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College of Veterinary Medicine and Biomedical Sciences

## Critical Thinking Skills and Disposition among Veterinary Students at Texas A&M

“We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is.” (Facione, 2010)

### AIMS

Veterinarians need critical thinking skills; veterinary education must, therefore, incorporate the assessment of or training in critical thinking. In particular, veterinarians require critical thinking in the practice of evidence-based veterinary medicine and the accurate and appropriate diagnosis and treatment of veterinary patients.

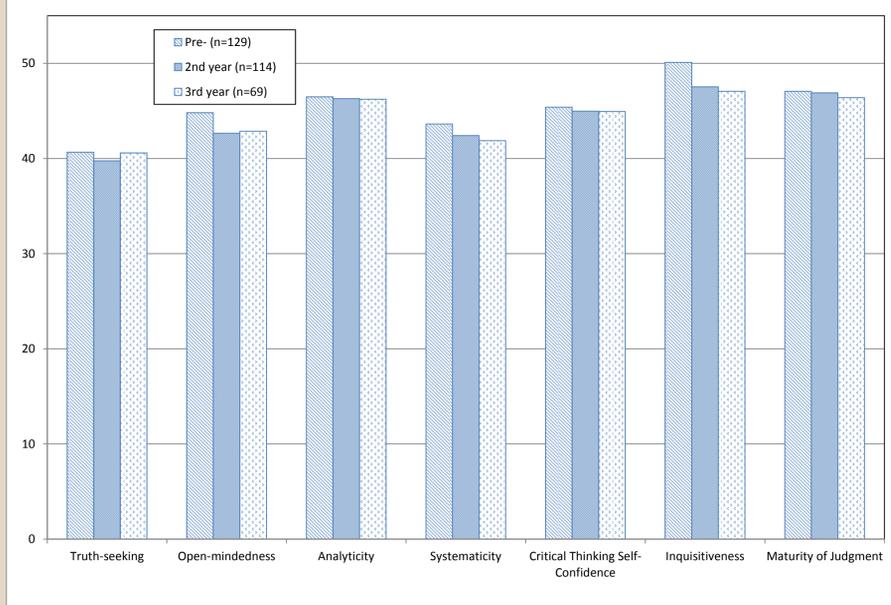


### Methods

Two test instruments were used to assess critical thinking skills and disposition among veterinary students 3 times during their veterinary training, at the beginning, after the 2<sup>nd</sup> year, and after the 3<sup>rd</sup> year. The instruments were the California Critical Thinking Skills Test (CCTST) and the California Critical Thinking Disposition Inventory (CCTDI).

Mean total scores for CCTST were 21.6, 21.2, and 22.9, at pre-, 2<sup>nd</sup> year, and 3<sup>rd</sup> year, respectively. These averages can be categorized as “strong” (categories are weak, moderate, strong and superior). CCTDI mean total scores were 318, 311, and 310, at pre-, 2<sup>nd</sup> year, and 3<sup>rd</sup> year, respectively. These averages can be categorized as “positive” (categories are low, ambivalent, positive, and high).

Mean Scores on the California Critical Thinking Disposition Inventory

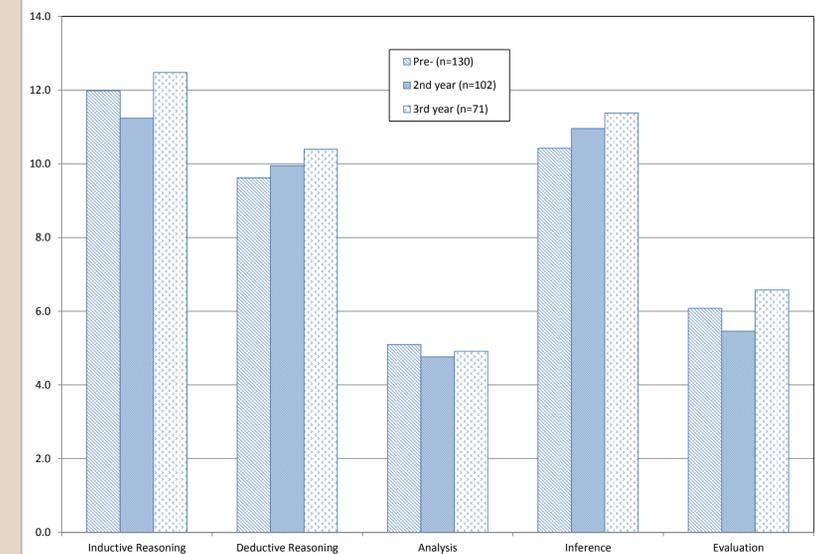


Mean scores for critical thinking disposition categories were unchanged or statistically significantly lower after 2 or 3 years in the veterinary curriculum.

<http://insightassessment.com/Products/Critical-Thinking-Skills-Tests/California-Critical-Thinking-Skills-Test-CCTST>

<http://insightassessment.com/Products/Critical-Thinking-Attributes-Tests/California-Critical-Thinking-Disposition-Inventory-CCTDI>

Mean Scores on the California Critical Thinking Skills Test



Mean scores for the 5 critical thinking skills were unchanged or statistically significantly higher after 2 or 3 years in the veterinary curriculum.

### CONCLUSIONS and NEXT STEPS

These results should be shared with veterinary instructors at Texas A&M to consider if the measured critical thinking skills and disposition are adequate to meet the needs of future veterinary professionals. If not, we need to ask whether we should be looking at our instruction methods and course learning objectives to determine if and when we could incorporate critical thinking skills development in all years of the curriculum. We did not test students at the end of the veterinary curriculum and do not currently have plans to do so. Perhaps critical thinking skills increase again after the 4<sup>th</sup> year, during which students complete clinical rotations synthesizing and applying information learned during the first 3 years.

	Pre- to 2nd year	2nd to 3rd year	Pre- to 3rd year
<b>DISPOSITION</b>			
Truth-seeking	NS	NS	NS
Open-mindedness	↓ [p<0.001]	NS	↓ [p<0.01]
Analyticity	NS	NS	NS
Systematicity	↓ [p=0.038]	NS	↓ [p=0.048]
Critical Thinking Self-Confidence	NS	NS	NS
Inquisitiveness	↓ [p<0.001]	NS	↓ [p<0.001]
Maturity of Judgment	NS	NS	NS
Disposition Total	↓ [p=0.001]	NS	↓ [p=0.027]
<b>SKILLS</b>			
Inductive Reasoning	↓ [p<0.001]	↑ [p<0.001]	NS
Deductive Reasoning	NS	NS	NS
Analysis	↓ [p=0.012]	NS	NS
Inference	↑ [p=0.039]	NS	↑ [p=0.009]
Evaluation	↓ [p=0.002]	↑ [p<0.001]	NS
Skills Total	NS	↓ [p=0.003]	↑ [p=0.057]