

Can Educators “Shape Intelligence”?

A few weeks ago, I was listening to my son's dean speak at a Parents' Day event at his school. Despite the fact that his presentation was for an entering high school class, his thesis about the shaping of students' intelligence was fascinating and made me wonder whether dental educators can shape the intelligence of dental students. In his presentation that night, the dean talked about how social-psychological interventions can shape intelligence in middle schools, high schools, and college. Being the academic type, I wanted to see the evidence. He presented three sources for his argument.

In the first, Dweck¹ describes two types of learners: helpless versus mastery-oriented. According to her, helpless learners have a “fixed mind-set.” When these learners make mistakes, they lose self-confidence and blame a lack of ability that they feel they cannot change. Furthermore, they avoid challenges because they feel they are more likely to make mistakes. Dweck then defines mastery-oriented children as those who think intelligence is malleable and can be developed through education and hard work. These students want to learn above all. Does this distinction sound familiar to any dental educators?

The Hattie book² includes a significant review of the literature on the effect of a variety of parameters on achievement. His findings show us that the way teachers behave and traits that are human-centered (interactivity, concern for students, asking questions, and better organization of teaching) lead to better achievement. Hattie's research is also featured on YouTube videos.^{3,4} Finally, the Yeager and Walton article⁵ presents research that shows how brief social-psychological interventions can lead to large gains in student achievements, in both the short and long term.

Dental educators can learn a great deal from these educational experts about productive ways to interact with their students and create an environment that promotes learning. Indeed, our profession is always improved by efforts that bring research from the educational literature to bear on many aspects of dental education. The articles in this month's Educational Methodologies section are strong evidence of this point in their focus on such topics as critical thinking, team-based learning, self-assessment, portfolios, problem-based learning, and active and cooperative learning. Johnsen et al.'s article describes concepts from the education literature that can effectively guide

dental student learning and performance assessment for complex thought processes. In their article, Amyot et al. review research findings on portfolios in education to support their description of how portfolio assessment was introduced in two U.S. dental schools. In addition to these two articles addressing formative assessment, three articles describe how faculty members are using a specific tool developed in the educational literature to aid their students' learning. Yoder and Edelstein developed an active learning forum to teach students about oral health policymaking; Matsuka et al. use a PBL tutorial to help their students understand the complex management approach needed to care for elderly patients in a nursing home; and Mattheos et al. describe their use of team-based treatment planning to facilitate interdisciplinary training for their students in dental and allied dental education.

As the high school dean finished his talk, he told us as parents and teachers to be “coaches and allies rather than judges” and that “the feedback we give matters: it can shape intelligence.” He told us that we should “praise our children's effort and strategies, note their growth, and affirm their sense that their intelligence is malleable and can grow.” All this helps us to “enlist them in their own growth.” While there are many differences between the educational focus of high schools and dental schools, educators in both venues can do much to shape their students' intelligence in ways that will make them more successful learners—as well as, in the case of dental education, more effective dental care providers, academicians, and researchers.

REFERENCES

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