

How Assessment Informs Teaching and Learning: A Case Study in Criminal Justice

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**ABSTRACT**

This study assessed the validity of components of the SUNY critical thinking rubric applied to a criminal justice final paper. Critical thinking skills for two specified learning outcomes of the course were assessed through the application of the SUNY critical thinking rubric and another established measure of the criminal justice constructs under review, thus providing an opportunity to measure the convergent validity between these two measures. Results indicated that with the exception of one instance, students who demonstrated critical thinking skills in their final paper likewise demonstrated mastery of the respective learning outcomes. This study found evidence of convergent validity between the targeted learning outcomes and critical thinking as measured by the SUNY Critical Thinking Rubric.

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## **Introduction**

The age old art of teaching is increasingly subject to evaluation and measurement. Some faculty members do not welcome this trend and appear to be very reluctant, if not hostile, toward empirical assessments of their teaching. Faculty criticism of teaching assessments range from claims stating the process is a waste of time for “good teachers,” (Pontuso and Sarranna, 2008) to feelings of violation, distrust and suspicion (Ventello, 2008). These powerful reactions beg many questions, but nonetheless indicate that the process can be stressful for faculty regardless of experience. Thus, it is important to explore best practices for successful collaborations between assessment professionals and faculty. This study applied the SUNY Critical Thinking Rubric to an Introduction to Criminal Justice final paper. Accordingly, this study is an exercise in demonstrating the validity of the SUNY Critical Thinking Rubric.

The instant study grew out of a collegial challenge between an assessment specialist at the State University of New York: Suffolk County Community College and an assistant professor at Towson University. The collaboration started after the Towson faculty member expressed satisfaction over “perfecting” a final paper that integrated a court observation, research skills, and critical thinking components of an Introduction to Criminal Justice (CJ) course. In response to the boastful claim, the assessment professional merely asked, “Sounds good, but is it valid?” –so began the study.

## **The Study**

This study examined two central questions about the final assignment:

- 1.) Does this assignment foster critical thinking skills?
- 2.) If so, how are the critical thinking skills demonstrated?

The study also provided an opportunity to apply the SUNY Critical Thinking Rubric, thus

assessing the convergent validity within the assignment, (i.e. the overlap between different tests that presumably measure the same construct.)

Two learning objectives for the course entitled, “*Sociological Perspective/Extralegal Factors*” & “*Individual Rights vs. Community Safety*” (hereinafter “*Sociological*” & “*Rights*” constructs) were emphasized throughout the semester and assessed in the final assignment. The two constructs under review were derived from the learning objectives for the course: “By the end of the course the student should be able to:

A.) Analyze the operations of criminal justice from a sociological standpoint by exploring the extralegal factors that influence the criminal justice process and the disparities that result (*Sociological*); and,

B.) Examine the criminal justice process in the context of the contradictory concerns for protecting individual rights and safeguarding community interests (*Rights*).”

Three 50-question objective-style tests were generated from a nationally distributed CJ publisher’s test bank. The faculty member identified relevant test questions operationalizing the *Rights* and the *Sociological* constructs with the goal of creating a reliable scale for assessment purposes. Reliability was assessed in terms of inter-item reliability (or internal consistency) which treats each construct as a “mini-test” of the respective CJ learning objective.

In order to construct the respective scales, item analysis was conducted to determine which test items together displayed the strongest internal consistency. This was accomplished by analyzing the effect of removing each item on the remaining-items’ correlation, aiming to reach the highest possible Cronbach alpha. The resulting *Sociological* and *Rights* scales consisted of 3 and 5 items respectively.

The response scale for all selected items consisted of a standard 5-item multiple-choice response scale. Both scales demonstrated good internal consistency (i.e., Cronbach alpha coefficient (Sociological Scale) = .755 and Cronbach alpha coefficient (Rights Scale) = .792).

Students' performances on the two scales were very good. Average scores on the Sociological Scale and Rights Scale was 85% and 87%, respectively. For data on the grade distribution for the respective scales, please see Tables 1 and 2, below.

