

Chapter 1 : Developing Critical Thinking Skills in Kids | Bright Horizons®

Critical thinking is the opposite of regular, everyday thinking. Moment to moment, most thinking happens automatically. When you think critically, you deliberately employ any of the above intellectual tools to reach more accurate conclusions than your brain automatically would (more on this in a bit).

When examining the vast literature on critical thinking, various definitions of critical thinking emerge. Here are some samples: To recognize its strengths and weaknesses and, as a result, 2. To recast the thinking in improved form" Center for Critical Thinking, c. Perhaps the simplest definition is offered by Beyer Basically, Beyer sees critical thinking as using criteria to judge the quality of something, from cooking to a conclusion of a research paper. In essence, critical thinking is a disciplined manner of thought that a person uses to assess the validity of something statements, news stories, arguments, research, etc. Characteristics of Critical Thinking Wade identifies eight characteristics of critical thinking. Critical thinking involves asking questions, defining a problem, examining evidence, analyzing assumptions and biases, avoiding emotional reasoning, avoiding oversimplification, considering other interpretations, and tolerating ambiguity. Another characteristic of critical thinking identified by many sources is metacognition. In the book, Critical Thinking, Beyer elaborately explains what he sees as essential aspects of critical thinking. Critical thinkers are skeptical, open-minded, value fair-mindedness, respect evidence and reasoning, respect clarity and precision, look at different points of view, and will change positions when reason leads them to do so. To think critically, must apply criteria. Need to have conditions that must be met for something to be judged as believable. Although the argument can be made that each subject area has different criteria, some standards apply to all subjects. Is a statement or proposition with supporting evidence. Critical thinking involves identifying, evaluating, and constructing arguments. The ability to infer a conclusion from one or multiple premises. To do so requires examining logical relationships among statements or data. In a search for understanding, critical thinkers view phenomena from many different points of view. Procedures for Applying Criteria: Other types of thinking use a general procedure. Critical thinking makes use of many procedures. These procedures include asking questions, making judgments, and identifying assumptions. Why Teach Critical Thinking? Through technology, the amount of information available today is massive. This information explosion is likely to continue in the future. Students need a guide to weed through the information and not just passively accept it. As mentioned in the section, Characteristics of Critical Thinking , critical thinking involves questioning. It is important to teach students how to ask good questions, to think critically, in order to continue the advancement of the very fields we are teaching. Beyer sees the teaching of critical thinking as important to the very state of our nation. He argues that to live successfully in a democracy, people must be able to think critically in order to make sound decisions about personal and civic affairs. If students learn to think critically, then they can use good thinking as the guide by which they live their lives. Teaching Strategies to Help Promote Critical Thinking The , Volume 22, issue 1, of the journal, Teaching of Psychology , is devoted to the teaching critical thinking. Most of the strategies included in this section come from the various articles that compose this issue. What question related to this session remains uppermost in your mind? Cooper argues that putting students in group learning situations is the best way to foster critical thinking. McDade describes this method as the teacher presenting a case or story to the class without a conclusion. Using prepared questions, the teacher then leads students through a discussion, allowing students to construct a conclusion for the case. King identifies ways of using questions in the classroom: Following lecture, the teacher displays a list of question stems such as, "What are the strengths and weaknesses of Students must write questions about the lecture material. In small groups, the students ask each other the questions. Then, the whole class discusses some of the questions from each small group. Require students to write questions on assigned reading and turn them in at the beginning of class. Select a few of the questions as the impetus for class discussion. The teacher does not "teach" the class in the sense of lecturing. The teacher is a facilitator of a conference. Students must thoroughly read all required material before class. Assigned readings should be in the zone of proximal development. That is, readings should be able to be understood by students, but also challenging. The class

consists of the students asking questions of each other and discussing these questions. Wade sees the use of writing as fundamental to developing critical thinking skills. Robertson and Rane-Szostak identify two methods of stimulating useful discussions in the classroom: Give students written dialogues to analyze. In small groups, students must identify the different viewpoints of each participant in the dialogue. Must look for biases, presence or exclusion of important evidence, alternative interpretations, misstatement of facts, and errors in reasoning. Each group must decide which view is the most reasonable. After coming to a conclusion, each group acts out their dialogue and explains their analysis of it. One group of students are assigned roles to play in a discussion such as leader, information giver, opinion seeker, and disagreeer. Four observer groups are formed with the functions of determining what roles are being played by whom, identifying biases and errors in thinking, evaluating reasoning skills, and examining ethical implications of the content. Give them conflicting information that they must think their way through. Thoughts on promoting critical thinking: Classroom assessment for critical thinking. Teaching of Psychology, 22 1 , Phi Delta Kappa Educational Foundation. Center for Critical Thinking a. The role of questions in thinking, teaching, and learning. Structures for student self-assessment. Three definitions of critical thinking [On-line]. Cooperative learning and critical thinking. Critical thinking skills for college students. Eric Document Reproduction Services No. ED King, A. Designing the instructional process to enhance critical thinking across the curriculum: Inquiring minds really do want to know: Using questioning to teach critical thinking. Case study pedagogy to advance critical thinking. Teaching Psychology, 22 1 , An innovative teaching strategy: Using critical thinking to give students a guide to the future. Using dialogues to develop critical thinking skills: Strategies for fostering critical thinking skills. Journalism and Mass Communication Educator, 50 1 , A method for fostering critical thinking with heart. Using writing to develop and assess critical thinking. Other Reading Bean, J. A negotiation model for teaching critical thinking. Evaluating the credibility of sources. A missing link in the teaching of critical thinking. The disposition toward critical thinking. The Journal of General Education, 44 1 , Closing thoughts about helping students improve how they think. Teaching writing and research as inseparable: A faculty-librarian teaching team. Reference Services Review, 23 4 , Developing critical thinking skills in adult learners through innovative distance learning. Paper presented at the International Conference on the practice of adult education and social development. ED Sanchez, M.

