**Development of critical thinking in children and adolescents – Characteristics**

**Practical Applications in Counseling**

**Prof. Annamaria Borlean-Elek, PhD**

Man has an information processing ability aimed at acquiring knowledge, know-how, and cognitive skills required to solve problems and, implicitly, to adapt to the environment.

Reviewing the criterion of finality, Mielu Zlate (1999) has identified the following types of thinking:

* Reproductive thinking,
* Productive thinking and
* Critical thinking.

Some authors believe that productive and critical thinking are two sides of the same coin, as the former has usefulness and value only if its products have been critically analyzed and assessed for rational substantiation and foundation.

Productive thinking involves the following skills: flexibility, originality, fluency, elaboration, changing, imagination, associative thinking, and metaphoric thinking. The purpose of productive thinking is to stimulate curiosity and promote divergence. Critical thinking involves logical thinking and reasoning, including skills such as comparison, classification, sequencing, cause-effect, structuring, analogies, argumentation, deductive and inductive reasoning, forecasting, planning, hypotheses, and critique.

The activity categories that are most often involved in stimulating the development of a critical spirit involving processes like thinking and language are: mathematical activities, language education activities, environmental awareness activities, as well as integrative activities, which often call on a multidisciplinary/interdisciplinary approach of the content. By its nature and manifestations, critical thinking manifests itself in two essential dimensions: a social dimension, according to which learning and collaborative work lead to the development of human solidarity, and a pragmatic dimension – learning based on the development of critical thinking creates an opportunity for the students’ active involvement in the activity by arousing curiosity and solving life problems.

Characteristics of children and teenagers used to think critically:

* They become responsible and self-sufficient in the acquisition of knowledge;
* They have the courage and boldness to think atypically and to assume the risk of justifying their own opinions;
* The have increased self-esteem;
* They are aware of their own value;
* They are self-confident;
* They are receptive to novelty and willing to learn;
* They show respect and interest to the originality of others’ arguments (professors, children, other adults).

Thinking critically means: holding valuable and useful knowledge and having convictions and beliefs founded on this knowledge; forming independent opinions and accepting their assessment; subjecting one’s ideas to constructive skepticism for substantiation; building arguments to flesh out opinions; demonstrating flexibility, tolerance and respect for others’ opinions; accepting or rejecting others’ opinions only based on arguments; actively participate in the elaboration of solutions; collaborating; and learning to think efficiently, which entails more rationality and less subjectivism not rooted in pertinent arguments.

Critical thinking is learned by practice and awareness. It represents a skill that must be encouraged and developed in an appropriate learning environment. As a result of this skill, by their own experience under adult guidance (parents, school counselors, educators), adolescents acquire certain abilities and skills.

Learning to think critically is efficient if certain requirements are met:

* Creating learning situations and allotting the required time;
* Encouraging students to think independently, to speculate, and to reflect;
* Accepting a diversity of opinions and ideas;
* Active engagement by confronting ideas, cooperation and collaboration to find appropriate solutions;
* Convincing students that they will not be ridiculed for the opinions they express;
* Confidence in each student’s ability to think critically;
* Positive appreciation of critical thinking.

In this type of activity, the teaching/learning methods used permanently push the student to self-assess, self-appreciate and self-correct in relation to the other students with whom they learn in a cooperative manner or in relation to the model.

**Productive thinking techniques:**

**I. Brainstorming**

The essence of the method consists of intentionally separating the act of imagining something from the critical thinking stage. Two fundamental principles are the basis of brainstorming: any individual is capable of producing ideas and quantity develops quality.

An optimal brainstorming session entails some requirements: suspension of any type of criticism (self-criticism); free manifestation of imagination; stimulating the biggest possible output of ideas; students may express their opinion on the selected topic orally, freely and spontaneously, without observing a particular order or engaging in long discussions or debates; it is recommended to take over the ideas of the other group members and to develop such ideas.