**Table 1: Sociological Scale Grade Distribution (Average = 85%)**

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<b>Score</b>	<b>N</b>	<b>%</b>	<b>Cumulative %</b>
0	3	5.9	5.9
33	4	7.8	13.7
67	6	11.8	25.5
100	38	74.5	100.0
Total	51	100.0	

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**Table 2: Rights Scale Grade Distribution (Average = 87%)**

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<b>Score</b>	<b>N</b>	<b>%</b>	<b>Cumulative %</b>
0	3	5.9	5.9
60	4	7.8	13.7
80	10	19.6	33.3
100	34	66.7	100.0
Total	51	100.0	

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### **The Assignment**

The paper assignment provided an opportunity to coalesce all resources from the class into one analytical paper. Resources for the paper included observations of criminal court, readings from the text, lecture and in-class exercises. Students were required to observe three hours of a local felony-level criminal court.

Students were instructed to: “*Analyze the operations of the criminal justice system from a sociological standpoint by exploring the extralegal factors that influence the criminal justice process and the disparities that may result;*” and, in another respect, “*Examine the process in*

*terms of the balance between protecting individual rights and safeguarding community interests.”*

The faculty member rated the *Sociological* and *Rights* constructs according to Critical Thinking Criteria 1 & 2 of the SUNY Rubric for argument development. The SUNY Rubric assesses two learning outcomes, i.e. the student’s critique of another’s argument and the development of the student’s own argument. The first outcome focusing on the critique of another’s argument was not relevant to the assignment, so the study focused exclusively on the second section of the Rubric addressing the student’s ability to develop an argument. The assessment of “argument development” consists of two criteria: Critical Thinking Criteria 1 (CT1) “Develop a clearly articulated argument, using evidence and/or systematic logical reasoning in support of a conclusion or point of view.” The second criterion was stated in the SUNY Rubric accordingly: Critical Thinking Criteria 2 (CT2) “Identify relevant qualifications or objections or alternative points of view and prioritize evidence and/or reasons in support of the conclusion.” All papers were graded holistically on a 4-point scale. Table 3 describes the rubric for assigning points.

**Table 3: SUNY Critical Thinking Rubric - Standards and Assigned Points**

<b>Standard</b>	<b>Points</b>
Exceeds the standard	4
Meets the standard	3
Approaches the standard	2
Does not meet the standard	1

Student learning on both constructs (i.e., sociological and rights) were each assessed two

times for a total of four assessments on critical thinking [2 constructs (*sociological & rights*) X 2 critical thinking criteria (CT1 & CT2) = 4 assessments]. Students’ mean performances on critical thinking assessments (i.e., CT1 Sociological, CT2 Sociological, CT1 Rights, and CT2 Rights) were generally low. It should be noted that although there were 19 instances of students’ demonstrating critical thinking that “exceeded” the standard as represented on the SUNY Critical Thinking rubric, aggregated data on students’ performance for each of the four measures of critical thinking revealed that, on average, students’ failed to reach “*Meets the Standard*” on any of the four measures. To better understand the student performance on the SUNY Critical Thinking Rubric, holistic scores were converted to percentages. Therefore, a score of 1, 2, 3 & 4 were respectively converted to 25%, 50%, 75% and 100%. Viewed this way, a mean holistic score of 2.24 on CT Criteria 1 for the Sociological construct becomes 55.9% when converted to a percentage grade. Table 4 provides students’ performance on critical thinking measures.

**Table 4. Grade Distribution for Student Scores on CT *Sociological* Measure and CT *Rights* Measure**

Critical Thinking Level				Sociological				Rights			
				Criteria 1		Criteria 2		Criteria 1		Criteria 2	
Level I - IV	Points	Score	N	%	N	%	N	%	N	%	
I. Does Not Meet	1	25%	17	33.3	29	56.9	22	43.1	35	68.6	
II. Approaches	2	50%	14	27.5	8	15.7	13	25.5	10	19.6	
III. Meets	3	75%	11	21.6	9	17.6	12	23.5	5	9.8	
IV. Exceeds	4	100%	9	17.6	5	9.8	4	7.8	1	2.0	
Mean Score (Level)			2.24		1.80		1.96		1.45		
Mean Score (Percent)			55.9%		45.1%		49.1%		36.3%		