Chapter 2 : Critical Thinking: Identifying the Targets

Thinking is a good process but thinking alone will not help us to develop our minds. That is when critical thinking may take place. Critical thinking is the ability to think clearly and rationally.

Then I will look briefly at what I feel are two key elements teachers interested in this topic should keep in mind. The majority of this article however, is given over to an analysis of three classroom techniques which I feel teachers in most any circumstance or situation can begin to use almost immediately. I have tried to focus on techniques which I think help students to focus on the real world around them and which teachers may make use of even with limited resources. What Critical Thinking Means Generally Critical thinking is not an easy concept to define as it can mean quite different things to different people in different contexts and cultures. Generally speaking, to think critically about an issue is to consider that issue from various perspectives, to look at and challenge any possible assumptions that may underlie the issue and to explore its possible alternatives. More specifically, when we think critically about a given topic, we are forced to consider our own relationship to it and how we personally fit into the context of the issue Brookfield, This type of thinking does not always come easy, but I feel well-informed instructors can help a great deal in encouraging its development in their students. Firstly, classes which involve elements of critical thought tend to be generally more interesting and engaging. Consider for example, two possible discussion topics related to a unit on the environment. Topic one asks students to summarize the main issues covered in the class in preparation for a final writing activity. Though the teacher may find both approaches equal in terms of how well they facilitate language use in class, it is clear that the later topic will encourage a greater degree of participation and interest from the students. Secondly, using issues that encourage critical thinking helps to give the classroom a more meaningful and cohesive environment. Students who feel that they are working together will be more likely to attend classes and will be more involved while they are there. Two Things to Keep in Mind When Getting Started Knowing the Interest of Your Students is Essential Most experienced teachers recognize that the more you know about the backgrounds and interests of your students the more appropriate and engaging your classes will become. This element is even more significant for classes with a focus on critical thinking. Well it is true that an experienced teacher can create a critical thinking component in most any lesson, it is not true that students will respond to each various lesson or topic equally. Consider as an example a grammatical unit on the use of the future tenses. A teacher wishing to help promote critical thought in their class might ask a series of discussion questions on the ethical issues surrounding future increases in life expectancy. More appropriate questions could certainly be found however for an ESP Engineering class or for a group of year old boys and girls. The point is that tailoring lessons specifically to the interests of your students can go quite far in encouraging student engagement, an element that is essential to the development of critical thinking. Learning to Really "Discuss" the Discussion Questions As a teacher it is essential that you understand and communicate to your students regularly the role of the questions they are being asked to answer. Virtually every language course book contains some form of "discussion questions" which are designed to give students some opportunity to practice language use. As a teacher trainer and observer however, far too often I see these questions being used simply as a tool, or even worse, as a kind of hurdle one needs to get over before moving on to the next grammar lecture or reading passage. It is true that these questions are often written in such a way as to almost discourage critical thought but teachers need to remember that they always have the ability to modify or adapt lessons to their own circumstances. Even the most overworked and underpaid of instructors, who claims to have no time for lesson planning, can make a difference here. In my experience teachers often cite the frustration of having to "retrain" their students to really think about the questions they are discussing in class. It is much easier of course, if the questions just pass by with the students simply regurgitating some information from a reading or listening passage, but think about the long term message this sends to our students. We are telling them, in effect, that the content is not really of any importance. We need to encourage our students to really interact with the texts and materials they are given and we need to do this repeatedly. Ultimately this will help students to better interact with the world

around them and to become more self-aware and reflective thinkers. Three Classroom Techniques Once teachers grasp the concept and value of critical thinking skills development in the classroom they will begin to see opportunities all around them for encouraging their students in this area. I am now going to provide a brief overview of three techniques which have served me well in the past but I would like to stress that these are only three techniques of many that are possible and I encourage teachers to develop techniques appropriate to their own situations. The three classroom techniques I am going to look at are debate, media analysis and problem solving. I have chosen these three in particular because I feel that they have a degree of universality and practicality that makes them almost immediately applicable to most teaching circumstances. I have used or seen these techniques used in large classes and small, in EFL and ESL, in levels ranging from lower intermediate to advanced, and generally in all manner of teaching situations.

