



Product Research & Documentation

Critical Thinking

for School Leaders

Principal Success Series

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Critical Thinking for School Leaders is an administrative resource that is part of the Principal Success Series. This book provides a wide range of information related to critical thinking and emphasizes the impact of thinking on learning. Teaching students to think critically can promote student engagement and enhance academic performance. *Critical Thinking for School Leaders* will provide principals a tool with which to cultivate a thinking culture throughout the school. To create a thinking culture, it is essential that school leaders demonstrate they value critical thinking, they support a thinking focus throughout the entire school, and they nurture a thinking environment for staff, students, and the school community.

Embracing critical thinking and purposefully cultivating a thinking environment throughout the school is essential for preparing all learners to succeed in school and throughout their lives. Developing critical thinking begins in the early grades and continues throughout the education years. In order to process the wide range of available information or content that changes almost daily, students need to learn to think critically. Learning to assess the credibility of sources, knowing when more information is needed, recognizing the need for multiple perspectives before making a decision or arriving at a solution, evaluating a situation using criteria, and forming opinions with supporting evidence are only a few of the actions students exhibit when they become independent and deeper thinkers.

With the purpose primarily devoted to developing skillful thinking, the book *Critical Thinking for School Leaders* is presented in three sections, each related to enhancing thinking. The first section consists of articles that span a wide range of topics associated with promoting critical thinking. The content in Section 1 in *Critical Thinking for School Leaders* is written by educators with experiences as principals or other leadership

roles in the schools. The second section contains articles that relate to how critical thinking is infused into three content-specific areas of English Language Arts, Mathematics, and Science. In Section 2, contributing authors share their expertise as classroom teachers and as curricular writers in their respective fields of study. In the final section, content is included that will be useful in building background information surrounding critical thinking. Featured topics include Sample Charts and Rubrics, Key Findings, Frequently Asked Questions, Discussion Questions, and Action Tasks. All contributors share their knowledge of critical thinking to enhance thinking in today's schools. Through the collection of articles and resources, the intent is to create transparency in critical thinking, resulting in the success of students, teachers, and school leaders.

The overall purpose of this book is to support the school leader in creating and sustaining a thinking-centered environment that enhances skillful thinking within students and staff. School leaders have a responsibility to ensure that appropriate critical thinking opportunities occur in classrooms. To maximize the effectiveness of integrating thinking opportunities into daily instruction for improved teaching and learning, school leaders should demonstrate they value critical thinking. Content from this book will enable school leaders to:

- develop and expand an understanding of the relationship between critical thinking and school success;
- cultivate a school-wide environment that values thinking;
- collaborate with teachers to design a plan for a critical thinking initiative;
- support teachers in establishing thinking-centered classrooms;

- become more intentional in efforts to support teachers as they embed thinking into daily instruction;
 - facilitate conversations throughout the school community (staff, students, parents, and others) to build capacity and support for critical thinking;
 - acquire a common thinking language to promote engagement in relevant, motivating, and collaborative conversations about critical thinking;
 - reflect on thinking practices/habits about self and discover ways to improve;
 - examine current practices throughout the school and improve the integration of thinking across the grade levels;
 - assess teacher needs and collaborate to help form continuous goals for improvement as well as identify professional development opportunities; and
 - use the Discussion Questions and Action Tasks at the back of the book for reflecting, evaluating, and proposing next steps that build and enhance critical thinking.
- Critical thinking is a major intellectual and practical skill that appears to be a skill that many students entering higher education and the workforce are not only lacking in function but also in understanding what the concept is (Rowles, Morgan, Burns, & Merchant, 2013; Choy & Cheah, 2009; Henderson-Hurley & Hurley, 2013).
 - The Association of American Colleges and Universities, Standards for Accreditation of Medical Education Program, Accreditation Council for Pharmacy Standards and Guidelines for the Professional Program in Pharmacy, American Dental Education Association, and many more organizations cite critical thinking as a major intellectual and practical skill, particularly in health science education (Rowles, Morgan, Burns, & Merchant, 2013).
 - Due to the accountability for improvement in test scores or assessments, it appears students are exiting the K–12 education years lacking the critical thinking skills necessary for success in higher education and in the workforce (Smith & Szymanski, 2013).
 - Several reasons might exist as to why educators appear to not have a strong focus on critical thinking: a need for improved assessment scores, the desire for an accepted definition for critical thinking, and the knowledge of how to provide instruction on thinking and enhance critical thinking skills (Choy & Cheah, 2009).