**Validation**

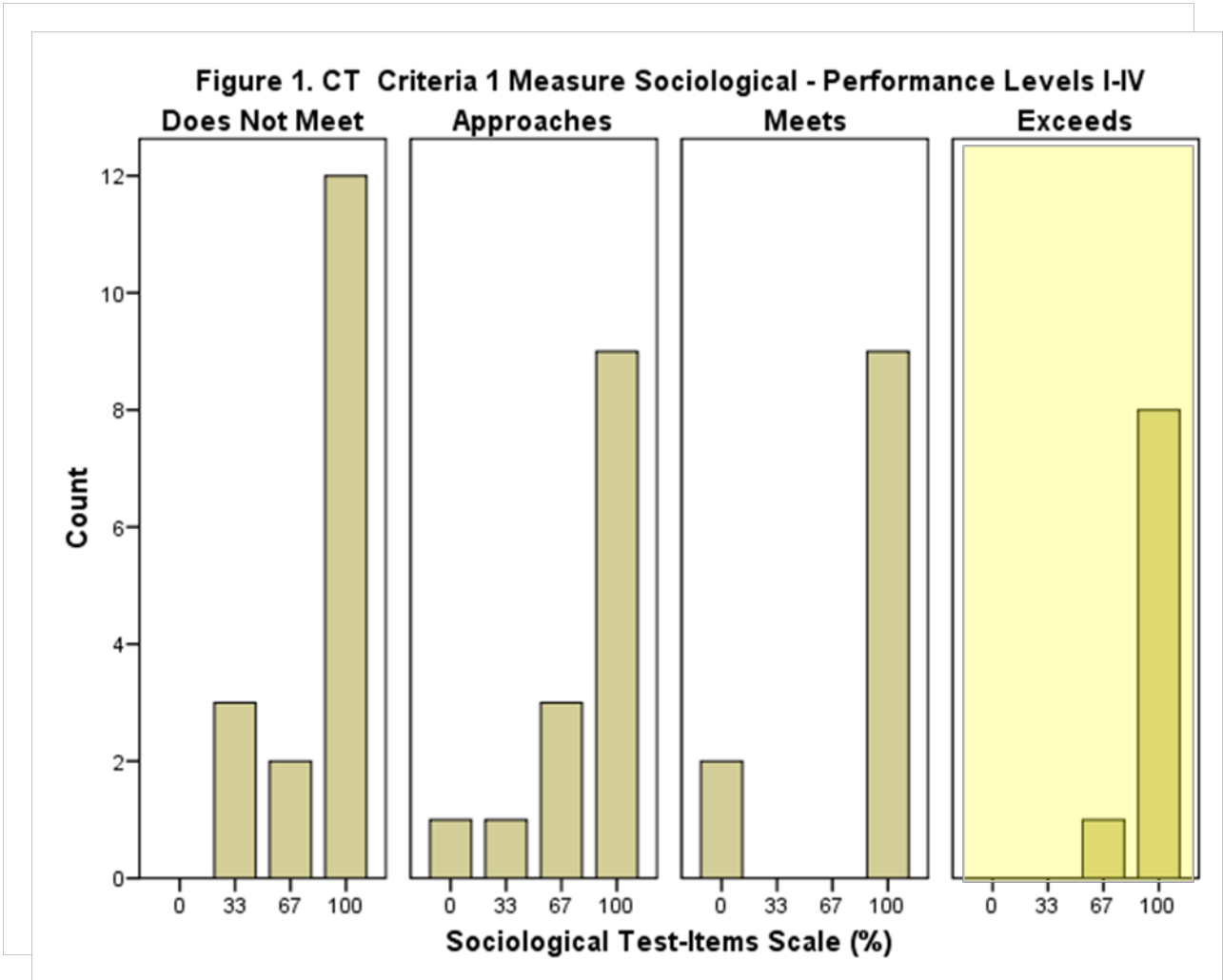
It was reasoned that if the final assignment assessed the *Sociological* and *Rights* constructs, then students’ performance on that portion of the final assignment should correlate

