

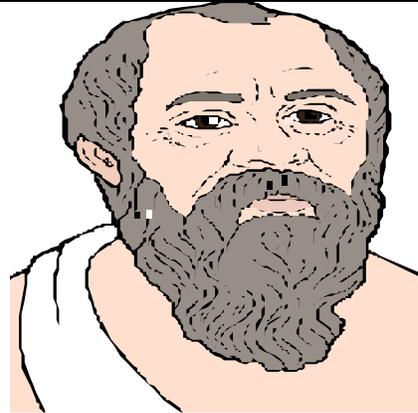
Socratic Teaching Method

(A Textbook for: Socratic Questions 101).

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Socrates

Abstract: The Socratic Teaching Method is the technique, which law and medical schools use to get their students to critically analyze information. This sixty-three page How to Book discusses the method and provides procedural information. It was written in 1993 when I was taking courses at the University of Northern Colorado to get my teaching license and before I went to graduate school for a Masters in History.

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Introduction

Let me start with a joke. In the law we write legal "briefs" to present various points of law. What follows is a brief paper about the Socratic teaching method. For readers who are unfamiliar with the Socratic Method this book is designed to be a How To Guide. For readers who are somewhat familiar with the Socratic Teaching Method, I hope my book will spark some thoughts and provide useful lesson plan ideas.

III. Lecture vs. the Socratic Method.

The major teaching method in all levels of public schooling appears to be lecture. Homework consists of reading. Lecture is a passive regurgitation of the reading for those who did not do the assignment. For those who did the assigned reading, it provides another viewpoint. Lecture is teacher dominated and centered. It sets up the wise man on the hill. If you want to know the major ideas of psychology, I will tell you everything you need to know.

A lecturer might be viewed as a talking book. In this sense their lesson plan is the same as pushing the play button on a cassette recorder.

A front door analogy might illustrate this point. A lecturer walks up to a house, explains in great detail the purpose and function of the front door, the house and the doorknob. The lecturer opens the door and asks their students to follow them inside. The problem with this scenario is that the teacher does most of the thinking. The teacher decides which house to enter. The teacher decides which portal to enter. The teacher decides which subjects to study. Should we cover locks and keys. Should we cover addresses? Should we cover private ownership? Should we cover jammed door latches? The students are asked to passively follow along.

The Socratic teacher sneaks around and enters the house through the back door. This teacher calls out to their class to find their own ways to enter the house. This teacher uses guiding questions to point out different methods, which might help them gain entry. These students must do most of the thinking. They must decide which portal to enter through. They must decide how to operate doorknobs. Ultimately the students should ask themselves, why are they studying doors in the first place. A student might reason that entering the house through the garage means negotiating two different types of doors. Is there value to poking around the garage and entering through a side door?

In sum, a lecturer attempts to disseminate information. They might reason that students are devoid of knowledge. Students should be tipped on their ears and filled up with knowledge. By contrast, a Socratic teacher attempts to draw knowledge out of the students. In the constructivist

sense, a Socratic teacher attempts to pose problems, which allow the student to reformulate, reconstruct and reorganize their own existing knowledge into building blocks of knowledge. The goal is not to give information or answers. The goal is to build blocks of knowledge based upon the student's own raw materials (experience, common sense and logic) which inherently exist within each student.

IV. Other Applications.

Medical School. In 1989 57 medical students experienced a new teaching method in their third year surgery clerkship at the University of Kentucky. 22 students were in the control group. They received traditional Socratic instruction. 35 students were in the problem based learning group. The problem based learning group reported higher performance scores. Richard W. Schwartz, "Developing Student's Cognitive Skills in a Problem Based Surgery Clerkship," *Academic Medicine*, Fall-Spring 1990-91, v67, n1, 53.

Canada. The Socratic teaching method is exciting and effective. Secondary school teacher, David Snell, "Teaching Canada's Charter," *History and Social Science Teacher*, 1987, v24, n2, 17.

