



Fall 2015

Assessment of Student Work from
Across the Core:
Scoring & Results

Personal Responsibility, Teamwork, Empirical &
Quantitative Skills

Report prepared by the Office of Student Learning & Institutional Assessment

May 2016

STEPHEN F. AUSTIN STATE UNIVERSITY

In order to assess the core objectives mandated by the Texas Higher Education Coordinating Board, Stephen F. Austin State University began collecting student work samples in core courses using LiveText in Fall 2014. Faculty members were asked to design a common assignment for all sections of courses designated “core” that the students in that course would complete. Students then upload this assignment into the LiveText system online. In the Fall of 2015, student work samples were gathered using LiveText for the core objectives of personal responsibility, teamwork, and empirical & quantitative skills. From those collections, random samples were selected to be reviewed by Core Curriculum Scoring Teams.

Method

Participants

During the Fall of 2015, all students in a course that had been designated as a core course with the objectives of personal responsibility, teamwork, and empirical & quantitative skills were asked to register for a LiveText account provided by the college and upload their core assignment into the LiveText system. Submission rates were determined by objective. The section enrollments for courses designated to assess these core objectives were: personal responsibility (n=7,873), teamwork (n=8,063), and empirical and quantitative skills (n=6,111). Of those section enrollments, pieces of student work were submitted by objective for personal responsibility (n=6,431), teamwork (n=5,558), and empirical and quantitative skills (n=4,284). Submission rates were personal responsibility 82%, teamwork 69%, and empirical and quantitative skills 70%.

A random sample of more than 200 pieces of student work was pulled from the submissions for each of the three objectives. Scoring team members were asked to report any artifacts that did not match the assignment, were plagiarized, or were blank documents; these artifacts were eliminated from the reported sample. In addition, if a student had more than one piece of work in the same sample, one piece of work was randomly chosen to remain in the sample and the others were eliminated. The remaining artifacts for personal responsibility (n=212), teamwork (n=205) and empirical & quantitative skills (n=234) made up the analyzed samples of student work.

Demographics of the sample. Thirty students had a piece of work in two of the samples and one student had a piece of work in all three samples, so for demographic purposes, 619 unique SFA students submitted work for the objectives of personal responsibility, teamwork, and empirical and

quantitative skills. Of those students, the majority were 19-21 years old (70%), freshmen (36%) or sophomores (34%), never transfer students (83%), Caucasian (55%), and female (67%). The average cumulative GPA for those in the samples was 2.76. The specific breakdown of demographic data for all students in the sample (n=619) is shown in Table 1 and Figure 1. Demographic data is also shown for the individual samples of personal responsibility in Table 2 and Figure 2 (n=212), teamwork in Table 3 and Figure 3 (n=205), and empirical and quantitative skills in Table 4 and Figure 4 (n=234). The individual sample data tables include the students with work in more than one sample.

Table 1

Demographics of all students sampled (n = 619)

Demographic	Category	n	Percent
Age			
	18 & Under	99	15.99%
	19-21	433	69.95%
	22-24	63	10.18%
	25-30	17	2.75%
	31 & Older	7	1.13%
Class Level			
	Freshmen	224	36.19%
	Sophomores	211	34.09%
	Juniors	124	20.03%
	Seniors	57	9.21%
	Other	3	0.48%
Class Load			
	Full time	592	95.64%
	Part time	27	4.36%
Gender			
	Male	207	33.44%
	Female	412	66.56%
College			
	Business	90	14.54%
	Education	158	25.53%
	Fine Arts	33	5.33%
	Forestry	37	5.98%
	Liberal & Applied Arts	139	22.46%
	Science & Mathematics	162	26.17%
Race			
	White	343	55.41%
	Black or African American	120	19.39%
	Hispanic	114	18.42%
	Asian	4	0.65%
	American Indian/Alaskan Native	3	0.48%
	2 or more	27	4.36%
	International	5	0.81%
	Unknown/Unreported	3	0.48%
Transfer			
	Never a Transfer	510	82.39%
	Transferred Hours to SFA	109	17.61%

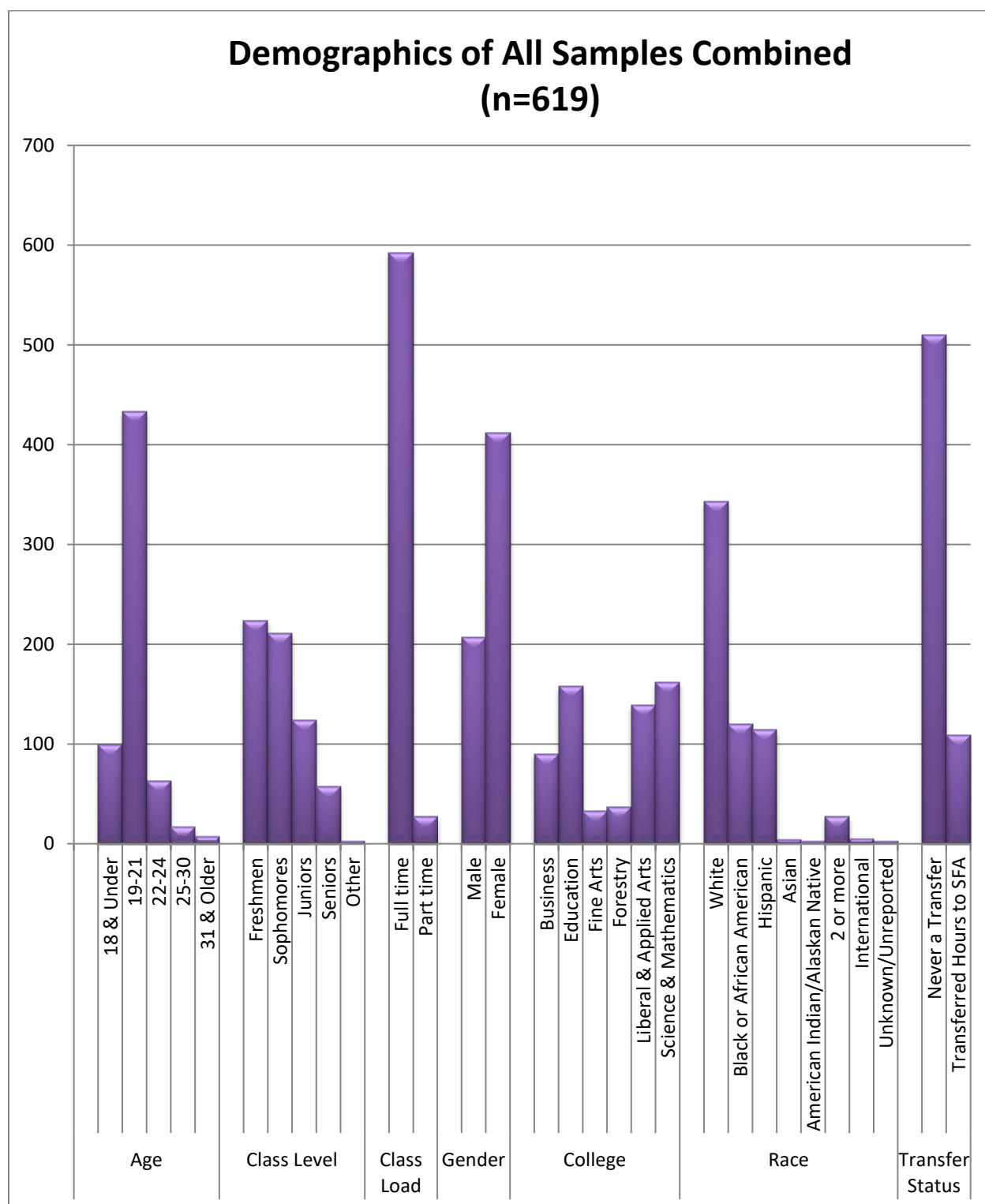


Figure 1. *Demographics of all students sampled.*

Table 2

Demographics of Students in Personal Responsibility (n = 212)

Demographic	Category	n	Percent
Age			
	18 & Under	31	14.62%
	19-21	148	69.81%
	22-24	27	12.74%
	25-30	4	1.89%
	31 & Older	2	0.94%
Class Level			
	Freshmen	79	37.26%
	Sophomores	67	31.60%
	Juniors	46	21.70%
	Seniors	18	8.49%
	Others (PD: seeking 2 nd bachelor's degree)	2	0.94%
Class Load			
	Full time	200	94.34%
	Part time	12	5.66%
Gender			
	Male	78	36.79%
	Female	134	63.21%
College			
	Business	27	12.74%
	Education	57	26.89%
	Fine Arts	14	6.60%
	Forestry	9	4.25%
	Liberal & Applied Arts	58	37.36%
	Science & Mathematics	47	22.17%
Race			
	White	113	53.30%
	Black or African American	43	20.28%
	Hispanic	42	19.81%
	Asian	3	1.42%
	American Indian or Alaskan Native	1	0.47%
	2 or more	8	3.77%
	International	1	0.47%
	Unknown/Unreported	1	0.47%
Transfer			
	Never a Transfer	178	83.96%
	Hours Transferred to SFA	34	16.04%