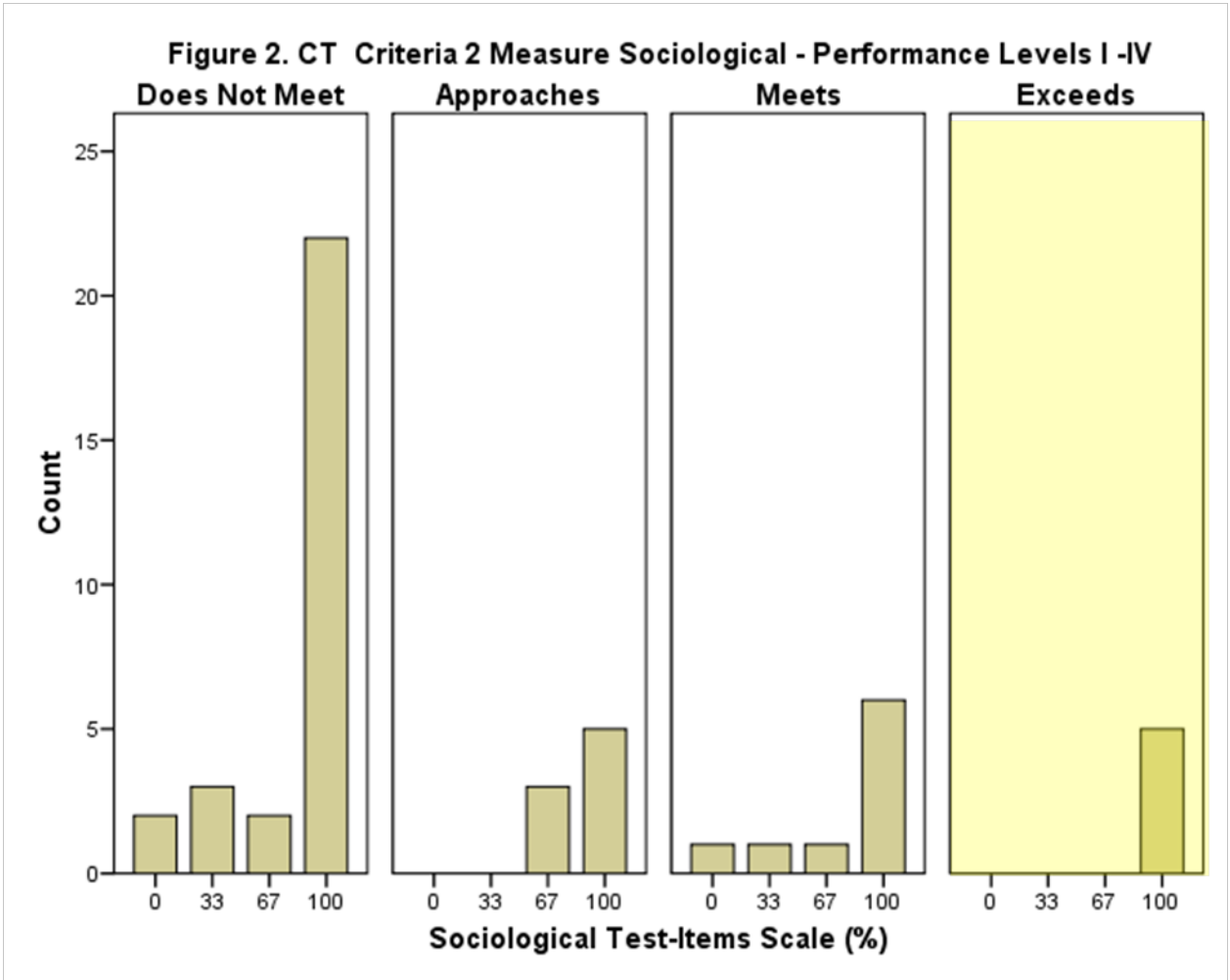
with another known assessment of these two constructs. The scales were derived from the three objective-style tests created from a publisher's valid and reliable test bank.