Legal Aspects of Geology is an interdisciplinary undergraduate course with twelve students per class. Our emphasis on Socratic discussion develops communication skills and a better understanding of the law. Students and faculty need to be trained in the value of the Socratic Method. This method is more effective with certain personality types. Ronald W. Tank, "An Undergraduate Course in Legal Aspects of Geology," *Journal of Geological Education*, May 1984, v32, n3, 155. Netherlands. My goal is to get fifth grade students in the Netherlands to ask questions. You need to assess the effect of prior knowledge on the type of questions students ask. Department of Education, Hans van der Mirj, "Question Asking: to Know that you do not Know is not Enough," *Journal of Educational Psychology*, Sept 1990, v82, n3, 505.

Law School. The Socratic teaching method is the dominant teaching style in United States law schools. It presumes that the students have read the assigned cases. Frank Guliuzza III, "In-class Debating in Public Law Classes as a Complement to the Socratic Method," *PS: Political Science & Politics*, Dec 1991, v24, n4, 703.

V. My opinions.

Consider the traditional justification for the Socratic Method in law school. Law schools attract the best and the brightest. Law students are bright and motivated. We can expect them to act like adults and do their reading. In part we reward them by using the rarefied Socratic Method in those classrooms.

Perhaps we have this scenario upside-down. We take the teaching style, which focuses attention and teaches higher order thinking skills the best. We use this method on those students who are already the best and the brightest. We take the most boring teaching style (presumably lecture), which teaches fewer thinking skills, and use this for garden-variety students. Humm?

Likewise perhaps we have the advanced placement scenario upside down. We take advanced placement classes on field trips and to movies. Perhaps we should take the remedial classes on field trips and to movies and leave the rest at home.

My experience with the Socratic Method in law school and at Colorado College has convinced me that it is a better method of teaching all subjects and all grade levels. I can foresee remedial math being taught with the Socratic Method. I believe that the same skills, which help law students to see complex relationships, to apply real life experiences and to make difficult balancing decisions in the law, can be used to create active learning situations for third grade science students.

A good video example on the subject is the National Science Foundation, "Meet Kay Tolliver," 1993. This video featured a black teacher who taught at an at risk school in Harlem, New York. She used a dramatic and inventive Socratic Method for teaching sixth grade math. Her energy, creativity and personality were her own. Her teaching style, whether intentional or unintentional was Socratic.

IV. What are good Socratic Questions?

A good Socratic question is open-ended with more than one "right" answer. It is designed to get the student to think. Take book learning and apply it to real life problems. Evaluate an idea against the student's own experiences, thoughts and logic. Students should compare, synthesize and evaluate their own ideas. They should form rules, principles, models and concepts based upon an introspective analysis of their own thoughts. Project and speculate about casualty. Predict future problems and other implications. Search for eternal knowledge, learned generalizations and universal definitions. Assistant Professor of Psychology, James C. Overholster, "Socrates in the Classroom," *The Social Studies*, March-April 1992, v83, n2, 77.

Socratic questions rarely evoke factual information. The intent is to bring information, which has already been processed into the student's awareness and helps them evaluate it. Avoid questions that have a correct answer. Your questions should promote imagination, creativity and divergent thought. If a student answers, "I don't know," rephrase the question or provide an example. Repeating the question or dropping the question does not facilitate learning. Assistant Professor of Psychology, James C. Overholster, "Socrates in the Classroom," *The Social Studies*, March-April 1992, v83, n2, 77.

Good questions are the core of effective teaching. They are the essence of good teaching. Lecture features teacher domination. Socratic discussion involves students as equal participants. Professors of Education: Imogene Ramsey, Carol Gabbard, Kenneth Clawson, Linda Lee and Kenneth T. Henson, "Questioning: An Effective Teaching Method," *The Clearing House*, May 1990, 420.