Debate Why it Works Debate forces students to think about the multiple sides of an issue and it also forces them to interact not just with the details of a given topic, but also with one another. Also debates are versatile in the range of topics possible and the format that the debate may follow. **How it Works** Students must first be made aware of a debatable topic and of the variety of potential positions that can be taken on the topic. These topics can come from course materials, from classroom discussion, or from the local community. Students should then be given an opportunity to research the topic somehow and form their own opinions on the issue. Next pairs or small groups should be formed where like-minded students can share their opinions on the topic and gain information from others. During this step students should be encouraged to think about the potential arguments that will come from the other side and how they can respond to these arguments. Now some form of debate must take place where the two or three or four sides share their opinions and present their arguments. This could take the form of a classic debate, with opening and closing arguments from both sides and time for rebuttals all done as a class. Alternatively, it could simply be small groups or pairs sharing their differing points of view with one another. Then, the instructor should follow-up with a summary of the opinions and views expressed by all sides and an assessment of their strengths and weaknesses. In the final step, the class and instructor should be allowed to express their opinions on which side made the case most convincingly. This step is important in that it helps the students to understand that this type of thinking and debate process can lead to real results and provide some sense of closure on the topic.

Things to Remember The debate itself can take many forms. Students need to be allowed to form their own opinions rather than having the teacher assign "sides" to the debate. Choosing a topic appropriate to the interests of the students is essential.

Media Analysis Why it Works Analyzing various forms of media, either in an ESL or EFL environment, gives the opportunity for students to think about important issues like media bias and censorship. When students look at the types of issues that may bias reporting, they are also forced to think in terms of their biases and to reflect on these in detail. **How it Works** A form of media and topic need to be chosen, either by the instructor or the students, that reflects the interests of the class and has the potential to encourage critical thought. Time for analysis reading, watching, listening, etc. Class, small group, or pair discussions should then be undertaken on the content of the piece to give students the opportunity to work out any problems or questions they may have. Once the students are comfortable with the content of the piece, the instructor should then introduce questions designed to encourage critical reflection. Some possible examples are as follows: Who is the author? Why did they write or report this piece? Do you feel the facts are accurate? Why or why not? Is the author or reporter giving equal attention to all sides of the issue? How does this piece make you feel personally? How do you feel others from other countries, cultures, political groups, etc. Do you see examples of bias, either in the piece itself or in the language chosen? With ample time, a good follow-up to this activity is to ask students to write a response either to the author or an editor of the piece expressing their opinions.

Things to Remember The media is all around us and finding material for classroom use is just a matter of opening a newspaper or watching the news. The focus of this type of activity does not need to be on traditional topics like bias and censorship. Teachers must know their students and their interests in order to source appropriate material for classroom use. Working with local media outlets may give the opportunity for real correspondence between the class and a writer or editor.

3. Problem Solving Why it Works Problems exist everywhere, both inside the classroom and out, and their resolution is a popular source of conversation in all countries and cultures. How it

Works First the class must identify a problem that is relevant to their lives and interests. Some examples might include: The high cost of education at their school Overcrowding in the city Corruption of city officials Visa difficulties for international students Next the class should work together to clearly define the problem. This step is important for the completion of the task and the instructor needs to work to make sure everyone is starting with a similar definition. Divide the class into pairs, groups, or teams and ask them to list the root causes of the problem. The instructor should then identify two or three causes that seem appropriate to the task and ask the students to discuss steps for their correction. Here the instructor must ask the students to keep in mind the real-world consequences to their actions and prevent solutions from becoming imaginary. Things to Remember Problems are everywhere but the instructor must think through the steps in the process clearly before introducing a given problem to the class Student generated solutions need to be as concrete and realistic as possible Working with an outside agent city official, university representative, lawyer for correspondence is helpful as it lends weight and a sense of accomplishment to the project. Conclusion In conclusion, I hope that teachers are able to use this article and some of the techniques I have suggested as a starting point for the development of critical thinking in their own classes. I believe and hope that teachers will find their efforts in this regard to be both personally and professionally rewarding. A Critical Approach to Critical Thinking. A Learning Process for Democracy.

Chapter 3 : Creativity, Thinking Skills, Critical Thinking, Problem solving, Decision making, innovation

5 Ways To Develop Critical Thinking Skills As we begin a new school year, teachers will focus on teaching and learning. In the s, the focus was on content knowledge and mastery learning.

Clear Fair All of these attributes must be true, whether the nurse is talking, speaking or acting. You also need to do these things when you are reading, writing and talking. Always keep these critical thinking attributes in mind in nursing! Nurses have to get rid of inconsistent, irrelevant and illogical thinking as they think about patient care. Nurses need to use language that will clearly communicate a lot of information that is key to good nursing care. It is important to note that nurses are never focused in irrelevant or trivial information. Key Critical Thinking Skills Some skills are more important than others when it comes to critical thinking. Some of these skills are applied in patient care, via the framework known as the Nursing Process. The skills that are most important are: Interpreting – Understanding and explaining the meaning of information, or a particular event. Analyzing – Investigating a course of action, that is based upon data that is objective and subjective. Evaluating – This is how you assess the value of the information that you got. Is the information relevant, reliable and credible? This skill is also needed to determine if outcomes have been fully reached. Based upon those three skills, the nurse can then use clinical reasoning to determine what the problem is. These decisions have to be based upon sound reasoning: Explaining – Clearly and concisely explaining your conclusions. The nurse needs to be able to give a sound rationale for her answers. Self regulating – You have to monitor your own thinking processes. This means that you must reflect on the process that lead to the conclusion. You should self correct in this process as needed. Be on alert for bias and improper assumptions. Critical Thinking Pitfalls Errors that occur in critical thinking in nursing can cause incorrect conclusions. This is particularly dangerous in nursing, because an incorrect conclusion can lead to incorrect clinical actions. Illogical Processes Critical thinking can fail when logic is improperly used. One common fallacy is when one uses a circular argument. Logic errors also can happen when a thinking makes generalizations and does not think about the evidence. Bias All people have biases. Critical thinkers are able to look at their biases and do not let them compromise their thinking processes. Biases can complicate patient care. If you think that someone who is alcoholic is a manipulator, you might ignore their complaint that they are anxious or in pain, and miss the signs of delirium tremens. Closed Minded Being closed-minded in nursing is dangerous because it ignores other points of view. Also ignored is essential input from other experts, as well as patients and families. This means that fewer clinical options are explored and fewer innovative ideas are used.