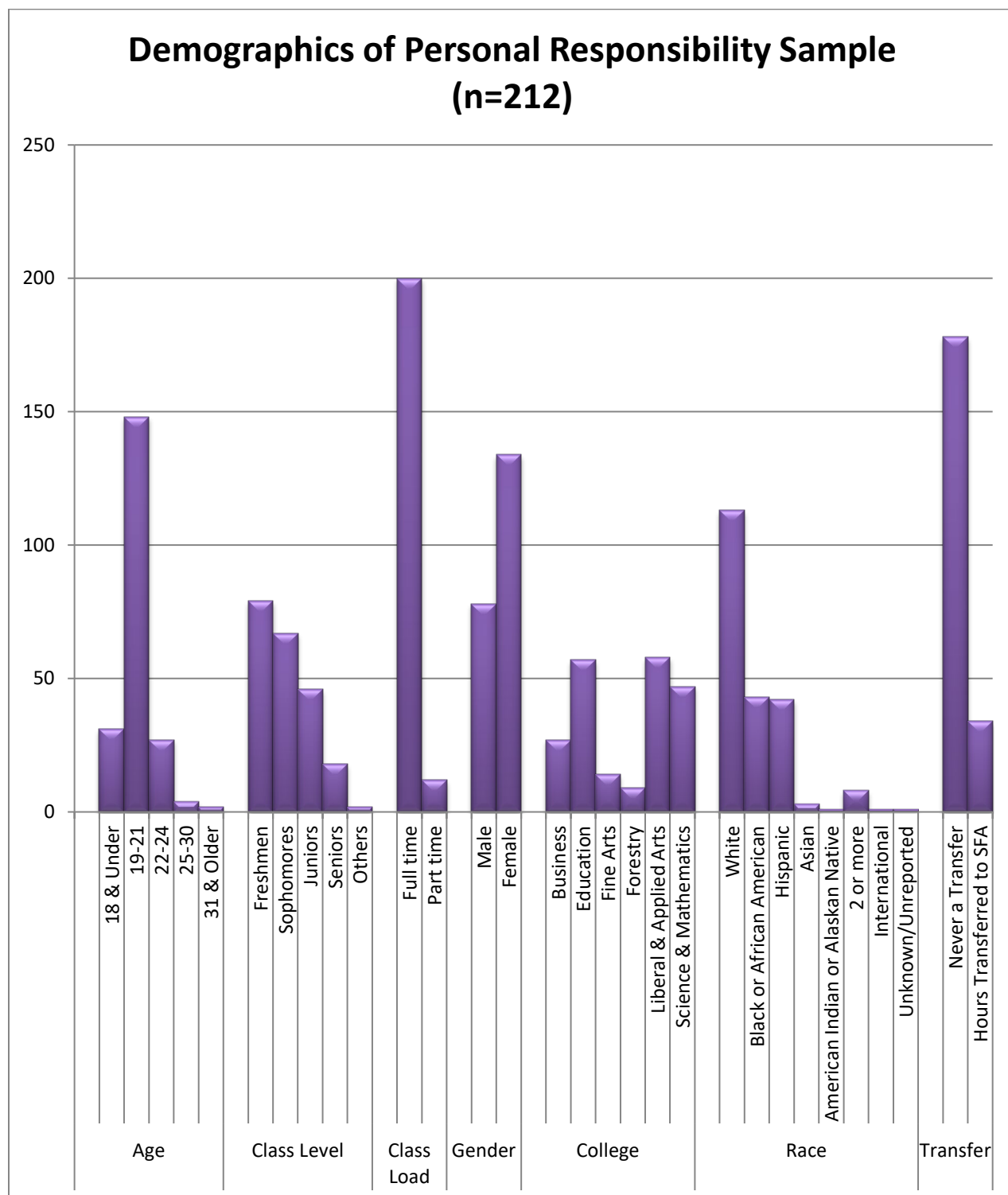


Figure 2. *Demographics of Personal Responsibility Sample.*

Table 3

Demographics of Teamwork Sample (n=205)

Demographic	Category	n	Percent
Age			
	18 & Under	31	15.12%
	19-21	143	69.76%
	22-24	21	10.24%
	25-30	7	3.41%
	31 & Older	3	1.46%
Class Level			
	Freshmen	71	34.63%
	Sophomores	67	32.68%
	Juniors	50	24.39%
	Seniors	16	7.80%
	Other	1	0.49%
Class Load			
	Full time	195	95.12%
	Part time	10	4.88%
Gender			
	Male	63	30.73%
	Female	142	69.27%
College			
	Business	41	20.00%
	Education	56	27.32%
	Fine Arts	9	4.39%
	Forestry	10	4.88%
	Liberal & Applied Arts	34	16.59%
	Math & Science	55	26.83%
Race			
	White	117	57.07%
	Black or African American	44	21.46%
	Hispanic	31	15.12%
	American Indian/Alaskan Native	1	0.49%
	2 or more	9	4.39%
	International	2	0.98%
	Unknown/Unreported	1	0.49%
Transfer			
	Never a Transfer	161	78.54%
	Hours Transferred to SFA	44	21.46%

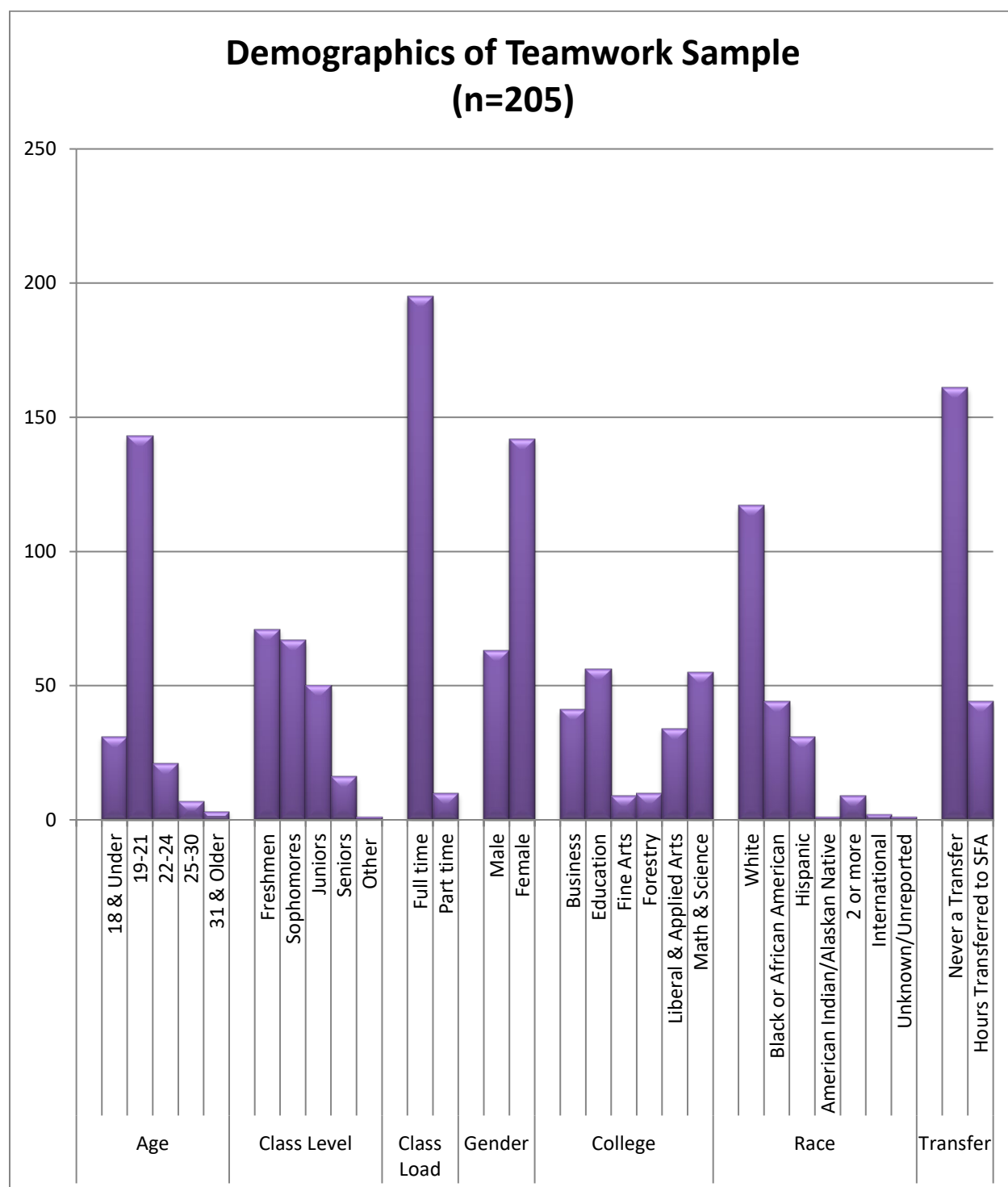


Figure 3. *Demographics of Teamwork Sample.*

Table 4

Demographics of Empirical & Quantitative Skills Sample (n=234)

Demographic	Category	n	Percent
Age			
	18 & Under	40	17.09%
	19-21	167	71.37%
	22-24	18	7.69%
	25-30	7	2.99%
	31 & Older	2	0.85%
Class Level			
	Freshmen	85	36.32%
	Sophomores	87	37.18%
	Juniors	36	15.38%
	Seniors	26	11.11%
Class Load			
	Full time	228	97.44%
	Part time	6	2.26%
Gender			
	Male	76	32.48%
	Female	158	67.52%
College			
	Business	26	11.11%
	Education	53	22.65%
	Fine Arts	10	4.27%
	Forestry	21	8.97%
	Liberal & Applied Arts	52	22.22%
	Math & Science	72	30.77%
Race			
	White	134	57.26%
	Black or African American	35	14.96%
	Hispanic	48	20.51%
	Asian	1	0.43%
	American Indian/Alaskan Native	1	0.43%
	2 or more	12	5.13%
	International	2	0.85%
	Unknown/Unreported	1	0.43%
Transfer			
	Never a Transfer	196	83.76%
	Hours Transferred to SFA	38	16.24%

