Critical Thinking Skills: The Context of Saudi Arabia

Khaled Farhan Alsarrah
Universiti Sains Malaysia.

ABSTRACT
The current paper reflects a conceptual endeavours. It exhaustively review the literature as regards to critical thinking skills. The researcher pays special attention to the research on the phenomenon is the Saudi context. Throughout the body of this paper, the author outlined the importance of critical thinking, critical thinking skills, and teaching such skills. The paper is closed by discussing its stances. It also provides suggestion for future research.

Introduction

The modern world has witnessed rapid advances in scientific and technological progress in all aspects of life. Indeed, there is a knowledge explosion, with the volume of this knowledge perhaps doubling every eighteen months in the 21st century (Al-Jundi & Sadiq 2001). In addition, we are living through a communications revolution, with access to knowledge available at the touch of a button. In this context, education needs radical reconsideration. No longer is the teacher to be seen as the transmitter of information and the textbook no longer will define what is to be learned. Indeed, learners need to be taught how to access information usefully and, even more importantly, to develop the skills to be able to evaluate the information they access. Kong (2005) describes this in terms of the development of skillful thinking. It could equally be described as the need for critical thinking.

Education in the Kingdom of Saudi Arabia must keep pace with developments taking place in the rest of the world, and adapt to the new global lifestyle in order to make a better future for its citizens. This will not be achieved without a high standard of education in a world full of changes, information channels, and new inventions and discoveries appearing almost daily (Nassur, 1997). In the face of these rapid changes, the individual encounters a number of challenges and problems, which require him/her to adapt to them and to be able to make the correct choice from among several alternatives after assessing them carefully (Alhammouri and Alwahr, 1998). Sahar (2000) notes the need to change the way teachers are viewed, moving from purveyors of information to those who seek to develop the skills of information access, handling and evaluation. Indeed, Al-Jundi & Sadiq (2001) observes the need to move beyond a consideration only of what students learn towards teaching the learners to think for themselves.

Critical thinking has become a widely-used term in the domain of education in recent years (Fisher, 2005; Kong, 2005). Indeed, in the past, it was argued that critical thinking has received the greatest attention from both academics and practitioners in the field of education (McPeck, 1981; Ennis, 1985). According to Norris (1985), critical thinking is not an educational choice and all students should be taught to think critically; traditional methods of the simple transfer of knowledge and learning by rote are no longer sufficient. However, there is no agreement on whether critical thinking should be taught within the context of specific subjects or taught explicitly and separately (Fisher, 2005).

The Importance of Critical Thinking

Al-Degether (2009) has stressed the importance of developing critical thinking skills among students, while Norris (1985), Ghanem (2004) and Guttami (2005) suggested several reasons for the importance of developing critical thinking skills. These can be summarised as follows:

- Increases the motivation for in-class learning.
- Creates a classroom environment reliant on purposeful dialogue and which introduces activities that can be practised by the students both inside and outside the classroom.
- Transforms the process of knowledge acquisition from a passive function to an active one, conducive to a better mastery of cognitive content and a deeper understanding thereof.
- Provides students with correct and acceptable explanations for the subjects studied.
- Enables the students to monitor and control their thinking, with the result that their thinking becomes more accurate, which assists them in making decisions and protects them against emotional passivity and extremes of opinion.
- Improves the students' ability to learn autonomously.
- Enhances the students' performance in various school subjects.
- Encourages discussion, dialogue, and broad-mindedness, as well as the capacity to communicate and negotiate with the teacher and each other.

In this respect, Facione (2011, p. 23) states that "critical thinking is fundamental to, if not essential for, a rational and democratic society." In the same vein, Facione and Facione (1996) state that critical thinking has been identified as being vital to the development of knowledge and an educated society in order that the social and economic challenges of the 21st century can be addressed. In addition, critical thinking enables individuals to adapt significantly better than their counterparts who possess this ability to a lesser degree, since society changes rapidly and its events become intertwined, resulting in the appearance of challenges that scientific knowledge cannot adequately meet; however, it is imperative to possess the skill of applying this knowledge effectively (Nickerson, 1985).

Al-Degether (2009) points out that a good deal of the critical thinking literature emphasises the importance of developing critical thinking skills in schools. However, there is a dearth of literature suggesting how this might be achieved and virtually none indicating how evidence about its achievement can be obtained. Over a century ago, Dewey (1910) argued that children come to schools with a variety of ideas and knowledge and they expect schools to reflect what they experience in their daily lives and to help them understand these experiences. He argued that schools frequently failed to recognise this requirement and that children were therefore unable to apply what they learned in school to their daily lives outside the school.