Chapter 4 : Critical Thinking – Free Critical Thinking and Reasoning Activities for Kids – JumpStart

Problem solving extends our inquiry work. It is important that our students think for themselves. In problem solving they apply the critical thinking strategies they have learned. Collaboration "Integrating meaningful learning experiences that promote critical thinking skills is essential in cultivating a classroom of 21st Century learners.

Translate this page from English Print Page Change Text Size: Critical thinking is a rich concept that has been developing throughout the past years. The term "critical thinking" has its roots in the mid-late 20th century. We offer here overlapping definitions, together which form a substantive, transdisciplinary conception of critical thinking. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: It entails the examination of those structures or elements of thought implicit in all reasoning: Critical thinking can be seen as having two components: It is thus to be contrasted with: Critical thinking varies according to the motivation underlying it. As such it is typically intellectually flawed, however pragmatically successful it might be. When grounded in fairmindedness and intellectual integrity, it is typically of a higher order intellectually, though subject to the charge of "idealism" by those habituated to its selfish use. Critical thinking of any kind is never universal in any individual; everyone is subject to episodes of undisciplined or irrational thought. Its quality is therefore typically a matter of degree and dependent on, among other things, the quality and depth of experience in a given domain of thinking or with respect to a particular class of questions. No one is a critical thinker through-and-through, but only to such-and-such a degree, with such-and-such insights and blind spots, subject to such-and-such tendencies towards self-delusion. For this reason, the development of critical thinking skills and dispositions is a life-long endeavor. Another Brief Conceptualization of Critical Thinking Critical thinking is self-guided, self-disciplined thinking which attempts to reason at the highest level of quality in a fair-minded way. People who think critically consistently attempt to live rationally, reasonably, empathically. They are keenly aware of the inherently flawed nature of human thinking when left unchecked. They strive to diminish the power of their egocentric and sociocentric tendencies. They use the intellectual tools that critical thinking offers – concepts and principles that enable them to analyze, assess, and improve thinking. They work diligently to develop the intellectual virtues of intellectual integrity, intellectual humility, intellectual civility, intellectual empathy, intellectual sense of justice and confidence in reason. They realize that no matter how skilled they are as thinkers, they can always improve their reasoning abilities and they will at times fall prey to mistakes in reasoning, human irrationality, prejudices, biases, distortions, uncritically accepted social rules and taboos, self-interest, and vested interest. They strive to improve the world in whatever ways they can and contribute to a more rational, civilized society. At the same time, they recognize the complexities often inherent in doing so. They avoid thinking simplistically about complicated issues and strive to appropriately consider the rights and needs of relevant others. They recognize the complexities in developing as thinkers, and commit themselves to life-long practice toward self-improvement. They embody the Socratic principle: The unexamined life is not worth living , because they realize that many unexamined lives together result in an uncritical, unjust, dangerous world. The Problem Everyone thinks; it is our nature to do so. But much of our thinking, left to itself, is biased, distorted, partial, uninformed or down-right prejudiced. Yet the quality of our life and that of what we produce, make, or build depends precisely on the quality of our thought. Shoddy thinking is costly, both in money and in quality of life. Excellence in thought, however, must be systematically cultivated. The Result A well cultivated critical thinker: Critical thinking is, in short, self-directed, self-disciplined, self-monitored, and self-corrective thinking. It presupposes assent to rigorous standards of excellence and mindful command of their use. It entails effective communication and problem solving abilities and a commitment to overcome our native egocentrism and sociocentrism. Critical thinking calls for a persistent effort to examine any belief or supposed form of knowledge in the light of the evidence that supports it and the further conclusions to which it tends.

Chapter 5 : Critical Thinking and Problem-solving

In the simplest terms, critical thinking is about carefully analyzing, processing and making sense of information. While it is often taught as part of a philosophy course (and has its roots in the work of Plato and Aristotle), critical thinking skills can be helpfully applied to any problem, subject area, question or concept.

