



## Critical Thinking Skills in a Doctoral Physical Therapist Program: The Development of a Skill-Building Workshop for Students

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As a university professor teaching in a physical therapy program, I have been very interested in ways to improve the reflective critical thinking strategies of students who will soon be working in the clinical setting with patients. My research has therefore focused in part on the development, implementation and evaluation of the effectiveness of a workshop, created to help physical therapist students develop skills in clinical decision-making strategies that require reflective critical thinking. My hypothesis during the workshop conducted in 2008 was that there would be a significant increase in student Health Sciences Reasoning Test (HSRT; a version of the California Critical Thinking Skills Test) scores after attending the workshop when compared to a control group of students who did not yet attend the workshop. The development of this 2008 workshop was based upon the elements depicted in Bloom's Taxonomy [1-3], incorporating strategies for metacognition [4] collaborative learning with attention to the zone of proximal development [5] and hands-on learning [6]. Students from two class cohorts were separated into two different groups using controlled random assignment. One group attended the workshop and one did not. All students (experimental and control) took the Health Science Reasoning Test (HSRT) before and after the first three-session workshop. Although there were gains in the problem solving and evaluation scores for the experimental group, these were not found to be statistically significant when compared to the control group. In a post hoc analysis of the experimental group alone, significant gains were found, between the total pre and post test HSRT scores for the African American participants ( $p=.027$ ). The Caucasian group also showed increased total HSRT scores, but these were not shown to be statistically significant. Although the Caucasian group demonstrated much higher total HSRT scores than the African American group for the pre-test, the African American group's post-test scores surpassed the scores of the Caucasian group after the workshop. Although the reason for this remains unclear, this information could help provide an indication of the teaching strategies that are most effective for various groups. One African American student surmised that the workshop helped her increase the HSRT score because it was information she "had never been exposed to before," where many of her Caucasian counterparts had previously experienced some form of critical thinking course. She believed that the novelty of the activities in the workshop made it more effective. This research supports the assumption that the workshop was effective to build decision-making strategies that require reflective critical thinking for the African American student participants. Further research is currently being conducted to learn whether or not providing novelty to all students in the classroom might help improve scores for all students and not just a sub-group.

### References

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