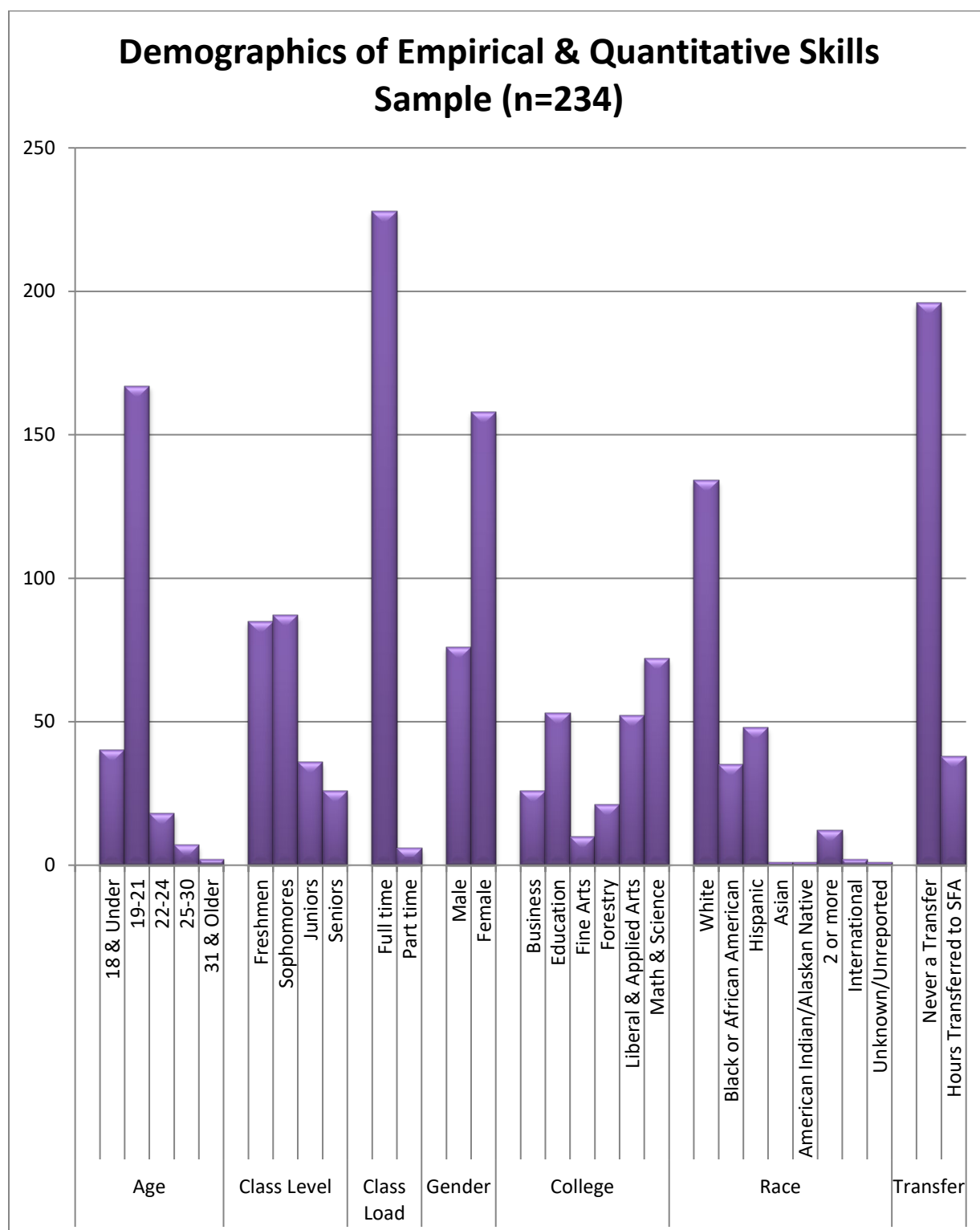


Figure 4. *Demographics of Empirical & Quantitative Skills Sample.*

Scorers

Student work was scored by teams of faculty who were nominated by their departments and then selected by the Core Curriculum Assessment Committee (CCAC). One member of the CCAC served as a chair of each team. Each team consisted of ten members, including the chair, with members of the scoring teams being drawn from departments teaching core courses in which the objectives were being assessed. In Spring 2016, three teams were created to score student work in core courses; one for each objective assessed in Fall 2015: personal responsibility, teamwork, and empirical and quantitative skills.

Rubric

The rubrics to assess each component of the core were developed by faculty teams who modified the Association of American Colleges and Universities (AAC&U) VALUES Rubrics. Teams of SFASU faculty members modified the AAC&U rubrics to adapt them to the objectives of the SFA core. Each rubric measures specific criteria using a 5-point Likert scale. The rubrics for personal responsibility, teamwork, and empirical and quantitative skills can be found in appendix A.

Rubric Norming. In Spring 2016, each scoring team met for at least two rubric norming sessions facilitated by the Office of Student Learning and Institutional Assessment. During these sessions, the team discussed the rubric extensively and developed rules that would be followed for scoring student work. The norming sessions were used to familiarize the faculty with the rubric that they would be using for scoring, allowing them to develop shared understanding of the language used on the rubric, and to become familiar with the process of scoring using LiveText. During the norming session, practice student artifacts were scored and discussed by the team. Further scoring rules were developed if needed following the scoring of each artifact. These scoring rules were put into a document that was sent to all members of both teams to be a reference when scoring the papers.

Scoring. The LiveText sampling tool was used to draw a random sample of student work from each objective. Each sample was drawn to have a minimum of 200 pieces of student work. Each artifact of student work in the sample was sent to two raters. Raters evaluated the paper in LiveText using an online copy of the rubric and following the rules developed in the norming sessions. If the two raters had disagreement on a criterion, the artifact was then sent to a third rater to score only the criteria for which there was disagreement. A complete list of the rules for agreement/disagreement can be found in

Appendix B. Faculty on the scoring teams were given two weeks to complete their first scoring round and then an additional week to finish their second round of scoring.

Results

In order to test the reliability of the scores after the norming sessions, intra-class correlation coefficients were used to determine the amount of non-chance agreement the raters had when scoring the artifacts. Results are given in detail below for each sample.

Inter-rater agreement.

In order to validate the results of the scoring, inter-rater reliability (IRR) analysis was conducted. According to Kevin Hallgren (2012), “The assessment of IRR provides a way of quantifying the degree of agreement between two or more coders who make independent ratings about the features of a set of subjects” (p. 23). In other words, we wanted to know how likely the two raters were to give the artifact the same score without chance agreement. In order to do this, intra-class correlation coefficient (ICC) analysis was conducted on the data.

According to Cicchetti (1994) guidelines for ICC scores are as follows: scores below .40 are considered “poor”, scores between .40 and .59 are considered “fair”, scores between .60 and .74 are considered “good”, and scores between .75 and 1.00 are considered “excellent” (p. 286). ICC scores were calculated for each of the criteria from the rubric along with an overall ICC score for the rubric consisting of the scores for all the criteria (see Table 5).

Personal Responsibility. The overall ICC score for the personal responsibility objective was .77. According to the guidelines outlined by Cicchetti (1994) this indicates an excellent level of overall agreement between raters. The ratings for each criterion were between .75 and .78, again indicating that the raters had an excellent level of agreement when scoring the rubric components.

Teamwork. The overall ICC score for the teamwork objective was .80 indicating there was excellent agreement between the raters. ICC scores for the individual criteria were between .69 to .89, indicating that the raters had a good to excellent level of agreement when scoring the rubric components.

Empirical and Quantitative Skills. The overall ICC score for the empirical and quantitative skills objective was .80 indicating there was excellent agreement between the raters. ICC scores for the individual criteria were between .74 to .83, indicating that the raters had a good to excellent level of agreement when scoring the rubric components.

Table 5

ICC scores for samples overall and by element

Personal Responsibility (n=212)	Teamwork (n=205)	Empirical & Quantitative Skills (n=234)
Overall ICC: All Elements .77	Overall ICC: All Elements .80	Overall ICC: All Elements .80
Ethical Self Awareness .77	Contributes to Team Meetings .69	Define Problem/Topic .80
Ethical Issue Recognition .77	Facilitates the Contributions of Team Members .68	Devise/Formulate a Plan .83
Ethics in Different Contexts/Settings .75	Individual Contributions Outside of Team Meetings .70	Data/Information Collection and/or Selection .74
Application of Ethical Perspectives .78	Fosters Constructive Team Climate .74	Analysis .79
Evaluation of Different Ethical Perspectives .75	Response to Conflict .89	Conclusion .80

Assessment Results

Scores by element. Mean and mode are reported for each rubric criteria as well as the overall composite rubric scores. These scores were then charted to show the ratings by both element and score for all student work in the sample. Charts are shown for the samples in Appendix C. Mean scores and mode from the rubrics are shown in Table 6.

Table 6

Mean and Mode rubrics and criteria

Personal Responsibility (n=212)			Teamwork (n=205)			Empirical & Quantitative Skills (n=234)		
	Mean	Mode		Mean	Mode		Mean	Mode
All Elements	1.42	1	All Elements	1.41	1	All Elements	2.06	2
Ethical Self Awareness	1.43	1	Contributes to Team Meetings	1.65	2	Define Problem/Topic	2.06	2
Ethical Issue Recognition	1.56	1	Facilitates the Contributions of Team Members	1.43	1	Devise or Formulate a Plan	2.09	2
Ethics in Different Contexts/Settings	1.50	1	Individual Contributions Outside of Team Meetings	1.56	1	Data/Information Collection and/or Selection	2.22	2
Application of Ethical Perspectives	1.30	1	Fosters Constructive Team Climate	1.50	1	Analysis	2.02	2
Evaluation of Different Ethical Perspectives	1.32	1	Response to Conflict	1	0	Conclusion	1.93	2

Average score by classification. Results were also tabulated by classification in order to get an overall score of each element for students classified by their year in school: freshmen, sophomores, juniors, and seniors. Results are shown for the personal responsibility sample (Table 7 & Figure 5), the teamwork sample (Table 8 & Figure 6), and the empirical & quantitative sample (Table 9 & Figure 7). ANOVA analysis revealed there were no statistically significant mean differences between classifications for any of the samples.

Table 7

Mean scores for Personal Responsibility sample by student classification

	n	Ethical Self-Awareness	Ethical Issue Recognition	Ethics in Different Contexts/Settings	Application of Ethical Perspectives	Evaluation of Different Ethical Perspectives	Overall Rubric Score
Freshmen	79	1.37	1.46	1.39	1.23	1.30	1.35
Sophomores	67	1.47	1.72	1.62	1.36	1.39	1.51
Juniors	46	1.46	1.51	1.49	1.27	1.28	1.41
Seniors	18	1.50	1.50	1.44	1.25	1.22	1.38
Other	2	1.00	2.00	2.00	1.50	1.50	1.60

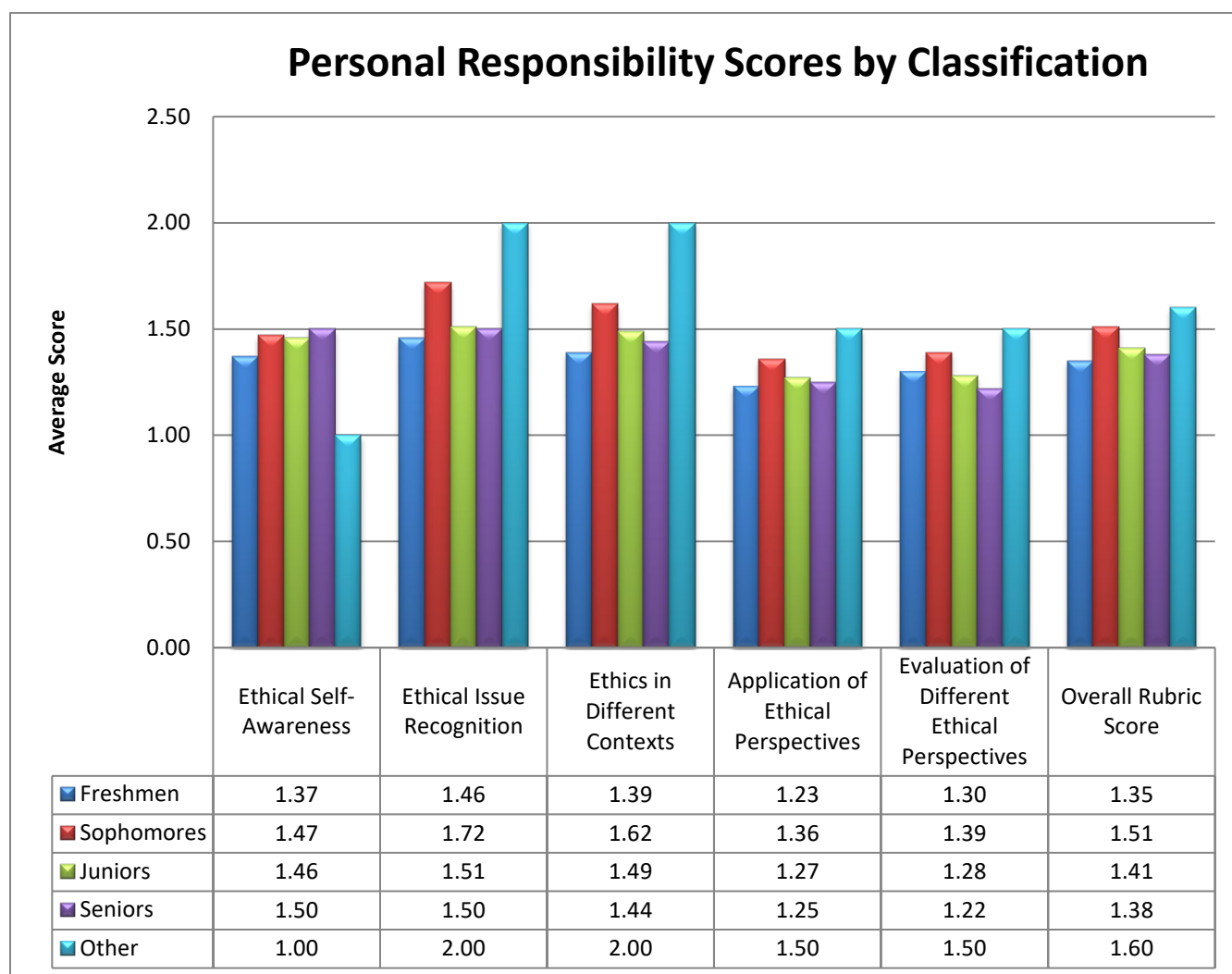
Figure 5. *Mean scores for Personal Responsibility sample by student classification.*

