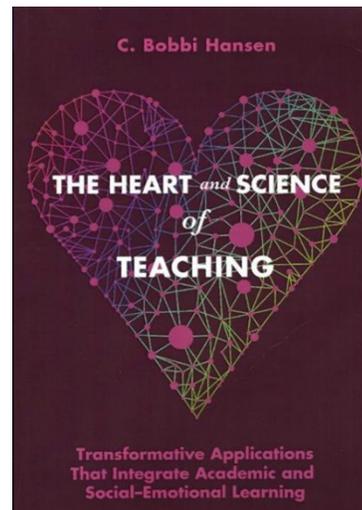


Hansen, C. B. (2019). *The heart and science of teaching: Transformative applications that integrate academic and social-emotional learning.* Teachers College Press.

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Is teaching an *art*, or is it a *science*? For years this question has been discussed in preservice teacher education programs. Although appealing arguments could be made to support either perspective, there has never been a definitive answer to the question. Marzano (2007) concluded that teachers must integrate both the art and science of teaching to effectively reach each student in the classroom. In her exploration of how good teaching requires both *heart* and *science*, C. Bobbi Hansen, an associate professor in the School of Leadership and Education Sciences at the University of San Diego, asks preservice teachers and practitioners, “How do you want to be as a teacher?” (p. 7). In *the Heart and Science of Teaching*, she invites educators and preservice teachers to reflect on the importance of incorporating social-emotional learning (SEL; *the heart of teaching*) and neuroscience-based instructional techniques (*the science of teaching*) into their practice.

The book is divided into three distinct parts that explore the *heart* and *science* of teaching. Hansen blends elements from the fields of education, neuroscience, and psychology to reveal how each forges a connection to support successful teaching and learning. The first section introduces the concept of social-emotional learning (SEL) and its impact in the classroom. In recent years, SEL has become more widely recognized and integrated into school curricula due to its reported benefits in student achievement, social-emotional competence, and mental health (Corcoran et al., 2018; Moreover et al., 2010; Panayiotou et al., 2019). Hansen discusses the use of SEL practices within a standards-based curriculum, specifically the utilization of cooperative/collaborative learning, service learning, and restorative justice practices. The key to developing SEL in the classroom is fostering positive relationships between teachers and students. The author also reminds the reader how the school environment influences student outcomes: Positive environments encourage “... learners to reach their full potential as human beings” (p. 125). The modeling of SEL

practices in the classroom supports strong communal relationships and a welcoming environment for students to learn.

Hansen discusses the *science* of teaching in the second section, blending elements of neuroscience and cognitive psychology/science to show how the brain functions with respect to learning. Neuroscience explains the process of acquiring and building knowledge – how brain cells communicate to build on prior knowledge and how the brain processes and retains new knowledge. Cognitive psychology/science explains how students learn and retain information. In this section, the author offers suggestions for K-12 science-based teaching strategies to incorporate across the curriculum, including teaching with narratives (using stories) and poetry, incorporating real-world examples, hands-on approaches, simulations, historical plays, and mock trials, and using visuals such as graphic organizers, PowerPoint, and videos to enhance student learning.

The third section covers 21st-century learning tools and, in particular, project-based learning (PBL). PBL is based on the principles of constructivism, in which the student is viewed as active in the processes of learning and building knowledge to solve problems and motivated to learn by the purpose of the investigation. With learning-by-doing at its core, PBL incorporates projects whereby students learn to apply the 4 Cs (critical thinking, communication, collaboration, and creativity) to reach specific learning goals. PBL strategies have been proven to increase deeper student knowledge and higher achievement on standardized tests (Blumenfeld et al., 1991; Geier et al, 2008). Hansen shares resources such as the Buck Institute for Education (www.bie.org), which provides research and support for teachers who want to incorporate PBL into their teaching. In addition, the author provides a generic outline of steps to facilitate PBL so teachers may offer students choices, support inquiry and problem solving, an authentic learning experience that is transferable to real-world applications.

Hansen suggests one answer to the question, “How do you want to be as a teacher?” might be “a teacher who is able to use 21st-century learning tools”. In the final section of this volume, the author notes that the advance of cyber technology and digital tools has changed the way teachers teach and students learn. In most schools, the digital revolution has promoted blended learning opportunities in which traditional learning strategies are combined with available classroom technology for online exploration of the worldwide web of information, including videos and games, and the use of software applications. Hansen agrees that blended learning provides opportunities for individualizing and differentiating student learning for enhanced achievement (Delgado et al., 2015; Shachar & Newman 2003) and teacher-student interactions. Here, Hansen focuses on technology tools such as podcasting, and a variety of tools provided by Google (Google Forms, Google Slides, Google Drawings, Google Earth and Maps, Google Voyagers, and Google Sheets) and a vast number of digital applications that can be utilized in classrooms to support communication, collaboration, and creativity.

While teaching my theory and field experience course online (due to the COVID-19 pandemic), I adopted *The Heart and Science of Teaching* as the course

textbook. The course was designed to expose the students to everything they might see in an early- or middle-level classroom (teacher/student interactions, instructional strategies and resources, classroom management techniques, and an overview of the school, classroom, and learning community). In this course, students were asked to reflect on the role of the teacher and determine whether teaching is the career for them. Hansen's book provided a framework for the preservice teachers to reflect on the teacher they want to be. They were able to develop a deeper understanding of what teachers do to develop positive and safe learning environments as well as identify strategies to improve student learning by enhancing instruction through collaborative processes, neuroscience teaching, evidenced-based teaching, project-based learning, and the incorporation of technology tools to enrich learning opportunities.

Easy to read and filled with resources for the K-12 practitioner, including websites, books, and articles, *The Heart and Science of Teaching* is an accessible and resource-packed volume well worth reading for current and preservice teachers. While Eric Jensen's (2008) *Brian-Based Learning* offers valuable insights into the workings of the brain and connections between neuroscience and learning, this book adds other dimensions that educators may find valuable, such as how to become changemakers through community service, how to create emotionally safe classrooms, and how to use technological tools in their teaching. Focused on topics ranging from social-emotional learning (SEL) and cooperative learning to neuroscience and evidence-based instruction to project-based instruction and the use of technology, this book offers practical suggestions to assist educators in developing both *heart* and *science* approaches in their teaching. I recommend this volume to educators seeking to make deeper connections with their students and reflect on the *kind of teacher they want to be*.

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