Seizing the Initiative Through Creative Thinking Versus Reacting to the Enemy local copy , by Grothe, SAMS paper, Leadership must be committed to learning, underwrite experimentation, and create an environment that generates creative thought and innovation. Doctrine must incorporate more aspects of innovation, creative and critical thinking and innovative leadership. The most critical area the Army must focus change in is within Professional Military Education for field grade officers. When words represent some indistinct idea, they are susceptible to reinvention or distortion with potentially significant unintended consequences. Innovation Starvation , by Stephenson, in World Policy Journal, Fall Still, I worry that our inability to match the achievements of the s space program might be symptomatic of a general failure of our society to get big things done. The vast and radical innovations of the midth century took place in a world that, in retrospect, looks insanely dangerous and unstable. In short, a world where big stuff can never get done. Thinking Critically and Creatively and How Military Professionals Can Do it Better , by McConnell et al, in Small Wars Journal, 16 Sep This essay will summarize how cognitive theorists have described critical and creative thinking in general, and how some military practitioners have applied them. In doing so, this essay will propose principles of critical and creative thinking applicable to the military profession to provide a common vocabulary that describes the type of thinking we do. To expand and improve critical and creative thinking, military professionals need a common vocabulary that accurately describes the very thinking we are to expand and improve on. Do schools kill creativity? Bring on the learning revolution! In a funny, stirring talk he tells us how to get out of the educational "death valley" we now face, and how to nurture our youngest generations with a climate of possibility. What schools are encouraged to do is to find out what kids can do across a very narrow spectrum of achievement. Our children and teachers are encouraged to follow routine algorithms rather than to excite that power of imagination and curiosity. Instead, what we have is a culture of standardization. Seth Godin Seth Godin: Quietening the Lizard Brain , a 99u video "Bestselling author and entrepreneur Seth Godin outlines a common creative affliction: Godin targets our "lizard brain" as the source of these primal doubts, and implores us to "thrash at the beginning" of projects so that we can ship on time and on budget. How to get your ideas to spread - a TED talk you may need to watch it on YouTube if TED videos are blocked "In a world of too many options and too little time, our obvious choice is to just ignore the ordinary stuff. Marketing guru Seth Godin spells out why, when it comes to getting our attention, bad or bizarre ideas are more successful than boring ones" other TED. Matt Ridley argues that, through history, the engine of human progress and prosperity has been, and is, "ideas having sex with each other. The key to growth? Race with the machines - a TED talk you may need to watch it on YouTube if TED videos are blocked "As machines take on more jobs, many find themselves out of work or with raises indefinitely postponed. Is this the end of growth? Be sure to watch the opposing viewpoint from Robert Gordon. Are we witnessing the end of growth? Be sure to watch the opposing viewpoint from Erik Brynjolfsson. Your elusive creative genius - a TED talk you may need to watch it on YouTube if TED videos are blocked "Elizabeth Gilbert muses on the impossible things we expect from artists and geniuses -- and shares the radical idea that, instead of the rare person "being" a genius, all of us "have" a genius. How to build your creative confidence - a TED talk you may need to watch it on YouTube if TED videos are blocked "Is your school or workplace divided into "creatives" versus practical people? Yet surely, David Kelley suggests, creativity is not the domain of only a chosen few. Telling stories from his legendary design career and his own life, he offers ways to build the confidence to create From mach glider to humming bird drone - a TED talk you may need to watch it on YouTube if TED videos are blocked "What would you attempt to do if you knew you could not fail? In this breathtaking talk she describes some of the extraordinary projects -- a robotic hummingbird, a prosthetic arm controlled by thought, and, well, the internet -- that her agency has created by not worrying that they might fail. But Steven Johnson shows how

history tells a different story. At TEDxMaastricht speaker Bart Knols demos the imaginative solutions his team is developing to fight malaria -- including limburger cheese and a deadly pill. Unintended consequences - a TED talk you may need to watch it on YouTube if TED videos are blocked "Every new invention changes the world -- in ways both intentional and unexpected. Historian Edward Tenner tells stories that illustrate the under-appreciated gap between our ability to innovate and our ability to foresee the consequences. She makes the case for unlocking your brain via pad and pen. The Science of Insight Creation , 40 min. Finding notable, new facts is getting harder. So how can we increase our capacity for breakthroughs and insights? What can new disciplines like neuroscience teach us about the innovation process? Jonah Lehrer explores creativity from a scientific perspective and discusses questions such as why we have our best ideas in the shower. Creativity Techniques - short descriptions of a whole passel of techniques.

Chapter 6 : Halvorsen - Incorporating Critical Thinking Skills Development into ESL/EFL Courses (TESL/TEFL)

comprehend critical and creative thinking skills, and (2) appreciate the importance of thinking skills to his or her life.
Objective: The objective of this lesson is for each student to (1) compre-

A few teaching strategies to help your students think like optimists. **Brainstorm Before Everything You Do** One of the easiest and most effective ways to get young children to think critically is to brainstorm. **Classify and Categorize** Classification plays an important role in critical thinking because it requires students to understand and apply a set of rules. Give students a variety of objects and ask them to identify each object, then sort it into a category. This is a great activity to help students think and self-question what object should go where, and why. **Compare and Contrast** Much like classifying, students will need to look closely at each topic or object they are comparing and really think about the significance of each one. You can have students compare and contrast just about anything—try this out with the book your class is reading now. Compare and contrast the weather forecast for today and yesterday. Compare the shape and color of a pumpkin to another vegetable. **Make Connections** Encouraging students to make connections to a real-life situation and identify patterns is a great way to practice their critical thinking skills. Ask students to always be on the look for these connections, and when they find one to make sure they tell you. **Provide Group Opportunities** Group settings are the perfect way to get your kids thinking. When children are around their classmates working together, they get exposed to the thought processes of their peers. They learn how to understand how other people think and that their way is not the only route to explore. When this valuable skill is introduced to students early on in the education process, students will be capable of having complex thoughts and become better problem solvers when presented with difficulty. How do you teach critical thinking in your classroom? Do you have any teaching strategies that can help students learn this important life skill? Feel free to share with us in the comment section below. We would love to hear your ideas. Janelle Cox is an education writer who uses her experience and knowledge to provide creative and original writing in the field of education. She is also the Elementary Education Expert for About.

