Designing Curricular Frameworks for Critical Thinking Development

Daniel Andronache[a] , Muşata Bocoş[a]*

[a] Babes-Bolyai University, Faculty of Psychology and Educational Sciences, Educational Sciences Department.
7 Sindicatelor Street, 400029, Cluj-Napoca, Romania

Abstract

Keywords:
critical thinking;
skills;
evocation;
making sense;
reflection

In order to adapt successfully at a changing society, students will need the ability to select the correct information, to adapt them to the context and decide what is and what is not important, so they will need to think critical. This paper aims to approach critical thinking seen as a skill required in today's social context when holding information does not prevail, but how it is used. This article will present the need of the critical thinking, but also the need to designing a curricular framework aiming to develop it.

Zusammenfasung

Schlüsselworte:
Kritisches Denken;
 Fähigkeiten;
 Evokation;
Sinn machen;
Reflexion;

Dieses Papier soll kritisches Denken als Fähigkeit in dem heutigen sozialen Kontext sehen als nicht erforderlich beim Beisitz von Informationen sondern wie diese verwendet werden. Dieser Artikel zeigt die Notwendigkeit für die Erstellung von kritischem Denken. Um sich erfolgreich an eine sich wandelnde Gesellschaft anzupassen, benötigen die Schüler die Fähigkeit, die richtigen Informationen auszuwählen, sie an den Kontext anzupassen und zu entscheiden, was ist und was nicht wichtig ist, also müssen sie kritisch denken.

1. Introduction

In today's society, when information is no longer a problem, being able to find it is relatively easy now, in books, libraries or on the Internet, the question now is selecting what is relevant. So, for students to know or learn to select what is important, relevant, valuable or useful or learn to create connections between information, training critical thinking plays an important role.

There are many definitions of critical thinking data over time but most include concepts such as: careful analysis, evaluation, knowledge, personal beliefs. Barnes (2005) says critical thinking process encourages students to learn that what is important is not what it seems on the surface, the truth can not be found on the surface, thus maintaining a healthy skepticism is an essential condition for critical thinking. According to the National Council for Excellence in Critical Thinking (USA), critical thinking is based on a set of skills meant to help students in conceptualizing, analyzing, evaluating and applying information in practice. So we can define critical thinking as an active process of goal-orientated knowledge through which information is reinstated or reinvented. In order to adapt successfully at a changing society, students will need the ability to select the correct information, to adapt them to the context and decide what is and what is not important, so they will need to think critical.

2. Critical thinking can be learned through an adequate curricular framework

Browne & Freeman (2000) consider critical thinking as a mental habit that involves examination, testing and practical training, so it is a process that is not born naturally. So to develop student's critical thinking, teachers must create the necessary

*Corresponding author
E-mail address: daniel.andronache@ubbcluj.ro

learning framework built on the premise: what we know determines what we can learn.

The development of critical thinking presented in the literature as a sustainable curricular framework refers to Evocation, Making sense of and Reflection - **The EMR** (Temple Ch. Et al., 2003)

Evocation is the stage in which occurs prior discussion with the student on the subject to be taught: what is known about the subject, what do we want to know, what do we want to know in addition, why must we be aware of these issues?

Making sense is made by students as they seek information to confirm their expectations.

Reflection is the previous discussion by answering questions raised by the evocation phase.

So creating this framework, the student makes several important cognitive activities, he is actively involved in trying to remember what it knows about a topic, determinate him to analyze his knowledge, to analyze, to compare and begin to reflect on the subject that he will then study in detail. By involving critical thinking, learning new correlation is no more than adjusting what is already known, in order that students understand new information on the background of previous knowledge.

Another goal pursued by the ERR in the development of critical thinking is the activation of students. To ensure critical thinking students must be actively involved in the learning process and will thus be aware of their thinking, their own cognitive schemes and in this manner learning process will become more efficient, because understanding sustainability depends on linking new knowledge with existing schemes .

Another way for ERR to contribute to learning critical thinking is to establish objective investigation, when there is an aim study becomes more efficient. Establishing learning objectives will make much easier self-evaluation because it exists a self-reference system, an already established performance indicator. Also, setting learning objectives can determine developing critical thinking from the prospective of analyzing the manner in which we can improve the learning process if the results do not coincide fully with the objectives set.

3. How to recognize a student who thinks critically?

Of course, we know the definition of critical thinking, we can implement the framework for the development of critical thinking, but how can we tell if after creating the ERR system our students have learned to think critically, which are the manifest behavior of critical thinking? A student who learned the components of critical thinking manifests the following behaviors (R. Paul, R. Elder, 2003):

- Formulates problems and asks questions

- Accumulates and evaluates relevant information, interprets them

- Reach conclusions and solutions, evaluating them critically after relevant standards

- Thinks free, sees alternative solutions, does not give up

- Communicates, cooperates with others to find solutions to complex problem.

