

Moving Beyond Means: Exploring How One University is Using Writing Data to Improve Performance



Overview of Writing Assessment at SHSU

In the 2012-2013 academic year, SHSU completed a successful writing assessment pilot.

- Approximately 400 student artifacts, gathered using a random stratified sampling scheme, were scored using a locally developed rubric.
- All data presented here comes from that pilot writing assessment

Following the successful pilot, SHSU has embarked upon a three-year rotating writing assessment cycle. Over the course of three years, end-of-experience (i.e., junior- and senior-level) student writing artifacts will be examined from each SHSU's seven academic colleges.

- Each year, approximately 500 student writing artifacts are collected, redacted, coded, and scored using a locally developed writing rubric.
- Each artifact is scored twice, with a third rater introduced when there are cases of extreme disagreement.

Writing Assessment Rubric	
<p>This rubric asks you to identify features of the writing present in the sample. You should apply the numerical score based on degree of presence of the characteristic features. The writing features selected for the rubric are those most likely present in any disciplinary writing sample and represent a writing level expected of a senior-level college student.</p> <p>Legend: N/A = Not Applicable 1 = few features are present 2 = features are not often present 3 = features are often present 4 = features are most always present</p>	
CATEGORY	CHARACTERISTIC FEATURES
Ideas/Critical Thinking/Synthesis The depth of exploration of thoughts and ideas. Features may include research, reasoning, evidence, detail, and development (appropriate to the text and genre).	<ul style="list-style-type: none"> • Central subject or argument of the assignment is easily identified, clearly emphasized, consistent with the evidence, and intriguing. • Reasoning is fully developed throughout the assignment with logical examples, details, and evidence where and as appropriate. • Assignment contains information that addresses counterarguments, biases, or reader's expectations as appropriate.
Style The choices the writer makes for specific audience. Features may include word choice, tone, and sentence length and structure.	<ul style="list-style-type: none"> • Sustained awareness of audience throughout the assignment. • Writing tone suits the audience and enhances the assignment's purpose. • Sentence structure varies according to the context, purpose, and audience. • Sentences are consistently clear and logical. • Word choice is appropriate to the writing task.
Organization The coherence of the writing. Features may include balance and ordering of ideas, flow, transitions, and appropriate format (as defined in assignment).	<ul style="list-style-type: none"> • Text is purposefully organized and substantially developed in a way that clarifies the argument and enhances style. • Arrangement of ideas (overall structure) is clear, logical, and compelling as appropriate to the assignment; the reader moves through the text easily. • Internal structure is cohesive and coherent; text flows and ideas are clearly and logically connected. • Transitions used appropriately.
Conventions Adherence to standard American (and/or) English. Features include grammar, punctuation, capitalization, spelling, and documentation.	<ul style="list-style-type: none"> • Grammar and mechanics support the reader's understanding of the writer's purpose without distracting errors. • Documentation style is consistent, if appropriate to assignment. • Sources, when appropriate, are effectively integrated into the body of the assignment. • Minor errors do not interfere with readability or damage the writer's credibility (as appropriate to the assignment parameters).

So, how do we USUALLY look at these data?

Domain	University Average	College #1	College #2	College #3	College #4	College #5	College #6
Ideas/Critical Thinking/Synthesis	2.68	2.67	2.72	2.53	2.80	2.60	2.71
Style	2.67	2.67	2.65	2.44	2.78	2.65	2.74
Organization	2.63	2.73	2.56	2.40	2.66	2.59	2.69
Conventions	2.57	2.59	2.23	2.23	2.65	2.58	2.65
Overall	2.64	2.67	2.40	2.40	2.72	2.60	2.70

But what do these numbers REALLY tell us?

We need to look deeper at the data to better understand our students.

Sample Overview of Statistical Results

- What was the difference in the student writing ability as a function of student race?
 - The MANOVA procedure did not reveal a statistically significant difference in student writing performance as a function of race:
 - Wilks' $\Lambda = .97, p = .56$
- What was the difference in the student writing ability as a function of student gender?
 - The MANOVA procedure did not reveal a statistically significant difference in student writing performance as a function of gender,
 - Wilks' $\Lambda = .99, p = .65$
- What was the relationship between student grade point averages and student writing ability?
 - Non-parametric Spearman's rho correlations revealed statistically significant relationships between GPA and overall writing scores,
 - $r_s(394) = .18, p = .008$ (Overlap of 3.24%)
- What was the relationship between student performance in introductory English courses and student writing ability?
 - Non-parametric Spearman's rho correlations revealed statistically significant relationships between student performance in introductory English courses and overall writing scores:
 - English 1301 - $r_s(393) = .14, p = .006$ (Overlap of 1.96%)
 - English 1302 - $r_s(388) = .18, p < .001$ (Overlap of 3.24%)
- What was the relationship between the location students took their introductory English courses and student writing ability?
 - Non-parametric independent samples *t*-tests (i.e., Mann-Whitney's *U*) did not reveal any statistically significant relationships between the location at which students took their first introductory English course:
 - Location of English 1301 - $U = 15473.50, p = .796$
 - Location of English 1302 - $U = 16631.00, p = .894$

Descriptive Statistics for Overall Writing Scores

	n	M	SD
Race			
White	259	2.75	0.74
Black	51	2.61	0.81
Hispanic	56	2.57	0.66
Other	28	2.43	0.68
Gender			
Male	143	2.64	0.76
Female	251	2.71	0.72
Institutional GPA / Overall Scores			
Student Institutional GPA	394	3.06	0.54
Student Overall Writing Score	394	2.63	0.63
English Course Performance			
ENGL 1301	393	3.08	0.88
ENGL 1302	388	3.08	0.90
Location of ENGL 1301 Course			
Took Locally	112	2.65	0.63
Transferred	281	2.63	0.63
Location of ENGL 1302 Course			
Took Locally	129	2.64	0.63
Transferred	260	2.63	0.62

Conclusions and Questions for Further Discussion

- Inferential statistics can provide additional, important, information which may be missed by relying exclusively upon general descriptive statistics.
 - They allow you to better understand what differences may exist between your different student groups.
 - They allow you to better understand the **meaning** behind your **means**.
- Inferential statistics takes advantage of existing student data.
 - By combining student performance data with student demographics, we are able to gain a much more robust picture of student ability.
- Inferential statistics push the conversation beyond "How good is the institution?" and can drive meaningful conversations regarding how well students are learning, and how that learning can be improved.
 - For every question they answer, additional questions are raised.
 - Should we expect to see a difference in scores by gender or ethnicity?
 - What sorts of additional factors are influencing student writing scores?

Determining Interrater Reliability

ICCs are used to calculate interrater reliability. According to Cicchetti (1994), ICC agreement values:

- below .40 demonstrate **poor** agreement
- .40 - .59 demonstrate **fair** agreement, from
- .60 - .74 demonstrate **good** agreement
- above .75 demonstrate **excellent** agreement

ICC Values From Initial Writing Assessment Pilot

Rubric Domain Area	Intraclass Correlation for Average Measures
Ideas/Critical Thinking/Synthesis	.69
Style	.65
Organization	.64
Conventions	.58
Overall Artifact Average	.80