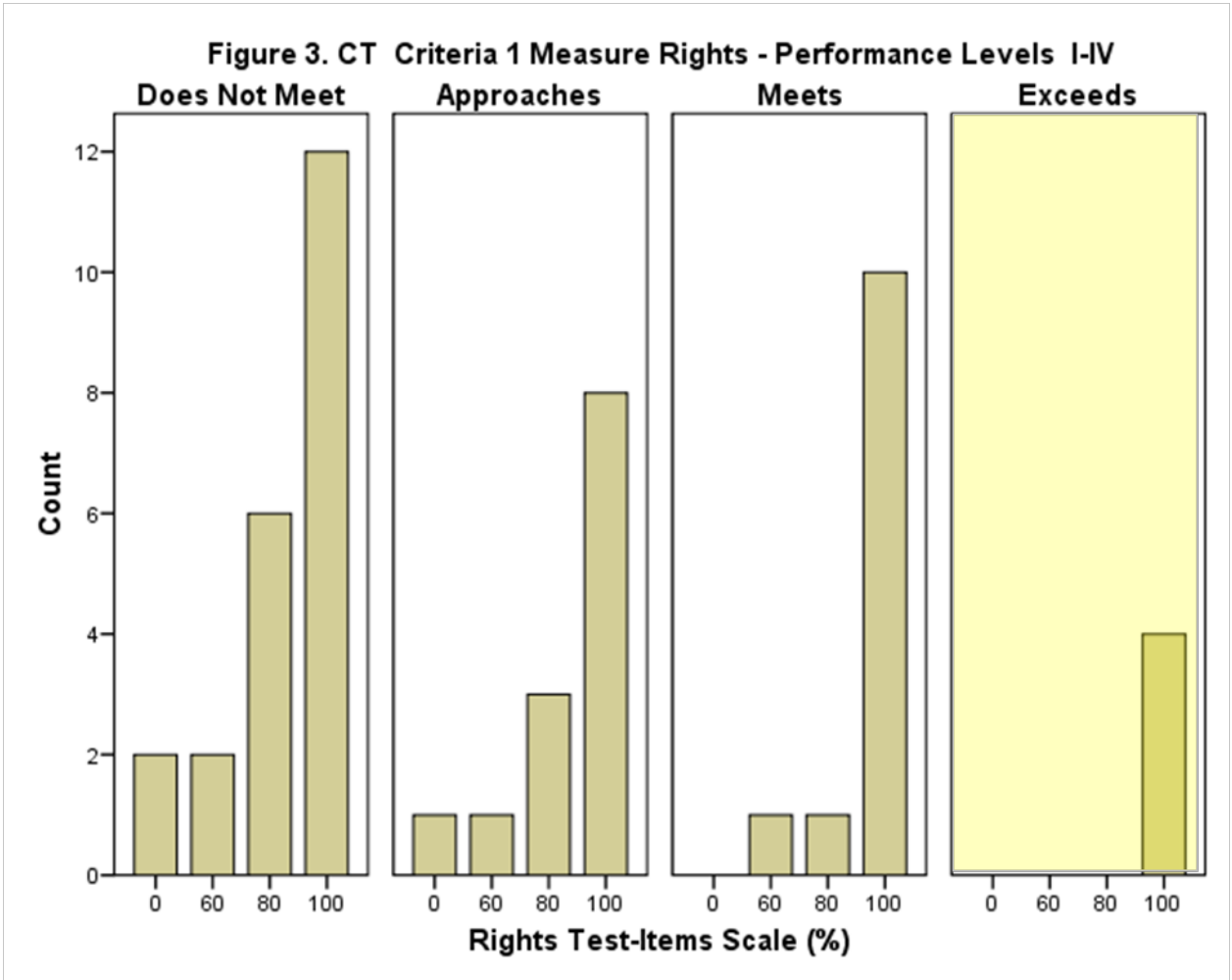
CT performance was considerably better on the embedded *Sociological* and *Rights* scales within the objective exams than the final paper. (Mean scale scores for embedded test questions were Sociological Scale 85% and 87% Rights Scale 87% vs. CT1 Sociological 56%, CT2 Sociological 49%, CT1 Rights 45%, and CT2 Rights 36 %.) With such a disparity in grade outcomes between the scales and the CT final measures, it is no surprise that correlational analyses on student performances across the scales and CT final measures were low and not significant.