Socratic questions challenge the students to think critically about their own behavior and beliefs. Socratic questions should recognize and revere the limits of human knowledge. Questioning helps students understand basic ideas and values. This will assist them in making the wisest

possible choices about the conduct of their lives. Carolyn J. Sweers, a high school philosophy teacher, "Teaching Students to Examine Their Lives (Using the Socratic Method in Secondary Education)," Educational Leadership, May 1988, v45, n8, 20.

Socrates went to actual people with strong opinions and examined them carefully about what they thought they knew. The unexamined life is not worth living. Begin class by having each student state their point of view in writing. This gives them a vested interest in the topic. Carolyn J. Sweers, a high school philosophy teacher, "Teaching Students to Examine Their Lives (Using the Socratic Method in secondary education)," Educational Leadership, May 1988, v45, n8, 20.

Chapter Three. Effectiveness.

I. Is the Socratic Method effective?

A. Collins and D. Steve's 1982 study found that inquiry methods were effective in teaching thinking skills and deep understanding. Dave Schumaker's 1985 study revealed that students pay better attention, and listen to each other. They gain a better understanding of concepts. Their test scores and written work improved. Robert J. Kloss, English professor, "Toward Asking the Right Questions: the Beautiful, the Pretty, and the Big Messy Ones," The Clearing House, Feb 1988, 245.

Three instructional methods were compared in a University of Missouri at St. Louis sociology class, Quantitative Techniques in Sociology Class. This was a required class with 175 students. Each class contained three fifty-minute lectures and one fifty-minute lab. In three successive years the same course was taught with three different methods: traditional lecture, Socratic Dialogue with active learning and Keller's Personalized System of Instruction. There was no significant difference in GPAs, major GPAs or IQ (based on the Missouri IQ test scores). The Socratic method was given a positive course rating by 63% of the class versus 60% for lecture. Keller's PSI system received a 82% positive course rating. The mean grade on the final was 84.8 for the Socratic method and 80.3 for lecture. Keller's PSI system's mean grade on the final was 85.4. Professor of Sociology, H.W. Smith, "Comparative Evaluation of Three Teaching Methods of Quantitative Techniques: Traditional Lecture, Socratic Dialogue and PSI Format," Journal of Experimental Education, Spring 1987, v55, n3, 149.

Kay's 1985 study concerned fifteen juvenile males in a correctional facility government class. This class met twice a week for six weeks. This class was based on a Request Model, which attempts to facilitate learning rather than using an authority figure (a teacher) who dispenses information. The teacher was trained under the Manzo method where students are guided toward sources of information. For example, the students read the First Amendment. The students asked the teachers questions about the topic. After all of the student questions had been answered, the teacher would ask the students questions about the reading. The teachers would start with factual knowledge questions. They moved to answers, which could be implied, from the readings. Finally they asked application questions. Under the Socratic method students learned more, $F=4.312$. $P=.035$. They had a positive attitude toward learning $F=.858$. $P=.452$. Sociology teacher, Linda Kay and college curriculum and sociology professor, Jerry Young, "Socratic Teaching in

Social Studies," Social Studies, Jul-Aug 1986, v77, n4, 158.

A yearlong study by the Educational Testing Service of Princeton, New Jersey found that the Socratic method increased scores in English, Math and Science. Richard W. Paul, "The Socratic Spirit: An Answer to Louis Goldman," Educational Leadership, Sept 1984, v42, n1, 63.

The root cause of poor performance among at risk students in grades 4-7 is not inadequate practice. According to Brown 1982, the primary cause is inadequate metacognitive skills. They do not understand what it means to work with ideas. They do not hypothesize, predict or generalize. Stanley Pogrow, "A Socratic Approach to Using Computers with At-Risk Students," Educational Leadership, Feb 1990, 61.

Chapter Six. Low Level Questions.