However, this is largely the fault of curriculum planners who impose the curricula on schools, leaving teachers little scope and time. In the age of the internet, critical thinking skills are even more important (Al-Degether, 2009). Beyer (1987) states that if students are taught to think critically, this helps them to be responsible for their own learning, which enhances their confidence and will ultimately lead to higher academic achievement. Schafersman (1991) states that it is necessary to teach students how to think rather than teaching them what to think about, since the purpose of teaching thinking is the improvement of the thinking skills they have, and to prepare them to be better able to face life's various problems. While this is true, it gives no indication on how it can be achieved. While developing opportunities and the conditions for students to think independently is, of course, important (Shaheen, 1998), Mcfarland (1985) argues that it is more important to promote the desire and ability to think critically, for the sake of developing objectivity, and participating in citizenship and democratic partnership. Similarly, Brown (1998) states that if pupils think critically they can better consider democratic values in society, if they live in a democratic society. No matter how laudable these aims, how to achieve them in an over-crowded curriculum is less easy. Simister (2004) offers three main reasons for teaching students how to think critically:

- Enhance the experience of learning and permit learners to understand their environment and fulfil their potential.
- Give learners the ability to make the right decisions and respect those around them.
- Assist learners to be creative and therefore able to resolve problems in the future.

These encompass a huge range of desirable outcomes but again, no evidence is offered on how to move forward to achieve these aims. Al-Degether (2009) makes what appears to be the rather naive suggestion that it is important to train teachers in critical thinking so that they can in turn teach the next generation of students how to think critically. This ignores the fact that those who plan school curricula more or less preclude such aims, giving little confidence that there are those who are capable of offering such training. Indeed, overall, there is little evidence about how to develop critical thinking skills.

Critical Thinking Skills

The literature is full of lists of critical thinking skills, but there is an almost complete absence of any evidence on how to develop these successfully with learners. Some of these lists are now outlined. Watson and Glaser (1991) devised a list of a number of skills:

Recognition of Assumptions: This is represented in the ability to distinguish between the degree of correctness or incorrectness of specific information and to distinguish objectively between fact and opinion in given information.

Interpretation: This is represented in the ability of the person to delineate and formulate a problem, to interpret it logically and report whether the generalisation and findings based upon certain information are acceptable or not.

Inference: This refers to the ability of an individual to arrive at a result as a consequence of preceding premises or information.

Deduction: This is the capacity of the individual to deduce a result from certain facts, referring to the ability to detect a correct or incorrect result in the light of given principles and generalisations.

Evaluation of arguments: This is the ability to assess an idea and accept or reject it; to distinguish between primary and secondary sources, and between weak and sound arguments; and to judge whether the information is adequate (Al Atoom et al., 2007).

Facione and Facione (2002) summarise the critical thinking skills measured by the California Critical Thinking Skills Test as analysis, evaluation, inference, deductive reasoning, inductive reasoning, and self-regulation. Al Masree (2003) refers to a set of critical thinking skills mentioned in Arabic literature, which are the following:

- Distinguishing between established, defendable facts and personal and judgmental assumptions.
- Differentiating between proof and examples, and between relevant causes and those that are not associated with the subject.
- Verifying the credibility of the information sources.
- Verifying the mode of information transfer.
- Identifying the sources of evidence, proof and examples are that not immediately apparent. Avoiding bias and favouritism.
- Exposing and refuting erroneous logic.
- Verifying the strength of a proof or claim.

Udall and Daniels (1991) classified critical thinking skills into the following three categories: inductive thinking skills, deductive thinking skills, and evaluative thinking skills. Deductive reasoning works from the more general to the more specific. Sometimes this is informally called a "top-down" approach. Inductive reasoning works the other way, moving from specific observations to broader generalizations and theories. Informally, we sometimes call this a "bottom up" approach. In inductive reasoning, we begin with specific observations and measures, begin to detect patterns and regularities, formulate some tentative hypotheses that we can explore, and finally finish by developing some general conclusions or theories.

How to Teach Critical Thinking Skills

There are three basic schools of thought concerning the teaching of critical thinking (Cotton, 1999, Al Heela, 2002; Alssorur, 2003; Guttami, 2005; Al-karaki, 2006;) and Wakefield, 1996). One holds that critical thinking should be taught as a separate subject as part of the curriculum, while another is in favour of integrating critical thinking instruction in the teaching of specific subjects (this is known as domain-specificity). The third school of thought holds that these two approaches can be combined. Kong (2005) points out that there is considerable debate and controversy about this issue.