Table 8

Mean scores for Teamwork sample by student classification

	n	Contribute to Team Meetings	Facilitates the Contributions of Team Members	Individual Contribution Outside of Team Meetings	Fosters Constructive Team Climate	Response to Conflict	Overall Rubric Score
Freshmen	71	1.62	1.36	1.46	1.36	0.75	1.31
Sophomores	67	1.75	1.55	1.67	1.62	0.99	1.52
Juniors	50	1.53	1.35	1.53	1.50	1.14	1.41
Seniors	16	1.66	1.34	1.53	1.53	0.84	1.38
Other	1	2.5	3.00	2.00	2.00	1.00	2.10

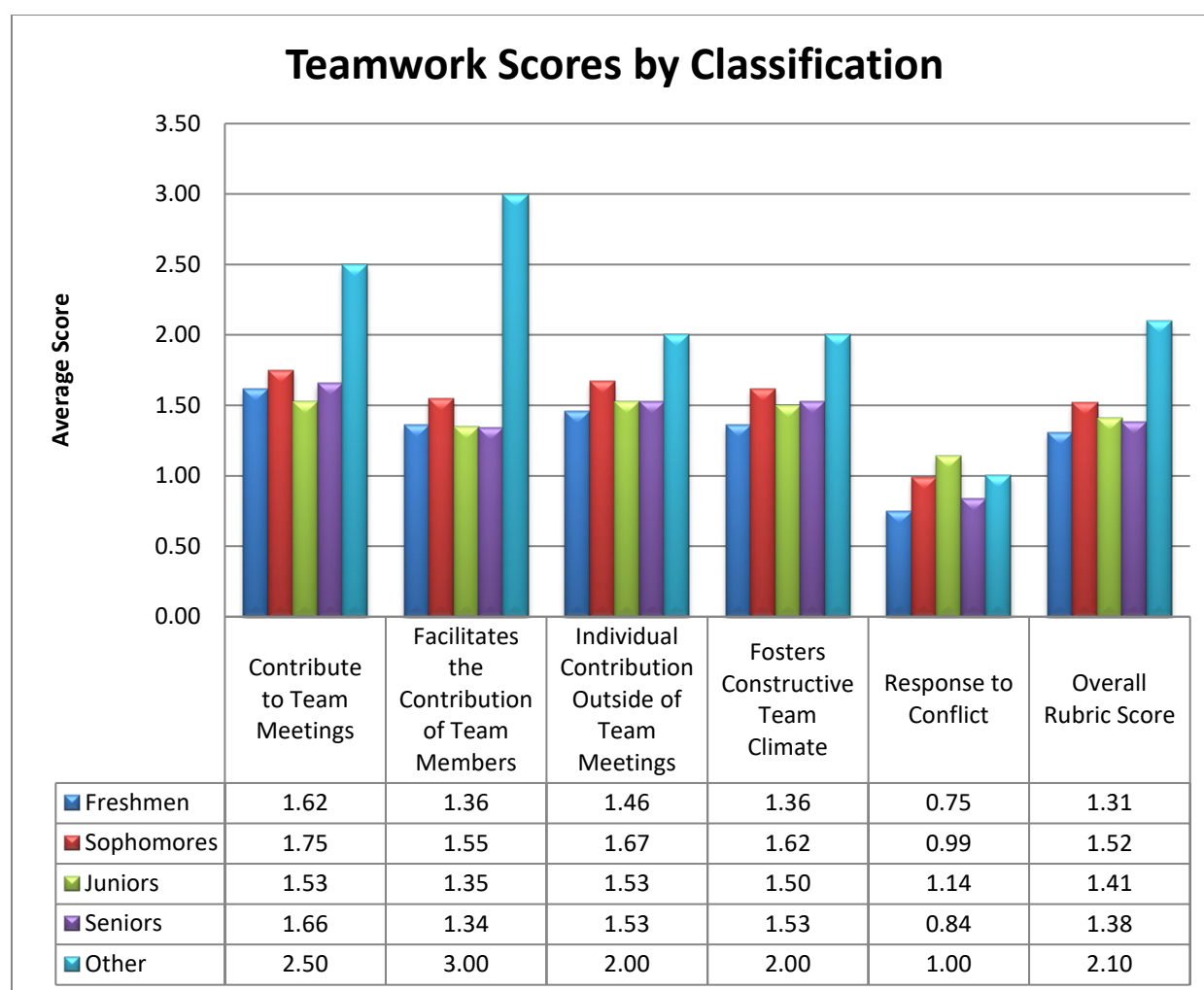
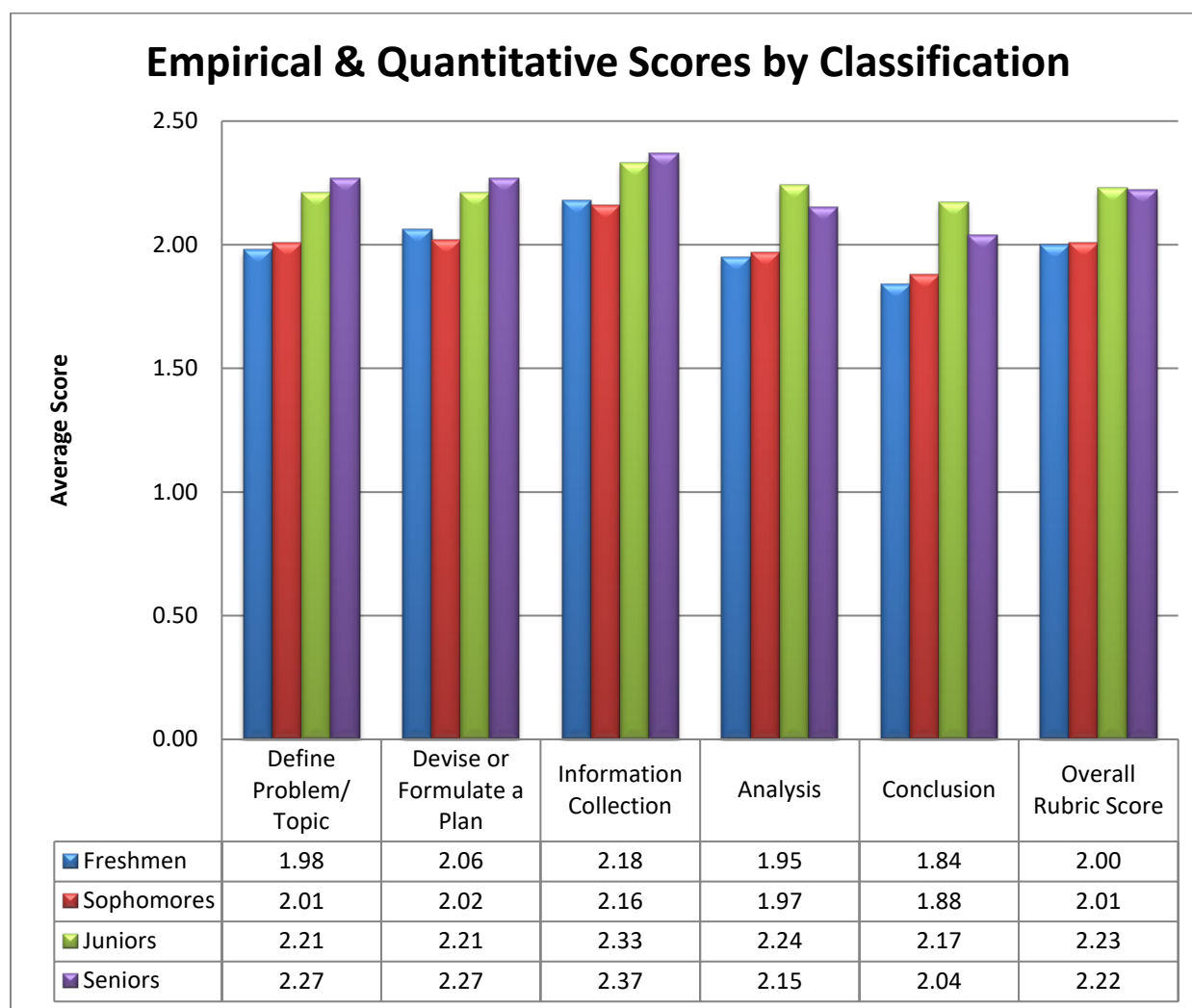
Figure 6. *Mean scores for Teamwork sample by student classification.*

Table 9

Mean scores for Empirical and Quantitative sample by student classification

	n	Define Problem/ Topic	Devise or Formulate a Plan	Information Collection	Analysis	Conclusion	Overall Rubric Score
Freshmen	85	1.98	2.06	2.18	1.95	1.84	2.00
Sophomores	87	2.01	2.02	2.16	1.97	1.88	2.01
Juniors	36	2.21	2.21	2.33	2.24	2.17	2.23
Seniors	26	2.27	2.27	2.37	2.15	2.04	2.22

Figure 7. *Mean scores for Empirical and Quantitative sample by student classification.*

Average score by transfer status. Results were also tabulated by transfer status in order to get an overall score of each element for students classified by their transfer status. Students who had any transfer hours to SFA were grouped into the “Transfer Hours” group. Results are shown for the Personal Responsibility Sample (Table 10 & Figure 8), the Teamwork sample (Table 11 & Figure 9), and the Empirical and Quantitative Sample (Table 12 & Figure 10). T-test analysis revealed there were no statistically significant mean differences between transfer and non-transfer students for any of the samples.