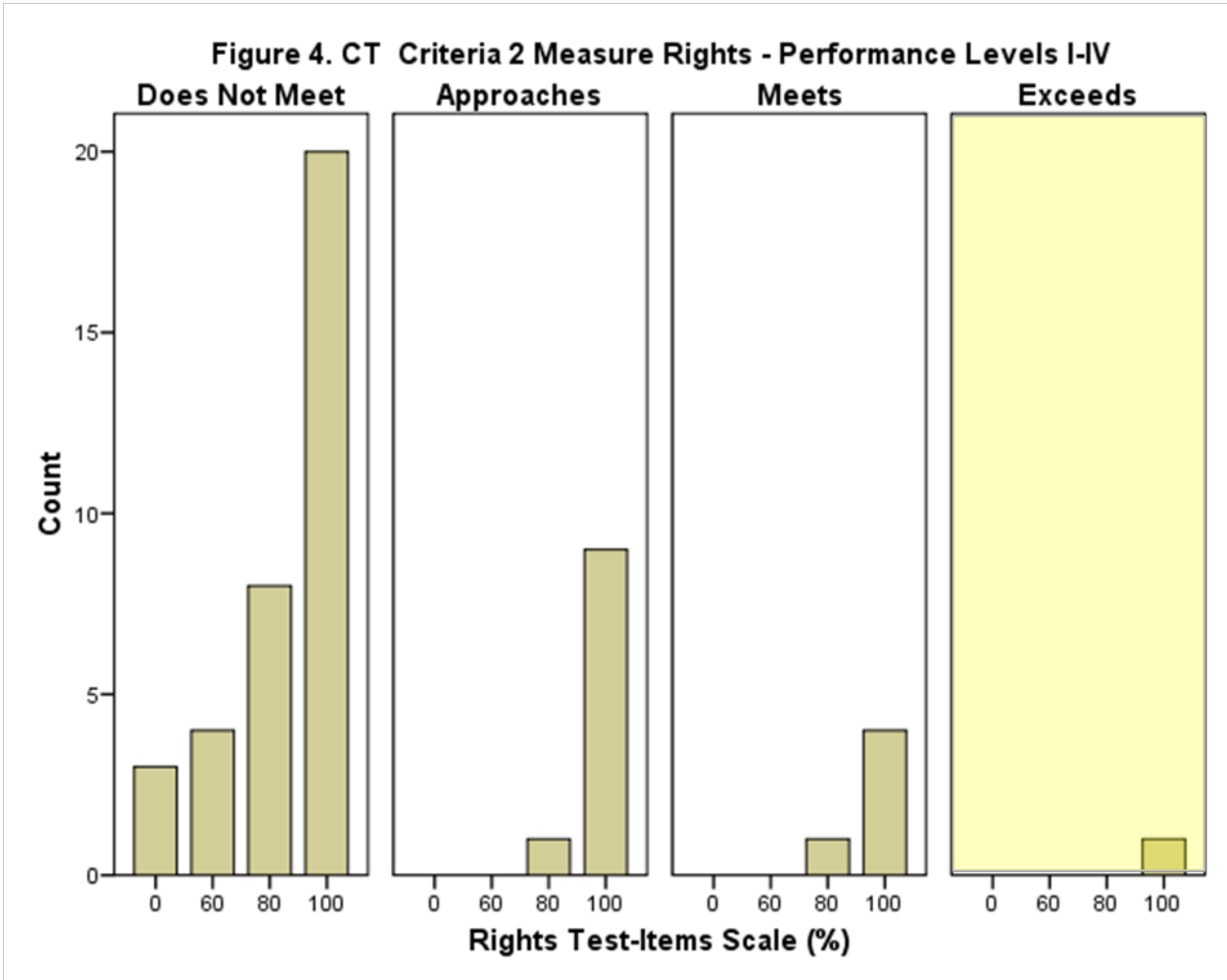
However, further analysis of student performance on the CT final measures in connection with their performance on the respective embedded test-question scales revealed the following information. Among students who had perfect scores on the critical thinking constructs, (i.e., a score of "4" that *Exceeds* the standard) almost the entire cohort had also achieved a score of 100% on the corresponding sociological and rights scales. In this connection, all total, there were 14 perfect scores on the critical thinking constructs. In 13 of these instances, the student scoring a perfect score on the critical thinking construct also scored 100% on the corresponding scale. In one instance, a student scored a perfect score on the CT1 Sociological and scored a grade of 67% (i.e., one item wrong) on the corresponding Sociological Scale.

In other words, as one would expect, students who had mastered the sociological and/or rights' concept within a critical thinking framework, reflected mastery of those concepts through a demonstration of content-level knowledge as found in the corresponding embedded test-question scales as well. The shaded area in Figures 1-4 (below) displays these data.









## Conclusion

This study was designed to assess the level of convergent validity for measures of two constructs—*Sociological & Rights*—embedded in a critical thinking exercise (final paper) and class exams. Results indicated that with the exception of one instance, students who demonstrated mastery of the two identified learning outcomes in the final paper (i.e., score of “exceeds” the standard) also demonstrated mastery through the embedded test questions in the class exams (i.e., grade of 100%) thus, presenting evidence of convergent validity.

It is clear that assessment collaborations can add value to the classroom experience under

the right circumstances. Assessments can be applied to a number of areas from learning objectives to test performance predictors. Both participants in this collaboration found the exercise rewarding and argue that the development of best practices and successful prototypes of assessment collaborations can help pave the way for appropriate and rewarding assessments in the classroom.

### References

Pontus, J. F. & Thornton, S.R. (2008). Is outcomes assessment hurting higher education? *Thought & Action: NEA Higher Education Journal*, 24, 66-72.

Ventello, G. P. (2008). The assessment edict and the love of teaching. *Thought & Action: NEA Higher Education Journal*, 24, 60-65.

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