Chapter 7 : 3 Ways to Improve Critical Thinking Skills - wikiHow

unit with the same military and political objectives. Developing critical thinking skills Learning Centre economic and military cooperation between the two.

Translate this page from English Print Page Change Text Size: T T T Critical Thinking: Identifying the Targets Abstract The goal of this chapter is to set out clearly what critical thinking is in general and how it plays itself out in a variety of domains: Richard Paul and Jane Willson provide down-to-earth examples that enable the reader to appreciate both the most general characteristics of critical thinking and their specific manifestations on the concrete level. It is essential, of course, that the reader becomes clear about the concept, including its translation into cases, for otherwise she is apt to mis-translate the concept or fail to see its relevance in a wide variety of circumstances. Is this a good idea or a bad idea? Is this belief defensible or indefensible? Is my position on this issue reasonable and rational or not? Am I willing to deal with complexity or do I retreat into simple stereotypes to avoid it? Do I think deeply or only on the surface of things? Do I ever enter sympathetically into points of view that are very different from my own, or do I just assume that I am right? Do I know how to question my own ideas and to test them? Do I know what I am aiming for? Effectively evaluating our own thinking and the thinking of others is a habit few of us practice. We evaluate which washing machine to buy after reading Consumer Reports, we evaluate which movie to go see after studying the reviews, we evaluate new job opportunities after talking with friends and colleagues, but rarely do we explicitly evaluate the quality of our thinking or the thinking of our students. But, you may ask, how can we know if our thinking is sound? Do the consequences always accurately tell the tale? In our education and upbringing, have we developed the ability to evaluate, objectively and fairly, the quality of our beliefs? What did we learn about thinking during our schooling? How did we come to believe what we do believe, and why one belief and not another? How many of our beliefs have we come to through rigorous, independent thinking, and how many have been down-loaded from the media, parents, our culture, our spouses or friends? As we focus on it, do we value the continuing improvement of our thinking abilities? Important research findings indicate that we need to look closely at this issue. Can we learn how to evaluate our thinking and reasoning objectively? These standards guide the divers in each practice session, in each effort off the board. Without these criteria and standards, how would the diver and the judges know what was excellent and what was marginal? Do we have parallel criteria and standards as we strive to improve our abilities, our performances in thinking? There is nothing more common than evaluation in the everyday world but for sound evaluation to take place, one must establish relevant standards, gather appropriate evidence, and judge the evidence in keeping with the standards. There are appropriate standards for the assessment of thinking and there are specific ways to cultivate the learning of them. The research into critical thinking establishes tools that can help us evaluate our own thinking and the thinking of others, if we see their potential benefit and are willing to discipline our minds in ways that may seem awkward at first. This chapter briefly lays out those tools in general terms and acts as a map, so to speak, of their dimensions. We present examples of student thinking that demonstrate critical and uncritical thinking as we define those terms. In other chapters, we identify approaches to teaching critical thinking that are flawed, and explain why they undermine the success of those who attempt to use them. Important Research Findings First Finding: National assessments in virtually every subject indicate that, although our students can perform basic skills pretty well, they are not doing well on thinking and reasoning. American students can compute, but they cannot reason. They can write complete and correct sentences, but they cannot prepare arguments. Moreover, in international comparisons, American students are falling behind. Our students are not doing well at thinking, reasoning, analyzing, predicting, estimating, or problem solving. Textbooks in this country typically pay scant attention to big ideas, offer no analysis, and pose no challenging questions. Teachers teach most content only for exposure, not for understanding. Teachers tend to avoid thought-provoking work and activities and stick to predictable routines. Our fifth finding from research compounds all the others and makes it harder to change practice: If your elementary teacher presented mathematics to you as a set of procedural rules with no substantive rationale,