Table 10. *Mean scores for Personal Responsibility rubric elements by student transfer status.*

	n	Ethical Self-Awareness	Ethical Issue Recognition	Ethics in Different Contexts/Settings	Application of Ethical Perspectives	Evaluation of Different Ethical Perspectives	Overall Rubric Score
No Transfer Hours	178	1.44	1.55	1.49	1.30	1.31	1.42
Transfer Hours	34	1.40	1.59	1.53	1.21	1.37	1.42

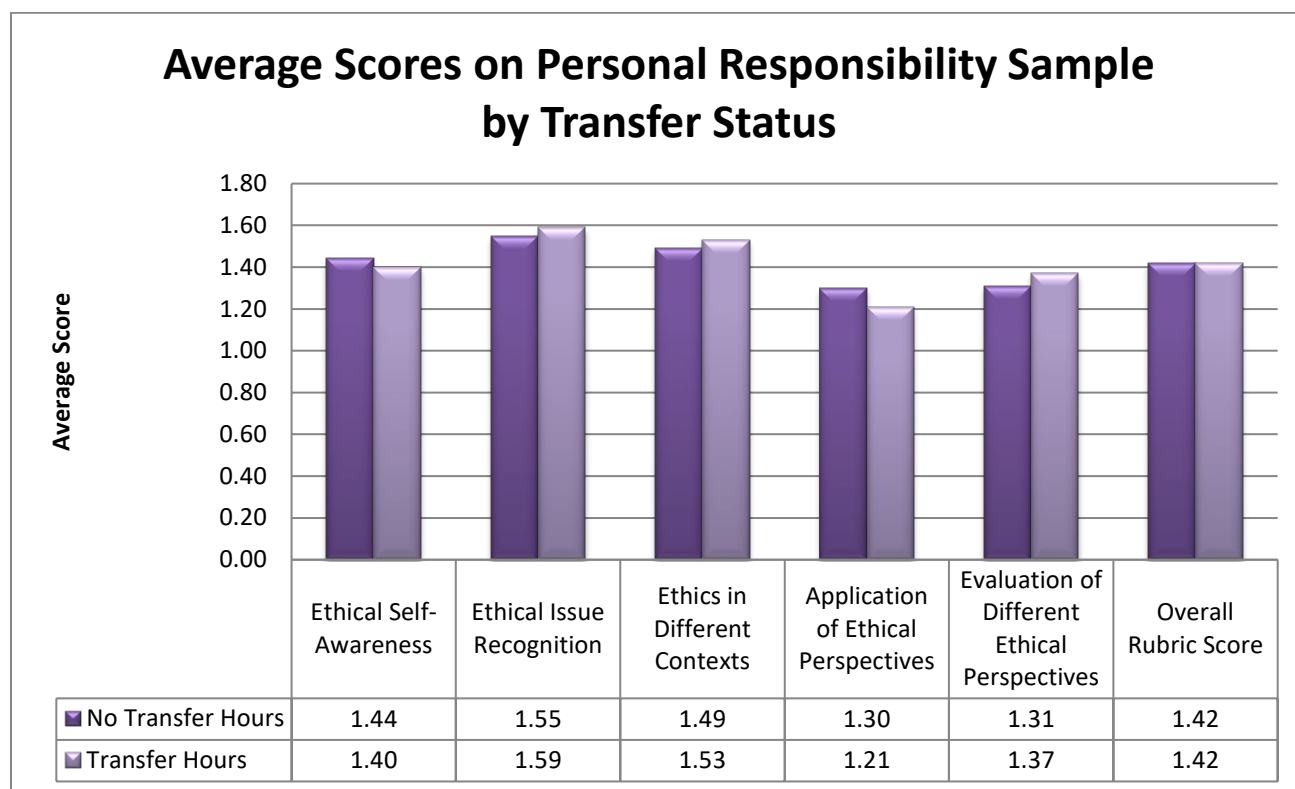


Figure 8. *Mean scores for Personal Responsibility sample by transfer status.*

Table 11. Mean scores for Teamwork rubric elements by student transfer status.

	n	Contribute to Team Meetings	Facilitates the Contribution of Team Members	Individual Contribution Outside of Team Meetings	Fosters Constructive Team Climate	Response to Conflict	Overall Rubric Score
No Transfer Hours	161	1.67	1.44	1.56	1.47	0.91	1.41
Transfer Hours	44	1.58	1.38	1.53	1.58	1.02	1.42

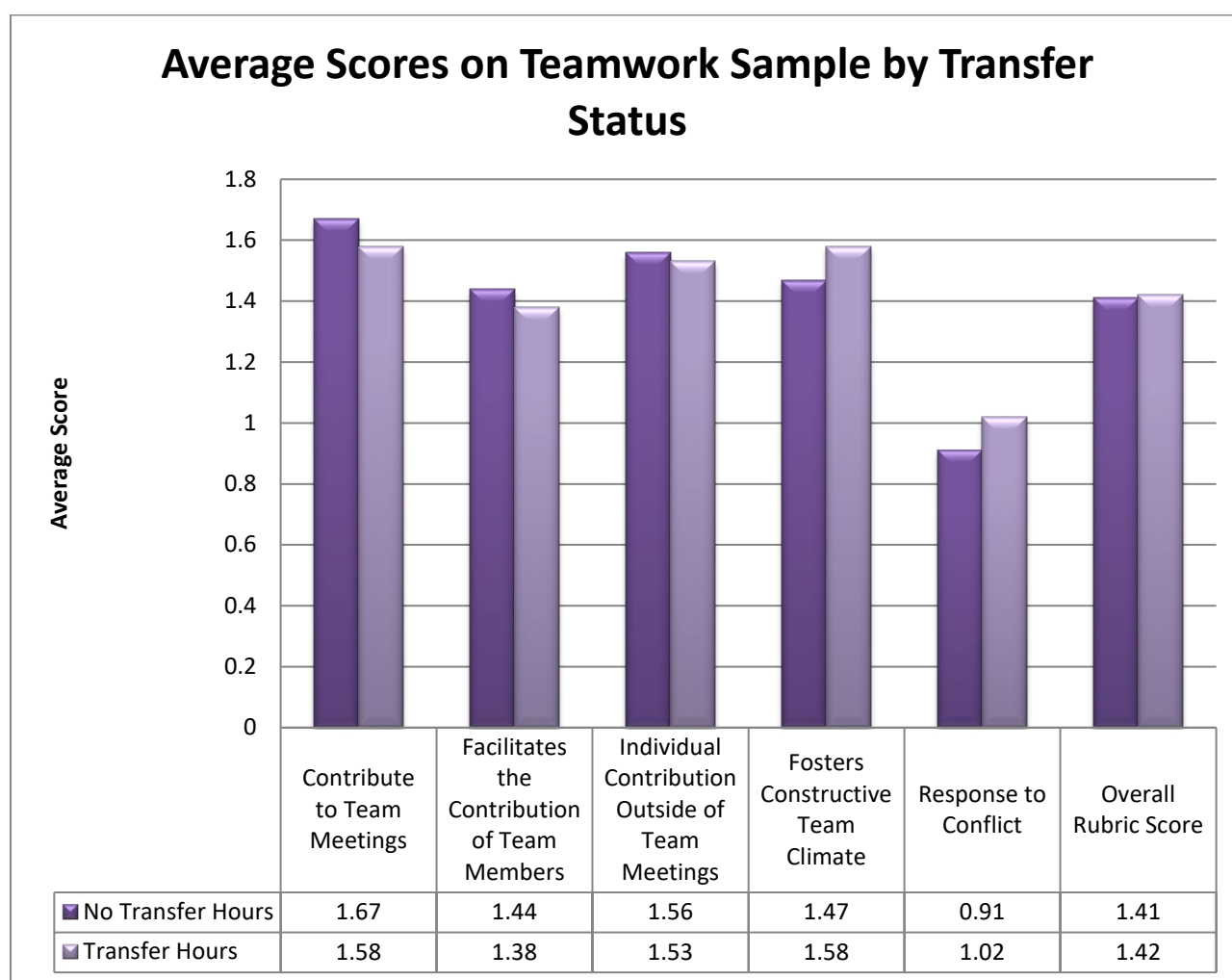


Figure 9. Mean scores for Teamwork sample by transfer status.

Table 12

Mean scores for Empirical and Quantitative sample by transfer status.

	n	Define Problem/ Topic	Devise or Formulate a Plan	Information Collection	Analysis	Conclusion	Overall Rubric Score
No Transfer Hours	196	2.04	2.06	2.20	1.98	1.91	2.04
Transfer Hours	38	2.14	2.28	2.32	2.24	2.00	2.19