Challenges:

1. How to treat an individual that offends/ignores us

**II. Brainstorming that involves role playing:** in this situation, the moderator can intervene to facilitate idea-seeking by assigning intervention-specific roles. The moderator may ask how a problem is perceived from various X, Y, Z standpoints (e.g., the standpoint of the teacher/parent/press/school management/older and younger classmates).

Specialists at Harvard School of Education have developed the concept of “**thinking routines**” within a project dedicated to the development of thinking skills in children. Such routines consist of learning and systematically applying simple steps. For instance, “I see . . . I believe that . . . I wonder . . .” Ask the child to carefully observe an objects that piques their interest, then ask them to answer the following questions:

“What do you see?” . . . “I see . . .”

“What do you think about that?” . . . “I think that . . .”

“What does it make you wonder?” . . . “I wonder if . . .”

Stimulate the child to provide rational and logical answers. Practicing this thinking pattern will help the child to go from an objective situation – what they see – and to generate alternative interpretation hypotheses.

**III. Random word method**

In his book “Teach Your Child How To Think”, Edward de Bono mentioned the random word method as “a powerful lateral-thinking method that is very easy to use.” Usually, associating a word with an out-of-context situation generates new connections in our mind, often producing an instant Eureka effect.

How to apply this method?

* Write a series of random words on pieces of paper and put them in a hat. Close your eyes and pull out a piece of paper. Or
* Open a dictionary or a newspaper randomly and choose a word. Or
* Generate a random word using a computer.

As soon as you have your word, find all associations and see which can be applied to your problem.

Challenges:

You have to tell a story to your classmates. You have no books at your disposal to this end. Your random word is “drawer.”

**IV. Problem reversal**

In his book Tao Te Ching, Lao Tzu said: “The wise leader knows how to be creative. In order to lead, the leader must learn to follow. In order to prosper, the leader must learn to live simply. In both cases, it is the intersection that is creative. All behavior consists of opposites; learn to see things backward, inside out and upside down.”

**How to apply problem reversal?**

Find a problem and try to look at it from the opposite angle. Change a positive sentence into a negative sentence or think of something that the person in front of you doesn’t do. Facing a problem? Think of an activity that does not involve said problem and add the phrase “What if . . .” to the start of the sentence.

**Challenges:**

1. Is your job concerned with customer relationships or sales? Make a list of all of the reasons why customers *wouldn’t* buy from your company.

2. You have an urgent matter to solve for the next day. What if you went for a walk in the park and solved the problem after you got back?

**V. Imitation technique**

Think about the multitude of information circulating nowadays. How many of the ideas we generate daily are original? We’ve made a habit of imitating one another. Why not use this to our advantage? If you’re a novice and have not found your own style, by constant imitation you end up defining yourself. Here are some historical examples that confirm this rule: The Beatles started out by singing covers, Beethoven initially played the oeuvres of his contemporaries, jazz musician usually insert rhythms of famous songs in their concerts. As long as you have a good grasp of an idea, you can use it as if it were your own.

When asked “What is originality?”, William Inge gave the funniest answer: “Undetected plagiarism.”

**Challenges:**

1. Pick a literary work of art or a movie and imagine what would its parody look like.

2. Starting with a song you like, imagine what would a different version of it sound like (a version that is specific to your style).

3. While reading a novel or a story, imagine what would a movie based on that book look like. If you want an even more substantial challenge, imagine an animated adaptation.

**IV. Destroying assumptions**

What would happen if everyone would be paid not to work? What would you do if you were the only one left alive after a war? What would you do if you could live without sleeping at all?

A useful method to develop productive (creative) thinking is to generate a list of assumptions on a certain topic and then imagine what could happen if they were true. If your answer to one of these assumptions cannot be made into a reality, eliminate that assumption and move onto the next one.

Challenges:

1. What would change if there were no catalogs?

2. How much would your income increase or decrease if you were not to set a price for your products/services, i.e., if you were to ask your customer to pay what they think it’s worth?

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