then you are likely to think that this is what mathematics is and that this is how mathematics should be studied. And you are likely to teach it in this way. If you studied writing as a set of grammatical rules rather than as a way to organize your thoughts and to communicate ideas to others, then this is what you will think writing is, and you will probably teach it so. By the time we complete our undergraduate education, we have observed teachers for up to 3, days. Unless we find a way out of this circle, we will continue re-creating generations of teachers who re-create generations of students who are not prepared for the technological society we are becoming. It functions purposefully and exactly. It is thought that is disciplined, comprehensive, based on intellectual standards, and, as a result, well-reasoned. Critical Thinking is distinguishable from other thinking because the thinker is thinking with the awareness of the systematic nature of high quality thought, and is continuously checking up on himself or herself, striving to improve the quality of thinking. As with any system, critical thinking is not just a random series of characteristics or components. Critical thinking is based on two assumptions: Critical thinking implies a fundamental, overriding goal for education in school and in the workplace: As students learn to take command of their thinking and continually to improve its quality, they learn to take command of their lives, continually improving the quality of their lives. Comprehensive Critical Thinking Has the Following Characteristics It is thinking which is responsive to and guided by Intellectual Standards, such as relevance, accuracy, precision, clarity, depth, and breadth. Without intellectual standards to guide it, thinking cannot achieve excellence. For example, the critical thinker will routinely ask himself or herself questions such as these about the subject of the thinking task at hand: What is the purpose of my thinking? What precise question am I trying to answer? Within what point of view am I thinking? What information am I using? How am I interpreting that information? What concepts or ideas are central to my thinking? What conclusions am I coming to? What am I taking for granted, what assumptions am I making? If I accept the conclusions, what are the implications? What would the consequences be, if I put my thought into action? For each element, the thinker must be able to reflect on the standards that will shed light on the effectiveness of her thinking. The thinker takes steps to assess the various dimensions of her thinking, using appropriate intellectual standards. The thinker is able, not only to critically examine her thought as a whole, but also to take it apart, to consider its various parts, as well. Furthermore, the thinker is committed to thinking within a system of interrelated traits of mind; for example, to be intellectually humble, to be intellectually perseverant, to be intellectually courageous, to be intellectually fair and just. Ideally, the critical thinker is aware of the full variety of ways in which thinking can become distorted, misleading, prejudiced, superficial, unfair, or otherwise defective. The thinker strives for wholeness and integrity as fundamental values. Many tend to instruct students with a technique such as mapping of ideas in diagrams or comparing two ideas, yet these ask little of the student and can readily mislead student and teacher to believe that such techniques will be sufficient. If we know quite explicitly how to check our thinking as we go, and we are committed to doing so, and we get extensive practice, then we can depend on the results of our thinking being productive. Good thinking produces good results. The following section highlights examples of legitimate, substantial, comprehensive critical thinking in a variety of contexts. These examples will provide the reader with concrete samples of the criteria, the standards and characteristics integral to genuine critical thinking. Critical Thinking at School Critical thinking has an appropriate role in virtually every dimension of school learning, very little that we learn that is of value can be learned by automatic, unreflective processes. Consider the following example of two students engaging in reading the same story. We are privy to conversations between each of the two students, Colleen and Stephen and an experimenter. We have chosen to make our example detailed, because we see this as the best route for providing specificity to otherwise vague generalizations about the relationship between reading and thinking. To simulate the task for you we present the passage without a title and one episode at a time as was done with the children. Episode 1 The stillness of the morning air was broken. The men headed down the bay. It was a very peaceful morning. Colleen The men are going shopping. Commentary Stephen recognizes that there is insufficient information for explaining what the men are doing. On questioning, he tentatively suggests a couple of alternatives consistent with the information given, but indicates there are other possibilities. Colleen presents one explanation of the story, and seems fairly definitive that the men are going to buy clothes at The Bay, a chain of department stores in

Canada. On being queried she maintains her idea that the men are going shopping but offers an explanation inconsistent with her first one that they are going to buy clothes. To do this she assumes that something concrete was broken, which could be replaced at The Bay. Episode 2 The net was hard to pull. The heavy sea and strong tide made it even difficult for the girdie. The meshed catch encouraged us to try harder. Stephen It was not a very good day as there were waves which made it difficult for the girdie. That must be some kind of machine for doing something.

Chapter 8 : Elements of Critical Thinking

Critical thinking is based on two assumptions: first, that the quality of our thinking affects the quality of our lives, and second, that everyone can learn how to continually improve the quality of his or her thinking.