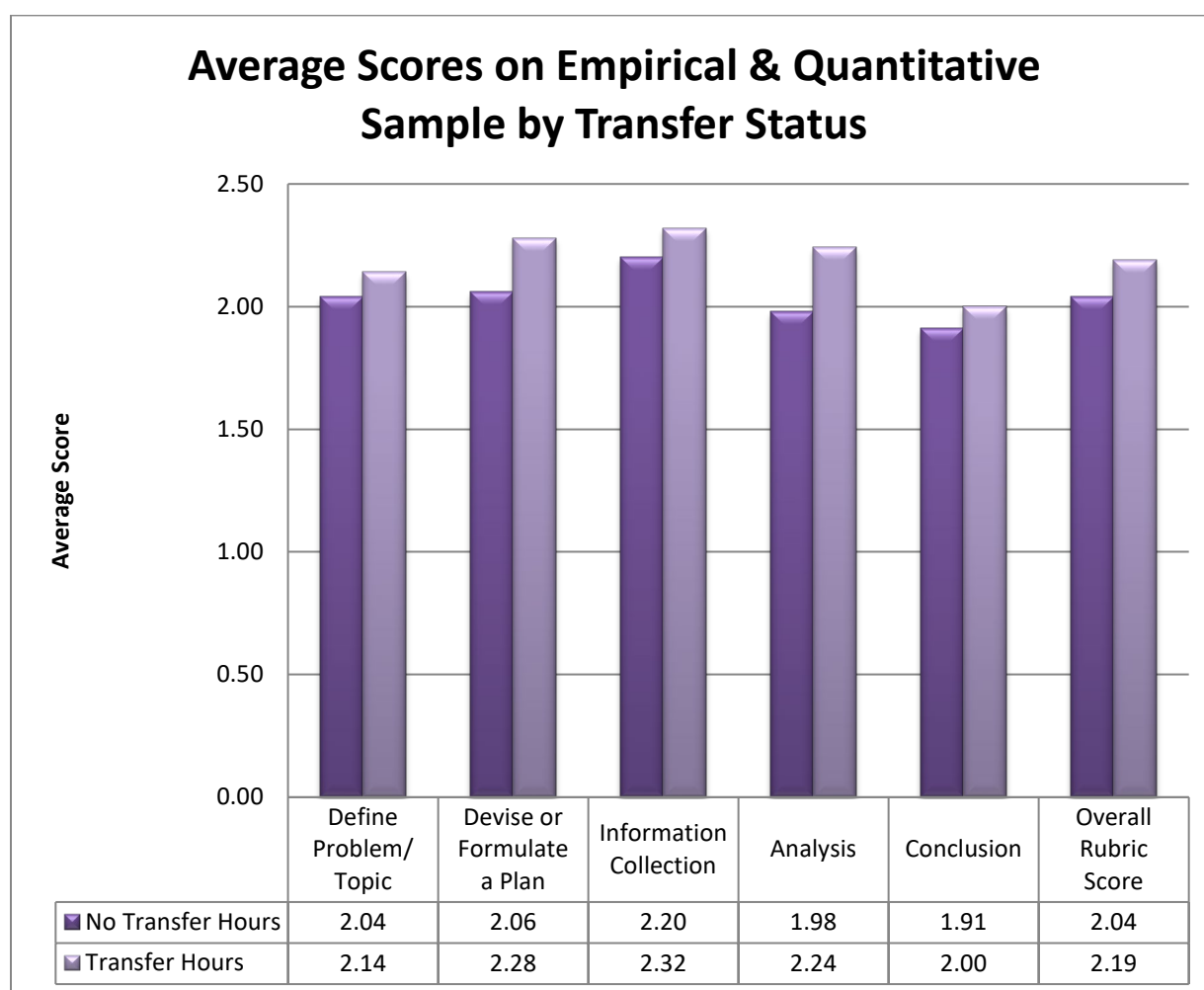


Figure 10. *Mean scores for Empirical & Quantitative sample by transfer status.*

References

- Cicchetti, D.V. (1994). Guidelines, Criteria, and Rules of Thumb for Evaluating Normed and Standardized Assessment Instruments in Psychology. *Psychological Assessment*, 6(4): 284-290.
- Hallgren, K.A. (2012). Computing Inter-Rater Reliability for Observational Data: An Overview and Tutorial. *The Quantitative Methods for Psychology*, 8(1): 23-34.

Appendix A

Rubrics for Personal Responsibility, Teamwork, and Empirical & Quantitative Skills

Personal Responsibility Rubric



This rubric was developed by an interdisciplinary committee of faculty representing different colleges at Stephen F. Austin State University. The committee's point of departure was the Ethical Reasoning Value Rubric developed by the American Association of Colleges and Universities. The committee found that the AACU's rubric was best suited to evaluate student work in the context of a course in ethical philosophy. Consequently the committee modified the document considerably to evaluate ethical reasoning across a variety of disciplines. The rubric is intended for institutional use, not for grading of assignments by instructors.

Definition

Personal responsibility is the ability to reason about and evaluate ethical human conduct.

Framing Language

Personal responsibility has many components, from good hygiene and punctuality to assuming responsibility for the well-being of others. This rubric is designed to assess work that requires students to reflect on the beliefs that inform their own ethical views and to consider alternative perspectives. Students who benefit from a university education should be able to reexamine, articulate, and defend their ethical beliefs and apply them to a variety of issues arising in different personal, professional, and social contexts.

This rubric is designed to assess a variety of types of assignments across disciplines. Possible assignments could include a written assignment based on readings or other sources that require students to reflect on different ethical perspectives, an oral presentation that requires students to outline different facets of an ethical issue, or an on-line or in-class group discussion of an ethical issue. However, the assignment must produce work samples that can be preserved and evaluated at the institutional level.

Glossary

Core belief. A core belief is a principle or fundamental belief which guides a person's actions or decisions. A core belief can change over time.

Ethical issue. An ethical issue is a problem or situation that requires a person to choose between alternatives based on standards of moral conduct.

Context. Context is the historical, cultural, professional, or political situation, background, or environment that applies to a given ethical issue.

Perspective. A perspective is a world view that informs core beliefs and ethical opinions. It is how one sees oneself, other people, and the world. Perspectives are not limited to theories and concepts in ethical philosophy. They may also include political and religious convictions, cultural assumptions, and attitudes shaped by one's family, background, and experiences.

Personal Responsibility Rubric



Definition: Personal responsibility is the ability to reason about and evaluate ethical human conduct.

	Capstone 4	Accomplished 3	Developing 2	Beginning 1	Unacceptable 0
Ethical Self-Awareness	Student assesses in detail core beliefs and analyzes the origins of the core beliefs with greater depth and clarity.	Student assesses in detail core beliefs and analyzes the origins of the core beliefs.	Student states both core beliefs and the origins of the core beliefs.	Student demonstrates an emerging awareness of their core beliefs.	Student demonstrates little to no understanding of ethical self-awareness.
Ethical Issue Recognition	Student can recognize ethical issues and explain cross-relationships among ethical issues in greater detail.	Student can recognize ethical issues and cross-relationships among the issues.	Student can recognize ethical issues and grasp incompletely the complexity or interrelationships among the issues.	Student can recognize basic ethical issues but fails to grasp complexity or interrelationships.	Student fails to recognize basic ethical issues.
Ethics in Different Contexts/ Settings	Student fully considers the implications of context in relation to ethical issues.	Student recognizes the importance and most of the implications of context in relation to ethical issues.	Student recognizes the importance of context in relation to ethical issues.	Student incompletely recognizes the importance of context in relation to ethical issues.	Student does not recognize the importance of context in relation to ethical issues.
Application of Ethical Perspectives	Ethical perspectives are applied persuasively to an ethical question, and how the ethical perspectives relate to the question is fully considered.	Ethical perspectives are not applied persuasively to an ethical question and most of the implications of this application are considered.	Student applies ethical perspectives satisfactorily to an ethical question.	Student applies ethical perspectives to an ethical question, but the analysis is incomplete and there are inaccuracies in describing either the perspectives or the question.	Ethical perspectives are not applied acceptably to an ethical question. The ethical perspectives and the question are seriously misrepresented or misunderstood.
Evaluation of Different Ethical Perspectives/ Concepts	The student is able to recognize and evaluate different perspectives with greater depth and clarity.	The student is able to recognize and evaluate different perspectives acceptably.	The student recognizes a greater diversity of different perspectives.	The student recognizes a limited range of different perspectives.	Student does not recognize different perspectives.

Reprinted [or Excerpted] with permission from Assessing Outcomes and Improving Achievement: Tips and tools for Using Rubrics, edited by Terrell L. Rhodes. Copyright 2010 by the Association of American Colleges and Universities.

TEAMWORK RUBRIC



This rubric was developed by an interdisciplinary team of faculty representing colleges at Stephen F. Austin State University (SFA) through a process that examined and modified the AACU Teamwork Value Rubric to meet the needs of SFA's core curriculum assessment. The rubrics articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for institutional-level use in evaluating and discussing student learning, not for grading.

Definition

Teamwork is behaviors under the control of individual team members (effort they put into team tasks, their manner of interacting with others on team, and the quantity and quality of contributions they make to team discussions.)

Framing Language

Students participate on many different teams, in many different settings. For example, a given student may work on separate teams to complete a lab assignment, give an oral presentation, or complete a community service project. Furthermore, the people the student works with are likely to be different in each of these different teams. As a result, it is assumed that a work sample or collection of work that demonstrates a student's teamwork skills could include a diverse range of inputs. This rubric is designed to function across all of these different settings.

Two characteristics define the ways in which this rubric is to be used. First, the rubric is meant to assess the teamwork of an individual student, not the team as a whole. Therefore, it is possible for a student to receive high ratings, even if the team as a whole is rather flawed. Similarly, a student could receive low ratings, even if the team as a whole works fairly well. Second, this rubric is designed to measure the quality of a process, rather than the quality of an end product. As a result, work samples or collections of work will need to include evidence of the individual's interactions within the team. The final product of the team's work (e.g., a written lab report or a group presentation) is insufficient, as it does not provide insight into the functioning of the team.

It is recommended that work samples or collections of work for this outcome come from one (or more) of the following three sources: (1) students' own reflections about their contribution to a team's functioning; (2) evaluation or feedback from fellow team members about students' contribution to the team's functioning; or (3) the evaluation of an outside observer regarding students' contributions to a team's functioning.

TEAMWORK RUBRIC



Definition: Teamwork is behaviors under the control of individual team members (effort they put into team tasks, their manner of interacting with others on team, and the quantity and quality of contributions they make to team discussions.)

	Capstone 4	Accomplished 3	Developing 2	Beginning 1	Unacceptable 0
Contributes to Team Meetings	Helps the team move forward by articulating the merits of alternative ideas or proposals.	Offers alternative solutions or courses of action that build on the ideas of others.	Offers new suggestions to advance the work of the group.	Shares ideas but does not advance the work of the group.	Does not share ideas and does not advance the work of the group."
Facilitates the Contributions of Team Members	Engages team members, facilitating their contributions by building upon or synthesizing their contributions and offering original ideas. (Should also notice and encourage non-participating members to engage with the group.)	Engages team members in ways that facilitate their contributions by synthesizing all contributions.	Engages team members in ways that facilitate their contributions by asking probing/meaningful questions.	Engages team members by commenting on the contributions of others	Not engaged in the teamwork activity.
Individual Contributions Outside of Team Meetings	Completes all assigned tasks by deadline; work accomplished is thorough, comprehensive, and advances the project. Proactively helps other team members complete their assigned tasks to a similar level of excellence.	Completes all assigned tasks by deadline; work accomplished is thorough, comprehensive, and advances the project.	Completes all assigned tasks by deadline; work accomplished advances the project.	Completes all assigned tasks by deadline.	Fails to complete all assigned tasks by deadline

	Capstone 4	Accomplished 3	Developing 2	Beginning 1	Unacceptable 0
Fosters Constructive Team Climate	Supports a constructive team climate by doing all of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members. • Promotes an open group climate where members feel safe to share information and where members listen to each other actively and appreciatively.	Supports a constructive team climate by doing any four of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members. • Promotes an open group climate where members feel safe to share information and where members listen to each other actively and appreciatively.	Supports a constructive team climate by doing any three of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members. □ • Promotes an open group climate where members feel safe to share information and where members listen to each other actively and appreciatively.	Supports a constructive team climate by doing any two of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members. • Promotes an open group climate where members feel safe to share information and where members listen to each other actively and appreciatively.	Fails to support a constructive team climate by doing fewer than two of the following: • Treats team members respectfully by being polite and constructive in communication. • Uses positive vocal or written tone, facial expressions, and/or body language to convey a positive attitude about the team and its work. • Motivates teammates by expressing confidence about the importance of the task and the team's ability to accomplish it. • Provides assistance and/or encouragement to team members. • Promotes an open group climate where members feel safe to share information and where members listen to each other actively and appreciatively.
Response to Conflict	If conflict is present, the student addresses conflict directly and constructively, helping to manage/resolve it in a way that strengthens overall team cohesiveness and future effectiveness.	If conflict is present, the student identifies and acknowledges conflict and stays engaged with it.	If conflict is present, the student redirects focus toward common ground, toward task at hand (away from conflict).	If conflict is present, the student passively accepts alternate viewpoints/ideas/opinions.	If conflict is present, the student refuses to collaborate or consider ideas other than his/her own.

