

1.6 Relevance of Critical Thinking

Relevance of Critical Thinking in both the classroom and the outside world Essay

Importance in the Classroom

Critical thinking is defined as the focused and logical capacity to develop helpful ideas in life. In the classroom, critical thinking skills are important in achieving success.

One of the positive effects that result from critical thinking is the ability to develop excellent writing skills. The ability to approach problems from different angles is enhanced by appropriate application of critical thinking skills. Critical thinking also helps students to evaluate and organize arguments through logical and guided interpretation of various contexts.

There are different types of reasoning in critical thinking. There is deductive reasoning, which derives several concepts and uses them to make a conclusion. By use of type of critical thinking, the student has the ability to analyze and evaluate different concepts to come up with the best solution. Inductive reasoning is another category, which enables an individual to develop a convincing solution to a particular problem. These types of reasoning also enable students to make logical and informed decisions in class (Moore 66)

Critical thinking skills save a lot of time in class, as students find the shortest and most effective ways of dealing with the problems they encounter in class. Evaluation of alternatives is another benefit that students gain when they apply critical thinking skills.

Critical thinking skills also help in doing away with ambiguity and enhancing effectiveness (Ellis and Toft 279). Using comparison models in critical thinking, students use past events to project their expectations. Critical thinkers are able to differentiate between emotional and rational ideas. This attribute helps them to enhance the precision and accuracy of their arguments.

Rationality and logic help the students to improve their problem- solving skills and enhance the ability to solve classroom problems (Moore 61). Critical thinking skills enhance students' communication skills, writing skills and learning skills, and as a result they become more confident and excellent in everything they do.

Importance in the Outside World

In the outside world, application of critical thinking skills is equally essential. At the workplace, critical thinking enhances the capacity and capability to make important decisions related to particular tasks. Critical thinking helps our appreciate the fact that

every customer has his/her own preferences. Based on past activities, critical thinking skills help to understand our needs of each client, without telling to do so.