So critical thinking is self-directed, self-regulated and self-assessed, thereby implies effective communication in order to reduce student's self-centeredness. For students to get and to show such behavior is needed, of course, their involvement in specific activities, but at the same time it is necessary to respect some general conditions (Paul R. R. Elder, 2003):

a. All judgments have a purpose

- Students will have the time to determine theirs purpose

- Students will be helped to distinguish the main purpose of the secondary ones

- Students will be encouraged to review constantly the progress in achieving the goal

- Students will be helped to set realistic goals and relevant

b. All judgments are an attempt to solve problems or an attempt to respond to a question

- Encourage students to ask themselves questions in many different forms

- Encourage students to cut the cube in the sub-questions question

- Encourage students to ascertain whether the question or problem has only one correct answer

c. All judgments are produced from a particular perspective

- Encourage students to present their point of view

- Encourage students to identify other points of view and to identify both strengths and weaknesses

d. All judgments are based on data and information

- Teach students to limit claims to those which are supported by evident information

- Encourage students to seek information that could contradict their knowledge and other information to support them

- Encourage students to ensure that all information that they use are clear, accurate and relevant to the point of view they are backing

- Students must ensure that they reviewed the necessary information

e. All judgments have implications and consequences

- Encourage students to identify positive and negative consequences of their thinking

- Encourage students to consider as many possible consequences of their thinking

It is noted so that critical thinking training is carried out systematically by encouraging the students to analysis, self-analysis, reflection and communication, looking at reasoning from several points of view in order to improve learning.

As a conclusion, to the analyze made above to reasoning we can draw critical thinking elements. They are (Temple Ch. et al., 2003):

- Establish purpose

- Identify the relevance of information

- Establishing inferences/ conclusions

- Identify concepts

- Anticipate the consequences

- Formulation of the view

- Formulating questions

To use efficiently these elements, during the learning process students should be encouraged to answer to the next questions:

Establishing the goal:

- What do I want to accomplish?

- Which side are my goals?

Identification of the relevant information:

- Which information I use to achieve the goal?

- Which is the relevant information?

Setting inferences/ conclusions:

- How have I come to that conclusion?

- Is there another way to interpret information?

- Could have I reached a different conclusion?

Identify key concepts:

- Which is the main idea?

- Can I explain this idea?

Anticipating the consequences:

- Which are the consequences of my behavior?

The wording of point of view:

- How can I justify my point of view?

- There may be others?

The wording of questions:

- Which are my doubts?

- How should I formulate questions to obtain the desired information?

As mentioned above, creating the Evocation, Making sense of and Reflection frame, is a fundamental element in the conduct of an activity that wants to develop student's critical thinking.

4. Conclusions

Critical thinking is a complex process that begins with the assimilation of knowledge, the acquisition of cognitive operations and cognitive procedures for processing information, continues with the formation of beliefs and convictions which lead to decision making and ends with the manifestation of appropriate and effective adaptive behavior.

Not all knowledge is useful and valuable. Knowledge has value when they are understood and thereby prove useful in solving the problems of life and can be put into practice in a creative, constructive manner. To successfully cope with daily demands, people need to know many things, to obtain more information. But the explosion of information and human ability to have unfettered access to information around the world often creates confusion and causes anxiety. In a fast changing world, a democratic and open society where information is rapidly deformed, people must learn to discern between what is important or not, between what has valuable and practical use and which does not possess such qualities, to dismiss with arguments false information, irrelevant and unnecessary and to retain the most genuine, relevant, useful. That means they must think critically, creatively, constructively, efficiently. Critical thinking is a condition and a way to achieve effective learning which is essential for the development of individual personality.

References

Barnes, C.H (2004), *Critical thinking revisited: Its past, present, and future. New Directions for Community Colleges,* Houghton Mifflin, New York

Paul. R, L. Elder (2003), *La mini-guia para el pensamiento critico,* Foundation for Critical Thinking

Keeley, S.M., Browne, M.N., & Kreutzer, J.S. (1982), A comparison of freshmen and seniors on general and specific essay tests of critical thinking, in *Research in Higher Education*, 17(2), 139-154

Tremblay, Jr. Kenneth, R., & Downey, E. P. (2004), Identifying and evaluating research-based publications: Enhancing undergraduate student critical thinking skills, in *Research in Higher Education*, 124(4), 734-740

Temple Ch., Stelle J.L, Meredith K., S (2003*), Lectura şi scrierea pentru gândirea critică*, EDP, Bucuresti.

Authors note:

Daniel Andronache, PhD, is an Assistant Professor at the Department of Educational Sciences, Babeş-Bolyai University, Romania. He is graduate in Pedagogy (since 2008), master degree in School Counseling (since 2010) and PhD in educational sciences (since 2013). He made a research internship at the University of Vienna and in 2014 he received a Research Fellowship in educational sciences at Babeş-Bolyai University. Daniel Andronache' main fields of interest include: curriculum design, competence-based curriculum, systemic pedagogy, and teacher training.

Musata Bocos is a Professor and Ph.D. Coordinator at the Faculty of Psychology and Educational Sciences (Babeş-Bolyai University, Cluj-Napoca, Romania). She has obtained a Ph.D. in Educational Sciences in 1997 at Babeş-Bolyai University. Her research interests are reflected in a series of studies and articles published in important national and international journals. Her teaching activity covers several domains such as the theory and methodology of curriculum, general didactics, and educational research.