Research does exist about critical thinking. The importance of critical thinking skills has been established and educators accept this without question; although, further research is needed to better define specific practices that enhance thinking across the subject areas. Included in the following paragraphs are many key findings that relate to embedding critical thinking during instruction.

Although critical thinking is cited as essential, many students appear to lack these skills. This finding confirms the need for schools to carefully design a plan that shows thinking to be an integral part of the curriculum. When students learn to think in depth, then deeper understanding and deeper learning can occur.

Teachers can integrate techniques and pedagogy to enhance and facilitate critical thinking in levels K–12. Findings support that thinking can be enhanced through explicit teaching, with strategies such as think aloud and modeling, and by teachers who know how to facilitate and integrate thinking during intentionally planned instruction.



- Research suggests that a more in-depth focus on enhancing critical thinking skills in K–12 can add academic rigor and increase the scores on the standardized assessments (VanTassel-Baska, Bracken, Feng, & Brown, 2009; McCollister & Saylor, 2010; Snodgrass, 2011; Tsai, Chen, Chang, & Chang, 2013).
- Rebecca Stobaugh (2013a; 2013b) advocates the inclusion of critical thinking skills into daily instruction to provide students practice and experiences to reason effectively, make rational judgments and decisions, and solve problems. Such opportunities prepare students for assessments, rigorous higher-education expectations, demands of the work place, and challenging life situations.
- By incorporating activities to enhance critical thinking, students are better able to understand why something occurred as opposed to understanding what occurred. When students seek to analyze circumstances and various perspectives associated with the occurrence, a deeper understanding results (Tsai, Chen, Chang, & Chang, 2013).
- Critical thinking-based questioning can be embedded during direct instruction, small group work, or other activities to promote thinking. When teachers purposefully plan and integrate deeper questioning in classroom instruction, students' critical thinking abilities can be significantly improved (Renaud & Murray, as cited in Barnett & Francis, 2012).
- Information should be processed rather than memorized. Evaluation of information and sources helps students learn appropriate procedures for locating and

utilizing credible information. Thinking critically about the wide range of accessible information and determining what is trustworthy also assists students in learning acceptable and appropriate ways to utilize good judgment and make responsible decisions (McCollister & Saylor, 2010).

- The findings of Arend (2009) revealed support for the online discussion board as an opportunity to develop and enhance critical thinking, as well as to enable students to acquire a better understanding of the initial information and subject-specific content presented in class.

Educators should assume the role of facilitators in developing critical thinking skills. The role educators play in developing critical thinking is different from the role they typically play. Students must be active learners in the thinking and learning process. When teachers become skilled at facilitating, students become active participants rather than passive in their learning.

- To engage students in critical thinking, it is important that the educator serve as a facilitator to allow for discussion and encourage a freer thought process, as well as model an understanding that thinking critically does not always conclude with a right answer, but sometimes ends in more questions or differing evaluations of the topic (Halx & Reybold, 2005; Arend, 2009).
- The educator's role as facilitator encourages students of all ages to explore and use a peer-review process. This process helps students learn appropriate responses to conflicting evaluations and opinions (Henderson-Hurley & Hurley, 2013; Tsai, Chen, Chang, & Chang, 2013).

- Activities such as writing essays and utilizing questions associated with Bloom's Taxonomy of higher-order thinking are examples of ways to engage students in thinking critically in the classroom (Smith & Szymanski, 2013).
- The utilization of wikis in education provide options to enhance critical thinking as well as students' skills in technology. Having students create a wiki about the subject content they are studying or inviting students to analyze and challenge the information currently available in existing wikis are example activities (Snodgrass, 2011).
- Hess & Gong (2014) advocate that shifts occur in teacher-student roles during learning that support deeper thinking. Observation during instruction should note a move from teacher-directed to student-directed learning.

Critical thinking skills can be integrated in any subject. The development of critical thinking skills is not only applicable to core subjects such as reading, math, language arts, science, and social studies but can be developed in all others.