Reprinted [or Excerpted] with permission from Assessing Outcomes and Improving Achievement: Tips and tools for Using Rubrics, edited by Terrell L. Rhodes. Copyright 2010 by the Association of American Colleges and Universities.

Empirical and Quantitative Skills Rubric



This rubric was developed by the empirical and quantitative skills committee at Stephen F. Austin State University in the Fall 2013 semester. The development process examined many existing campus and AAC&U's rubrics. This rubric articulates fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubric is intended for institutional-level use in evaluating and discussing student learning, not for grading. The utility of this rubric is to position learning at all undergraduate levels within a basic framework of expectations such that evidence of learning can be shared through a common dialog and understanding of student success.

Definition

Empirical and Quantitative (EQ) skills are those skills necessary to frame a problem, analyze empirical information, draw conclusions from the analysis, and communicate the results to an audience. Often, EQ skills are synonymous with critical thinking skills, and they closely correspond to the Quantitative Literacy definition developed by AAC&U. Individuals with strong EQ skills possess the ability to reason and solve quantitative problems from a wide array of disciplines and real-life situations, and they can clearly communicate the process and results in a variety of formats (e.g., words, tables, graphs, mathematical equations).

Empirical and Quantitative Skills Across Disciplines

Most academic disciplines seek to foster strong EQ skills in their students. These skills are critically important for success in today's data-driven marketplace. Employers seek applicants with strong EQ skills, and these employees tend to have upward mobility, all else being equal. Since EQ skills are important for students, faculty are encouraged to develop assignments that provide opportunities for students to develop their critical thinking skills including but not limited to analyzing quantitative information, representing quantitative information in appropriate forms, completing necessary calculations to answer meaningful questions, making judgments based on quantitative information, or communicating the results of that work for various purposes and audiences. This rubric can be used as a framework for faculty to design assignments that provide students with the opportunities to enhance their empirical and quantitative reasoning skills.

Framing Language

This rubric has been designed for the evaluation of work that addresses EQ skills. EQ skills go beyond mere calculations or citing data. Students must be able to understand a question, seek the most appropriate information to answer the question, analyze this information, and draw conclusions that have practical significance.

Empirical and Quantitative Skills Rubric



Definition: Empirical and Quantitative (EQ) skills are those skills necessary to frame a problem, analyze empirical information, draw conclusions from the analysis, and communicate the results to an audience. Often, EQ skills are synonymous with critical thinking skills, and they closely correspond to the Quantitative Literacy definition developed by AAC&U. Individuals with strong EQ skills possess the ability to reason and solve quantitative problems from a wide array of disciplines and real-life situations, and they can clearly communicate the process and results in a variety of formats (e.g., words, tables, graphs, mathematical equations).

	Capstone 4	Accomplished 3	Developing 2	Beginning 1	Unacceptable 0
Define Problem/Topic	Demonstrates the ability to construct a clear and insightful problem/topic statement with evidence of <u>all</u> relevant contextual factors.	Demonstrates the ability to construct a problem/topic statement with evidence of most relevant contextual factors, and problem statement is adequately detailed.	Begins to demonstrate the ability to construct a problem/topic statement with evidence of most relevant contextual factors, but problem statement is superficial.	Demonstrates a limited ability in identifying a problem/topic statement or related contextual factors.	Does not define problem/topic.
Devise/Formulate a Plan	Uses information or observation to form a correct plan to achieve a solution. Analyzes each step of the plan for plausibility and correctness.	Uses information or observations to form a correct plan to achieve a solution.	Uses information or observations to form a partially correct plan to achieve a solution.	Uses information or observations to form an incorrect or incomplete plan to achieve a solution.	Does not formulate a plan for solution.
Data/information collection and/or selection	Skillfully gathers or converts relevant information into insightful portrayal that contributes to further or deeper understanding of the problem/topic.	Converts/gathers relevant information into an appropriate portrayal of the problem/topic.	Converts/gathers relevant information into a partially appropriate portrayal of the problem/topic.	Attempts to gather/convert information, but the information is incomplete or irrelevant to the problem/topic.	Does not attempt to gather/convert information.
Analysis	Analyzes and synthesizes evidence to reveal insightful patterns, differences, or similarities related to problem/topic.	Analyzes evidence to reveal relevant patterns, differences, or similarities related to the problem/topic.	Analysis is partially effective in revealing patterns, differences or similarities.	Analysis is not effective in revealing patterns, differences or similarities.	Does not attempt analysis.
Conclusion	Conclusion(s) is/are correct, insightful, and relate to the original problem/topic.	Conclusion(s) is/are correct and relate to the original problem/topic.	Conclusion(s) is/are partially correct and relate to the original problem/topic.	Conclusion(s) is/are incorrect or unrelated to the problem/topic.	Does not form a conclusion.

Reprinted [or Excerpted] with permission from Assessing Outcomes and Improving Achievement: Tips and tools for Using Rubrics, edited by Terrell L. Rhodes. Copyright 2010 by the Association of American Colleges and Universities.

Appendix B

Rules for Scoring Student Work

Procedures for assessment of student work:

1. Each piece of student work will be initially assessed by two raters.
2. If the two raters agree on their rating on any element/criterion of a rubric then there is no need for a third rater on that element/criterion.
3. If the first two raters are no more than one integer apart on their ratings on an element/criterion of a rubric, then the two ratings are averaged together and there is no need for a third rater on that element/criterion.

For example, if Rater A gives a piece of student work a 2 on element/criterion of Audience, Context, and Purpose, and Rater B gives the piece of student work a 3 on Audience, Context, and Purpose, then the two ratings are averaged together to give a 2.5 on the Audience, Context, and Purpose element/criterion.

WRITTEN COMMUNICATION RUBRIC

Definition: Written communication is the development and expression of ideas in writing. Written communication involves learning to work in many genres and styles. It can involve working with many different writing technologies, and mixing texts, data, and images. Written communication abilities develop through iterative experiences across the curriculum.

	Capstone 4	Accomplished 3	Developing 2	Beginning 1	Unacceptable 0
Audience, Context, and Purpose	Demonstrates a thorough understanding of context, audience, and purpose that is wholly responsive to the assigned task(s) and applied consistently through all elements of the work.	Demonstrates adequate consideration of context, audience, and purpose and a clear focus on the assigned task(s).	Demonstrates some attention to context, audience, purpose, and to the assigned task(s).	Demonstrates minimal attention to context, audience, purpose, and to the assigned task(s).	Fails to meet minimum criteria in addressing the audience, context, and purpose for writing.
Content Development	Uses appropriate, relevant, and compelling content and ideas that illustrate the writer's command and deep understanding of the subject, skillfully shaping the whole work.	Uses appropriate, relevant, and compelling content to accurately explore ideas within the subject and shape the whole work.	Uses appropriate and relevant content to develop and accurately explore ideas through most of the work.	Uses appropriate and relevant content to accurately develop simple ideas in some parts of the work.	Fails to meet minimum criteria in addressing content development.
Sources and Evidence	Demonstrates skillful use of high-quality, credible, relevant sources to develop ideas that are appropriate for the assignment.	Demonstrates consistent use of credible, relevant sources to support ideas that are appropriate for the assignment.	Demonstrates an attempt to use credible and relevant sources to support ideas that are appropriate for the assignment.	Demonstrates an attempt to use sources to support ideas in the assignment.	Fails to meet minimum criteria in demonstrating the use of sources to support ideas in the assignment.
Organization And Presentation	Demonstrates consistent, skillful, and thoroughly detailed attention to organization, presentation, and stylistic choices as appropriate to the assignment.	Demonstrates consistent and skillful organization and presentation as appropriate to the assignment.	Follows expectations for a consistent system of basic organization and presentation as appropriate to the assignment.	Attempts to use a consistent system for basic organization and presentation as appropriate to the assignment.	Fails to meet minimum criteria in organization and presentation.
Control of Syntax and Mechanics	Uses graceful language that skillfully communicates meaning to readers with clarity and fluency, and is nearly error-free.	Uses straightforward language that conveys meaning to readers with clarity. The language in the work has few errors.	Uses language that generally conveys meaning to readers, although writing may include some errors.	Uses language that sometimes impedes meaning because of errors in usage.	Fails to use language that demonstrates control of syntax and mechanics.

Reprinted [or Excerpted] with permission from Assessing Outcomes and Improving Achievement: Tips and tools for Using Rubrics, edited by Terrell L. Rhodes. Copyright 2010 by the Association of American Colleges and Universities.

If the two raters are more than one integer apart on their ratings on any element/criterion of a rubric, a third rater is asked to rate only the element(s)/criteria where there was disagreement.

For example, if Rater A gives a piece of student work a 1 on the element/criterion Audience, Context, and Purpose, and Rater B gives the piece of student work a 3 on Audience, Context, and Purpose. Also, rater A also gives the same piece of student work a 4 on Sources and Evidence, and Rater B gives that same piece of student work a 2. Then a third rater (Rater C) is asked to rate the student work only on the elements/criteria of Audience, Context, and Purpose and Sources and Evidence.

WRITTEN COMMUNICATION RUBRIC

Definition: Written communication is the development and expression of ideas in writing. Written communication involves learning to work in many genres and styles. It can involve working with many different writing technologies, and mixing texts, data, and images. Written communication abilities develop through iterative experiences across the curriculum.

