

The value of critical thinking

It is a beautiful Monday morning; you are returning from a restful and relaxing vacation with your family. Upon entering your office, you are immediately greeted by your receptionist who indicates that it is imperative, in addition to your regularly scheduled appointments, to also consult with three emergency patients. You are yet to have your first cup of coffee and while reviewing the daily schedule you notice it is already overscheduled without these additional consultations. Your office manager seeks you out and informs you that one of the dental assistants will be absent today due to their child being ill. All this incoming information must be quickly processed in order for you to decide to either stay and confront the many issues of the day or turn around and pretend this day is not actually happening. This scenario may be an exaggeration, but clearly dental practitioners must face many decisions in their day as they multitask in being a clinician, human resource manager, and business person/entrepreneur. To make reasonable and strategic decisions, whether consciously or not, the dental practitioner might consider enlisting the principles of critical thinking. Simplistically, critical thinking is the process of thinking about thinking.

The origins of critical thinking date back some 2,500 years to the teaching practice and vision of Socrates (c. 469–399 BC) while Plato (428–347 BC) was the first to record and document these philosophical teachings. Socrates discovered by a method of probing and questioning that people could not rationally justify their confident claims to knowledge. Confused meanings, inadequate evidence, or self-contradictory beliefs often lurked beneath smooth but largely empty rhetoric. Socrates established the fact that one cannot depend upon those in “authority” to have sound knowledge and insight. He demonstrated that people may have power and high position and yet be deeply confused and irrational. He established the importance of asking deep questions that probe profoundly into thinking before there is the acceptance of ideas as worthy of belief. It is noteworthy that the word “critical” derives etymologically from two Greek roots: *kriticos* (meaning discerning judgment) and *kriterion* (meaning standards). Etymologically, then, the word implies the development of “discerning judgment based on standards”; it implies a critique.

The definition of critical thinking, over the years, has several iterations; however, the one proposed by Scriven and Paul is rather robust and inclusive. They stated that “Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness.”¹ Essentially, critical thinking incorporates two main components: (1) a set of information and belief generating and processing skills, and (2) the habit, based on intellectual commitment, of using those skills to guide behavior. Hence, it is much more intellectual than: (1) the mere acquisition and retention of information alone (more than just the sheer memorization of facts), because it involves a particular way in which information is sought and treated; (2) the mere possession of a set of skills, because it involves the continual use of them; and (3) the mere use of those skills (“as an exercise”) without acceptance of their results. Overall, critical thinking champions being an active learner (asking the right questions, understanding logical connections between ideas, engaging in reflective and evidence-based thinking) rather than a passive recipient of information. Critical thinkers rigorously question ideas and assumptions rather than accepting them at face value. They will always seek to determine whether the ideas, arguments, and findings represent the entire picture and are open to finding that they do not.

When humans think, the majority of thinking, left to itself, is usually biased, distorted, partial, incomplete, uninformed, irrational, prejudiced, and often associated with cognitive biases (systematic patterns of irrational thinking such as catastrophic thinking, confirmation bias, and fear of missing out). Yet, this daily process greatly influences the quality of life and that of what is produced, made, or built. Shoddy thinking is costly, both in economic terms and in quality of life. Excellence in thought, however, must be systematically cultivated. Critical thinking facilitates the inquiry of vital questions and problems,

formulating them clearly and precisely; gathers and assesses relevant information, using abstract ideas to interpret it effectively resulting in well-reasoned conclusions and solutions and testing them against relevant criteria and standards; promotes open-minded thinking within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and encourages effective communication with others in resolving solutions to complex problems.²

In order to adhere to this Socratic method, the future dental practitioner must be educated on the foundational skill set of identifying a problem, determining the best solution, and choosing the most effective method for resolution. After executing the plan, they should be taught as part of the critical thinking process to reflect on the situation and determine if the action was effective and/or if improvement could have been provided in its execution. This methodology should, at the very least, be introduced upon entry into dental school at the pre-doctoral level with knowledgeable and trained faculty incorporating these concepts throughout the dental curricula.

Hopefully, in returning to the introductory scenario, the dental practitioner, with implementation of critical thinking potentially fostered from their dental education, the individual will survive the unfortunate events of the Monday morning with a positive resolution and an invaluable learning experience to reflect upon. Critical thinking therefore leads to empowerment

by enriching and enhancing our abilities in making prudent and intelligent decisions.

Let us all embrace these ideals!

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References

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