Teaching Critical Thinking Generically

This approach can be said to combine the two approaches above. Proponents of this style of teaching call for the necessity to teach critical thinking skills as an addition to the school curriculum. It focuses on learning critical thinking skills through everyday, real-life activities. For instance, after students have been instructed in the use of such skills, they are then encouraged to put them into practice when designing or carrying out projects relevant to their daily lives. Similarly, Ennis (1997)

argues that if critical thinking is taught according to the domain-specific approach, this would not promote students' application of critical thinking in their daily lives. In this regard, (Facione, 1990b) states that it is important that students are taught to use critical thinking skills outside the classroom. Tishman et al. (1993) suggest that encouraging and rewarding critical thinking in an educational setting is one way in which students can be encouraged to use critical thinking skills outside the classroom. All of the above expresses ideals. However, no evidence is presented to indicate how all this can be done in overcrowded curricula, with examination systems where the rewards come largely from the recall of information. Presseisen (1988) asserts that a unified approach to teaching critical thinking skills is able to offer a basis for instruction in any domain. Swartz and Park (1994) called this the infusion approach. According to Kong (2005), this approach offers several advantages, one being that only minimum changes will be involved in the teachers' instructional planing. Many educators are of the view that the infusion of critical thinking in the curriculum is more effective than teaching separate classes in critical thinking (e.g. Ennis, 1989; Kuhn, 1999). This would appear to be a practical approach to teaching critical thinking skills in view of the fact that the curriculum is already crowded and the school day is long. Hence, to teach critical thinking as a separate subject would take up more precious time, as well as increasing the burden on teachers.

The infusion approach, as mentioned above, requires only slight modification to teachers' methods of instruction and, as critical thinking is integrated in the subject, it would not necessarily require more time than is already devoted to that subject. Jerwan (1999) argues that school and classroom environment play an important role in the success of teaching critical thinking skills. Thus:

(1) The general environment of the classroom, which should contain material which is designed to stimulate critical thinking
(2) The student should be the centre of class activities
(3) Using thought-provoking questions and suitable evaluative techniques providing the opportunity for the student to consider several alternatives
(4) The existence of a suitable instructional setting providing various learning tools and materials, together with the use of appropriate teaching techniques
(5) Asking the students to carry out various learning tasks, and inculcating positive attitudes towards learning critical thinking skills.

Jerwan (1999) believes that all of the above are likely to promote the development of critical thinking skills. While this appears reasonable but no evidence is offered to support these views. Research has also shown that students obtain higher marks in critical thinking tests (Wee, 1984, in Kong, n.d.) and standardised achievement tests (Redfield and Rousseau, 1981) when teachers use higher-order cognitive questioning methods. Kong (n.d.) concludes that if critical thinking skills are to be improved, it is necessary to learn the skills first and then to utilise these skills in an appropriate setting. However, Kong (n.d.) also points out that a considerable time may be required for changes to occur.

Discussion

It is apparent that there is no single, agreed-upon definition of critical thinking, as it has been regarded from a number of different viewpoints by scholars in various fields. In recent years, the concept of thinking skills in general and of critical thinking skills in particular, have come to assume increasing importance in education. The way in which teaching is viewed in developed countries has changed, and education is currently seen as a process of teaching learners how to think for themselves. In this respect, Saudi Arabia, as a developing country in an increasingly globalised economy, is under pressure to keep pace with the developed countries in term of education.

The fundamental problem is that, while many argue for critical thinking in school education, there is still a lack of clarity of what is meant by critical thinking, almost no accepted way forward to measure it and a lack of evidence on how to develop the skills. Norris (1985) sees critical thinking as an integral part of education and rejects rote learning, for a long time the norm in many countries, including Saudi Arabia, as insufficient (Norris, 1985).

The concept of critical thinking is not a new one and may be traced as far back as Socrates, with Dewey (1910), Glaser (1941) in the early 1940s, and Ennis (1962) making major contributions. In 1990, the US Delphi Conference brought together 46 experts from fields such as psychology, sociology, and education to discuss critical thinking.

Many (e.g. Norris, 1985; Ghanem, 2004; Guttami, 2005) have argued for the importance of critical thinking but, while there are many lists of critical thinking skills in the literature, there is virtually nothing on how to develop these skills successfully with learners. Further, there is debate among scholars and practitioners as to whether attempts should be made to teach critical thinking skills as a separate subject in schools, whether it should be domain-specific, that is, taught within the context of particular subjects, or whether a combination of these approaches should be taken.

There are other issues. There is no evidence in the literature which explores how to teach critical thinking skills in an educational setting where there is an overcrowded curriculum and an examination system where the rewards come mainly from recalling information. In this respect, Guttami (2005) notes that there is no guarantee that students will think critically even if they are aware of how to do so if they do not perceive any reward to themselves, e.g. in terms of higher examination marks, in doing so.

One of the problems is how to measure critical thinking in that mental processes cannot be observed. Thus critical thinking is often conceptualized in terms of sets of skills which can be observed (Bailin, 2002), the products of critical thinking (Hofreiter, 2005). There are major issues with the development of tests and how to interpret outcomes (Norris, 1989). Issues surrounding validity are critical as well as reliability (Williams, 1999). The use of multiple choice and questionnaires (often used in the Middle East) has not proved helpful.

While critical thinking is intertwined with other types of thinking such as creative thinking, scientific thinking and deductive thinking, it possesses certain characteristics that distinguishes it from these other types (Facione, 2011) but there is still much confusion in the literature.

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