And all this is meant to guide: Beliefs You can also define it this way: Critical thinking is the opposite of regular, everyday thinking. Moment to moment, most thinking happens automatically. This is what critical thinking is. Why Does Critical Thinking Matter? Most of our everyday thinking is uncritical. If you think about it, this makes sense. We can run into problems, though, when we let our automatic mental processes govern important decisions. Anywhere that some form of fundamentalism led to tragedy the Holocaust is a textbook example , critical thinking was sorely lacking. Ignorant certainty is the belief that there are definite, correct answers to all questions—“all you have to do is find the right source In college and in life, however, the answers to most meaningful questions are rarely straightforward. To get anywhere in college classes especially upper-level ones , you have to think critically about the material. Naive relativism is the belief that there is no truth and all arguments are equal According to Roberts, this is often a view that students adopt once they learn the error of ignorant certainty. Critical thinking also matters in college because: It allows you to form your own opinions and engage with material beyond a superficial level. It allows you to craft worthy arguments and back them up. If you plan to go on to graduate school or pursue a PhD. Doing college level work without critical is a lot like walking blindfolded: Once you get out into the real world, critical thinking matters even more. It allows you to continue to develop intellectually after you graduate. When you encounter new information, knowing how to think critically will help you evaluate and use it. It helps you make hard decisions. Equally important in the decision-making process is the ability to think critically. Critical thinking allows you compare the pros and cons of your available options, showing that you have more options than you might imagine. People can and will manipulate you. At least, they will if you take everything at face value and allow others to think for you. When you evaluate information critically especially information meant to sell something , you can avoid falling prey to unethical companies and people. It makes you more employable and better paid. The best employees not only know how to solve existing problems—they also know how to come up with solutions to problems no one ever imagined. To get a great job after graduating , you need to be one of those employees, and critical thinking is the key ingredient to solving difficult, novel problems. But does every problem require a complicated solution? Dubner Sometimes an explanation becomes so complex that the original question get lost. To avoid this, continually go back to the basic questions you asked when you set out to solve the problem. Here are a few key basic question you can ask when approaching any problem: What do you already know? How do you know that? What are you trying to prove, disprove, demonstrated, critique, etc.? What are you overlooking? Some of the most breathtaking solutions to problems are astounding not because of their complexity, but because of their elegant simplicity. From Newton to Einstein to Yitang Zhang , questioning assumptions is where innovation happens. All of us have biases in our thinking. Becoming aware of them is what makes critical thinking possible. It may seem obvious that X causes Y, but what if Y caused X? At first, it seems obvious that the chicken had to come first. The chicken lays the egg, after all. But then you quickly realize that the chicken had to come from somewhere, and since chickens come from eggs, the egg must have come first. Ask the following questions of any evidence you encounter: Who gathered this evidence? How did they gather it? Take, for example, a study showing the health benefits of a sugary cereal. On paper, the study sounds pretty convincing. That is, until you learn that a sugary cereal company funded it. And even in important matters, you will experience lapses in your reasoning. What matters is that you recognize these lapses and try to avoid them in the future. Conclusion As I hope you now see, learning to think critically will benefit you both in the classroom and beyond. I hope this post has given you some ideas about how you can think more critically in your own life. How has critical thinking helped you in and outside the classroom? Are there any important tips I missed? Share them in the comments or discuss them in the College Info Geek Community. Snow quote about Einstein and the information about Isaac Newton. Want to earn better grades? Did you find this article useful? Over , awesome students are learning how to dominate their

classes, get more done, and land the jobs they want – and you should too.

Chapter 9 : Developing Students' Critical Thinking Skills Through Whole-Class Dialogue - ReadWriteThink

This article presents a definition of strategic thinking and then focuses on the two key antecedents of strategic thinking—“creative and critical thinking”—and presents the Army War College approach to educating students in these skills.

The other day, I walked into one of our primary multi-aged classroom communities. I noticed many wonderful things. It was clear the students were engaged in what they were doing. These young students were working on an inquiry unit related to force and motion. Other students were using their iPads to view videos related to force and motion. Many of the students were recording notes on their iPads or on paper while watching the videos or reading. A few students were experimenting with different materials such as ramps, matchbox cars, marbles, etc. Later, students met in small groups and engaged in discussions related to what they learned or discovered through these activities. Their conversations led the students to synthesize their new learning, reflect on the learning experiences they had, and make connections to how this new information relates to the essential question of their current inquiry unit. It is clear that these students were working on thinking critically. For us, critical thinking happens when students analyze and evaluate evidence, arguments, claims and beliefs. Inquiry "One way we try to foster critical thinking skills in our classroom is by allowing our students to be creative and to inquire about topics that are of interest to them. The students work through the phases of immersion, investigation, coalescence and demonstration of learning. Throughout these phases the students are able to wonder, build background knowledge, develop questions, search for new information, synthesize information, demonstrate an understanding and share their new learning with others. Throughout inquiry, the students tie everything together through an essential question which helps them probe for deeper meaning. These questions are open-ended, encourage collaboration and foster the development of critical thinking skills. Questioning "We push students to dig deeper in their learning by asking guiding questions and providing a variety of resources for students to independently find answers. Throughout their learning, we encourage students to ask and answer their own questions through small group discussions, conferring, working on their Personalized Learning Plans and using graphic organizers. Questioning models for students how they should think. Our professional educators use open-ended questions to encourage discussion and active learning. We also incorporate questioning into our everyday discussions with students. Instead, we turn the problem onto them and ask how could they solve this problem. This allows the child opportunities to solve their problems independently. It is important that our students think for themselves. In problem solving they apply the critical thinking strategies they have learned. Collaboration "Integrating meaningful learning experiences that promote critical thinking skills is essential in cultivating a classroom of 21st Century learners. One way we do this is by actively involving the students in their learning through collaborative work. This helps the students take ownership of the learning and think critically about issues. Our student-centered learning environments are varied and flexible to accommodate the needs of learners and provide ongoing opportunities to build a collaborative community of students and staff. Our environments promote collaborative, individual, small and large group learning. Students learn in collaborative flexible groups based on need. When students collaborate together they learn how to communicate with others effectively, work as a team, practice self-discipline, and improve social and interpersonal skills. Through collaboration, students are able to have a better understanding of what they are learning and improve critical thinking skills. And Beyond There are many other ways that we foster critical thinking among our learners, but these are the four that have made the biggest impact for us. Critical thinking is a key skill that our students need to have in order to become life-long learners and self-advocates for themselves. Her district, West Allis-West Milwaukee, is part of the Next Generation Learning Initiative, an effort that involves all teachers working to transform learning for all students. Her school is a P21 Exemplar. Share your favorite blog posts to your friends and colleagues.