I. Low level questions.

Stevens' 1912 study indicated that 80% of the school day is spent asking questions. M. Gall's 1970 study and Clegg's 1971 study revealed that teachers ask an average of 395 questions per day. Professors of Education: Imogene Ramsey, Carol Gabbard, Kenneth Clawson, Linda Lee and Kenneth T. Henson, "Questioning: an Effective Teaching Method," The Clearing House, May 1990, v73, n9, 420.

In 1912 Stevens' research indicated that two-thirds of the teacher's questions called for mere memorization of the text. Bloom's taxonomy should be used as a question blueprint. English professor, Robert J. Kloss, "Toward Asking the Right Questions: the Beautiful, the Pretty, and the Big Messy Ones," The Clearing House, Feb 1988, 245.

R. Stevens' 1912 study revealed that 66% of classroom questions merely asked the students to recite information gained from reading the textbook. M. Gall's 1982 study revealed that 60% of classroom questions sought factual answers. 20% concerned classroom procedure. Less than 20% sought any type of inference, transfer or reflection. Dennis Palmer Wolf, assistant education professor, "The Art of Questioning (How Teachers Use Questions to Teach Students)," Journal of State Government, March-April 1987, 81.

Daines' 1986 study indicated that 93% of teacher questions were low level reading comprehension questions. What is two plus two? Name the Russian researcher who noticed that laboratory dogs salivated upon hearing footsteps. Professors of Education: Imogene Ramsey, Carol Gabbard, Kenneth Clawson, Linda Lee and Kenneth T. Henson, "Questioning: an Effective Teaching Method," The Clearing House, May 1990, v73, n9, 420.

Delva Daines 1986 study indicated that 93% of elementary and secondary teachers' questions are on the literal level of reading comprehension. 88% of the required answers require only the lowest level of cognition. Robert J. Kloss, English professor, "Toward Asking the Right Questions: the Beautiful, the Pretty, and the Big Messy Ones," The Clearing House, Feb 1988,

245.

Teachers ask too many who, when, and where questions. They call for too little reasoning. Teachers should ask more how, why and what if questions. Educational psychologist, John F. Check, "Finding and Initiating Questions in Class," The Clearing House, Feb 1985, v58, 270.

Most questions are simple factual recall. They seek small bits of information. Many questions are managerial, Why don't you get your book out and read it? Many questions are rhetorical, Marilyn can't you sit properly? Higher-level questions seek analysis. They require imagination and generalization. Lower level questions are closed ended. They have perhaps one intended right answer. Most higher-level questions are open-ended. They are susceptible to a variety of answers. English teacher, Ted Wragg, "Light Shed on Leading Questions," Times Educational Supplement, Feb 21, 1992, n3947, 10.

50-90% of teacher questions are low level. This is especially true in groups larger than twenty-five. Convergent questions ask who, what, when and where. Convergent questions foster rigid narrow minds. Divergent questions ask how and why. Divergent questions encourage creative thinking and discovery learning. James Gallagher's 1965 study revealed that 50% of teacher questions are strictly memory questions. Allen C. Ornstein, "Questioning: the Essence of Good Teaching," NASSP Bulletin, May 1987, 71.

Hamblen's 1988 study revealed that less than 20% of teacher questions required critical thinking skills. Often the teacher answered their own questions. Professors of Education: Imogene Ramsey, Carol Gabbard, Kenneth Clawson, Linda Lee and Kenneth T. Henson, "Questioning: an Effective Teaching Method," The Clearing House, May 1990, v73, n9, 420.

Between 1976 and 1978 Goodlad studied 1,000 elementary and secondary classrooms. He included 129 elementary schools and 887 secondary schools in a nationwide sample. One trained observer was sent to each classroom. In the elementary schools only 3% of the time was devoted to corrective feedback. 100% of classroom time was teacher dominated. In secondary schools less than 2% of the time was devoted to corrective feedback. In junior high 90% of classroom time was teacher dominated. In senior high 80% of classroom time was teacher dominated. Teachers out talked their students by more than a three to one ratio. Kenneth A. Sirotnik, UCLA, "What You See Is What You Get," Harvard Education Review, v53, #1, Feb 1983.