- Kokkidou (2013) advocated that critical thinking can be developed in music education by examining musical environments, comparing and contrasting different eras or pieces of music, and self-evaluation of performance.
- Working to increase critical thinking by students has shown some promising results for both students and educators. Kokkidou (2013) discovered by challenging students to think critically, educators themselves began thinking more critically about their subject of expertise.
- Critical thinking can be infused in lessons throughout all disciplines by utilizing in-

depth questioning and evaluation of both data and sources (McCollister & Saylor, 2010).

- Tsai, Chen, Chang, & Chang (2013) found that enhancing the critical thinking among students in science classes helped students better understand the scientific process as well as encouraging students to become more experimental and questioning of the different aspects of the sciences.
- VanTassel-Baska, Bracken, Feng, & Brown (2009) reported findings from a longitudinal study showed an increase in reading comprehension and reading assessment scores in Title I schools when critical thinking skills were being addressed.
- Critical thinking skills are essential for reading comprehension and problem-solving, all important in standardized assessments (VanTassel-Baska, Bracken, Feng, & Brown, 2009; McCollister & Saylor, 2010; Tsai, Chen, Chang, & Chang, 2013).

Professional development opportunities are key to the successful integration of critical thinking into daily instruction. It is important that any changes to the curriculum be met with training about the new initiative or activities and about how to implement to the full effect. When a common language permeates the school, instructional conversations become more focused on established campus goals.

- The establishment of professional learning communities allows educators to think critically about the methods they are using to teach, and is a good starting point for ideas about inclusion of critical thinking skills in the classroom (Smith & Szymanski, 2013).
- Choy and Cheah (2009) and Rowles, Morgan, Burns, and Merchant (2013) reported



that while educators feel they are teaching critical thinking skills, their teaching can be enhanced with an agreed upon definition of what critical thinking is all about. This common understanding would guide educators from all grade levels to enhance existing curriculum with activities and lessons that promote the development of critical thinking.

- According to Linda Elder (2010), those who teach students to think critically must be well versed in critical thinking and in teaching strategies associated with thinking. Elder advocates long-term professional development if teachers are to effectively foster critical thinking where students demonstrate intellectual skills and traits and think their way through content. Critical thinking should be viewed not in isolation but as central to the curriculum.
- To reap the highest benefits from professional development, training should be focused on school-wide initiatives and goals. When walkthrough data is used to guide and determine the effectiveness of professional development initiatives, teacher and student success increases. Teachers can collaborate with school leaders to identify goals to help improve their practices and the school as a whole can establish goals surrounding initiatives to improve performance. According to research, evidence gained from walkthroughs proves valuable in helping district and campus administrators make informed changes in the professional development offered (Supovitz & Weathers, 2004). Classroom walkthroughs can yield evidence to support continuous improvement and growth.

All the presented findings indicate a relationship exists between critical thinking and student achievement. The accountability of school districts is based on student performance. Schools and districts are expected to prepare their students to perform at exceptional levels in order to meet the federal and state requirements and to address the expectations of parents and communities. To ensure students are equipped to excel at higher and deeper levels, teachers must be knowledgeable in preparing students to be successful in the classroom and administrators are ultimately responsible for the performance of teachers and students. Students who are skilled thinkers can process content and engage in learning at deeper levels. Ensuring that teachers facilitate thinking with their students that connects to learning is not automatic. It takes commitment, time, practice, and support. The information collected from this shared literature review was carefully studied by the Teacher Resources Product Development Team and used as evidence to support the development of *Critical Thinking for School Leaders*. Based on the articles and resources within this book, the content guides school administrators to become instrumental in maximizing student learning and in cultivating thinking-centered schools.

Critical Thinking for School Leaders validates the importance of thinking and the creation of a school-wide thinking climate. Successful classroom cultures for thinking can result in improved teacher and student performance and increased overall achievement. Thoughtful and deeper learning depend on students' abilities to think for themselves. This resource acknowledges that thinking can and should be taught. By developing thinking early in school and continuing throughout the K–12 education years, this life-long and crucial skill helps students succeed in school and

in life—whether it be in the work force, the home, or community. Based on the aforementioned findings and information, school leaders have a responsibility to lead the charge in creating a school with thinking-centered classrooms.

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