Around 5% of the time was spent questioning students. Most of the questions were simple factual recall requiring yes or no answers. Less than 1% of the questions were open ended or required complex thinking. Positive corrective feedback was almost nonexistent. The hidden curriculum creates a dependence on authority. It fosters passive learning and mediocrity. This situation has changed little since 1912. By contrast an increase in academically engaged time will increase achievement test scores. Kenneth A. Sirotnik, UCLA, "What You See Is What You Get," Harvard Education Review, v53, #1, Feb 1983.

Although the author had hoped that college professors asked low-level questions in introductory classes and higher questions in higher-level classes, this was not found to be the case. Carole

Barnes 1983 study showed that an overwhelming percentage of college professors asked the lowest level cognition question regardless of subject level. Robert J. Kloss, English professor, "Toward Asking the Right Questions: the Beautiful, the Pretty, and the Big Messy Ones," The Clearing House, Feb 1988, 245.

Chapter Seven. High Level Questions.

I. High Level Questions.

Higher-level questions ask how would you do this? What is the relationship between behaviorism and what you will be teaching in a classroom? Ask, "Why"? Higher-level questions seek deeper thought. They require the students to listen carefully, analyze, and to think critically. Professors of Education: Imogene Ramsey, Carol Gabbard, Kenneth Clawson, Linda Lee and Kenneth T. Henson, "Questioning: an Effective Teaching Method," The Clearing House, May 1990, 420.

Lower level questions seek details. Higher-level questions seek the big ideas and the big picture. Higher-level questions ask the student to demonstrate what they know and how much they understand. Students are required to articulate ideas. Socratic questions require the teacher to focus in on the big ideas, which are worth teaching. Selma Wasserman, The Art of the Question, Childhood Education, Summer 1991, 257.

II. What types of Questions should I Avoid?

Avoid asking questions with only one right answer. Convergent questions foster authoritarian thinking. They foster minds that look for simple rights answers and simple solutions. Such students assume that the right answer depends on authority rather than on rational judgment. Right answers are based on knowledge not personal experience or philosophical thought. This breeds rigid narrow minds. These students fail to recognize that facts and figures are screened thru a filtering process or a social lens. Allen C. Ornstein, "Questioning: the Essence of Good Teaching - Part II," NASSP Bulletin, Feb 1988, 72.

Avoid multiple-choice questions. Avoid fill in the blank questions like, "The new frontier occurred during whose presidency?" Avoid leading questions like, "Why was Andrew Jackson a great president?" Allen C. Ornstein, "Questioning: the Essence of Good Teaching - Part II," NASSP Bulletin, Feb 1988, 72.

III. Socratic Questions and Critical Thinking.

The term, critical thinking, has a number of different meanings. In the broad sense, it refers to higher-level cognitive functions like analysis, evaluation, comparison, application and synthesis.

The Socratic Teaching method teaches critical thinking by requiring the student to listen carefully to the question. The student must evaluate, synthesize, analyze, examine, compare, contrast and apply their own knowledge and experience in an attempt to answer the question.

In sum, the Socratic method teaches critical thinking. A student's facts, beliefs, and assumptions will be questioned by the teacher and evaluated by the class. Students are required to articulate reasons behind their answers and explain the basis for their assumptions.

In a philosophic sense, the focus of knowledge is shifted. Lecture implies that teachers are full of wisdom. Students are empty vessels. The teacher attempts to fill their empty heads with knowledge. In a Socratic classroom the answers lie deep within the students. The teacher's role is to elucidate, clarify, challenge and compare the student's answers with their own thinking, facts, beliefs, and assumptions. A student's thoughts and experiences are the focus, not the teacher's.

The moral is to think for yourself. Do not rely upon some authority figure to do your thinking for you.