	Capstone 4	Accomplished 3	Developing 2	Beginning 1	Unacceptable 0
Audience, Context, and Purpose	Demonstrates a thorough understanding of context, audience, and purpose that is wholly responsive to the assigned task(s) and applied consistently through all elements of the work.	Demonstrates adequate consideration of context, audience, and purpose and a clear focus on the assigned task(s).	Demonstrates some attention to context, audience, purpose, and to the assigned task(s).	Demonstrates minimal attention to context, audience, purpose, and to the assigned task(s).	Fails to meet minimum criteria in addressing the audience, context, and purpose for writing.
Content Development	Uses appropriate, relevant, and compelling content and ideas that illustrate the writer's command and deep understanding of the subject, skillfully shaping the whole work.	Uses appropriate, relevant, and compelling content to accurately explore ideas within the subject and shape the whole work.	Uses appropriate and relevant content to develop and accurately explore ideas through most of the work.	Uses appropriate and relevant content to accurately develop simple ideas in some parts of the work.	Fails to meet minimum criteria in addressing content development.
Sources and Evidence	Demonstrates skillful use of high-quality, credible, relevant sources to develop ideas that are appropriate for the assignment.	Demonstrates consistent use of credible, relevant sources to support ideas that are appropriate for the assignment.	Demonstrates an attempt to use credible and relevant sources to support ideas that are appropriate for the assignment.	Demonstrates an attempt to use sources to support ideas in the assignment.	Fails to meet minimum criteria in demonstrating the use of sources to support ideas in the assignment.
Organization And Presentation	Demonstrates consistent, skillful, and thoroughly detailed attention to organization, presentation, and stylistic choices as appropriate to the assignment.	Demonstrates consistent and skillful organization and presentation as appropriate to the assignment.	Follows expectations for a consistent system of basic organization and presentation as appropriate to the assignment.	Attempts to use a consistent system for basic organization and presentation as appropriate to the assignment.	Fails to meet minimum criteria in organization and presentation.
Control of Syntax and Mechanics	Uses graceful language that skillfully communicates meaning to readers with clarity and fluency, and is nearly error-free.	Uses straightforward language that conveys meaning to readers with clarity. The language in the work has few errors.	Uses language that generally conveys meaning to readers, although writing may include some errors.	Uses language that sometimes impedes meaning because of errors in usage.	Fails to use language that demonstrates control of syntax and mechanics.

Reprinted [or Excerpted] with permission from Assessing Outcomes and Improving Achievement: Tips and tools for Using Rubrics, edited by Terrell L. Rhodes. Copyright 2010 by the Association of American Colleges and Universities.

- If Rater C's rating agrees with one of the other two ratings, then that rating is used and the rating that is not in agreement is discarded.

For example, if Rater C and Rater A each rate a piece of student work a 2 on Content Development, but Rater B rates the work a 4, then Rater B's rating is discarded and the student work received a rating of 2 on Content Development.

5. If Rater C's rating does not agree with one of the other two ratings, and is no more than one integer from only one of the other ratings, then the rating that is more than one integer from the other ratings is discarded, and the two ratings that are no more than one integer apart are averaged.

For example, if Rater C rates a piece of student work 2, Rater A rated the work a 1, and Rater B rated the work 4 on Content Development. Rater B's rating of 4 is discarded and the ratings of Rater C and Rater A are averaged to get a rating of 1.5.

6. If Rater C's rating is no more than one integer from the other two ratings, then all of the ratings are averaged.

For example, if Rater C rates a piece of student work 3, Rater A rated the work a 2, and Rater B rated the work 4 on Content Development. All of the ratings are averaged for a rating of 3.

7. If Rater C's rating does not agree with one of the other two ratings and is more than one integer apart from the other two ratings, then Rater C's rating is discarded, and the other two ratings are averaged.

For example, if Rater C rates a piece of student work 4, Rater A rated the work a 0, and Rater B rated the work a 2 on Content Development. Rater C's rating of 4 is discarded, and the other two ratings are averaged to get a rating of 1.

Appendix C

Charts of Scores

Personal Responsibility:

Below are charts for the personal responsibility sample (n=212). Both charts show the number of student work samples and the score they were assigned (0-4). Figure C1 shows the number of work samples for each element and Figure C2 shows the number of work samples for each score. Figure C3 shows the breakdown of the overall rubric score (composite of all elements) assigned to each piece of student work.



Figure C1

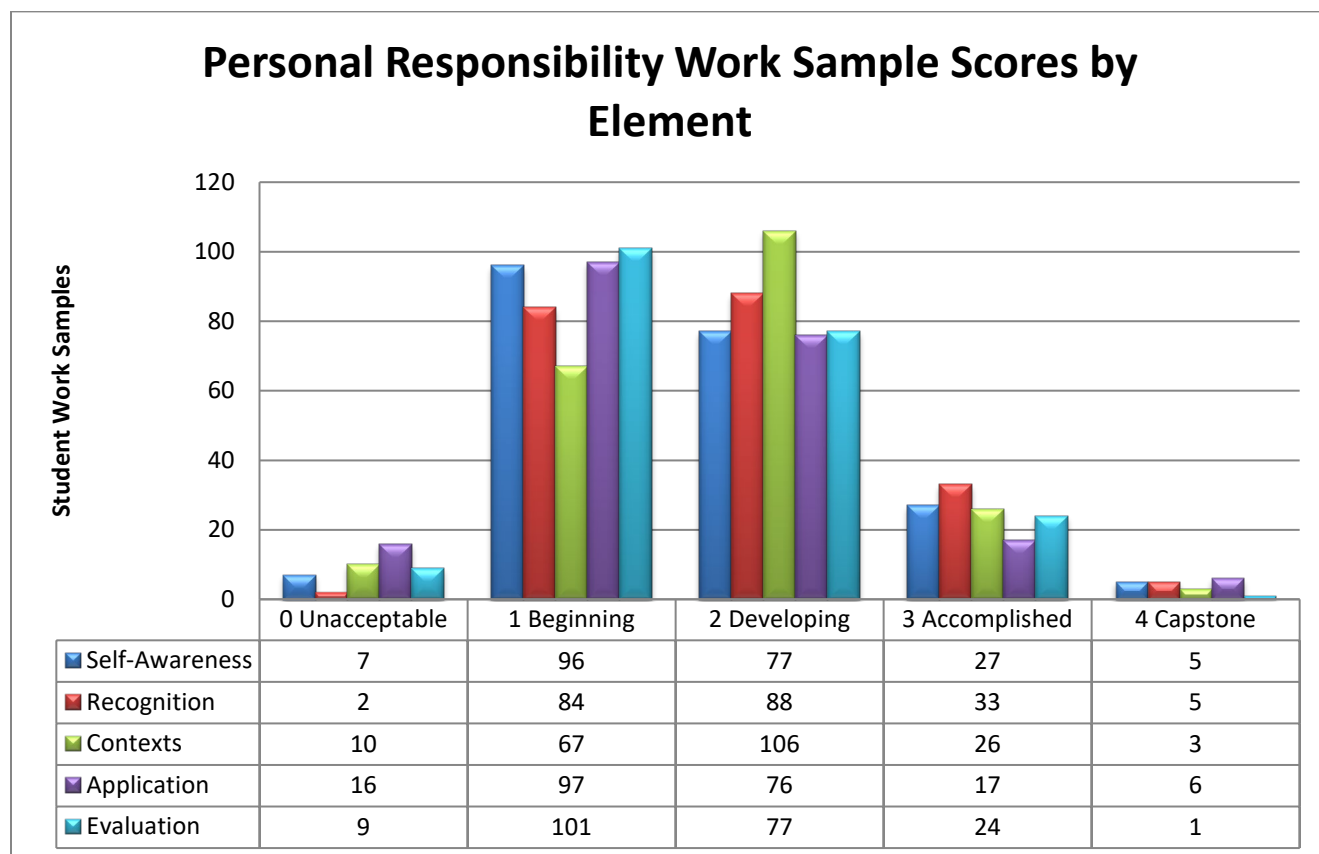


Figure C2

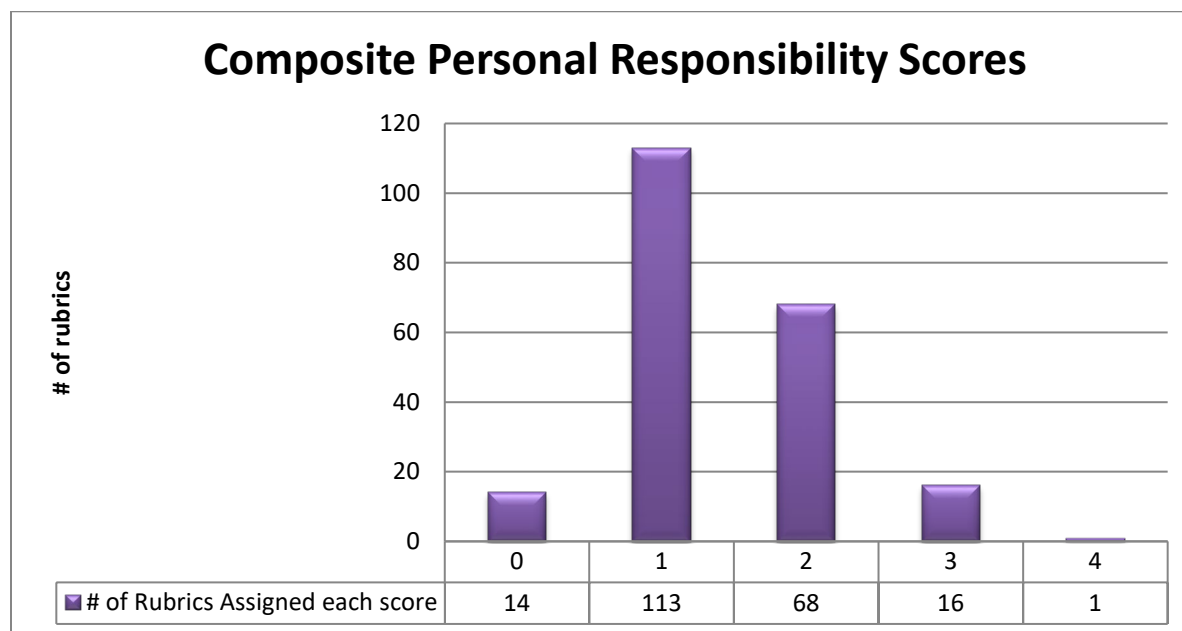


Figure C3

Teamwork:

Below are charts for the teamwork sample (n=205). Both charts show the number of student work samples and the score they were assigned (0-4). Figure C4 shows the number of work samples for each element and Figure C5 shows the number of work samples for each score. Figure C6 shows the breakdown of the overall rubric score (composite of all elements) assigned to each piece of student work.

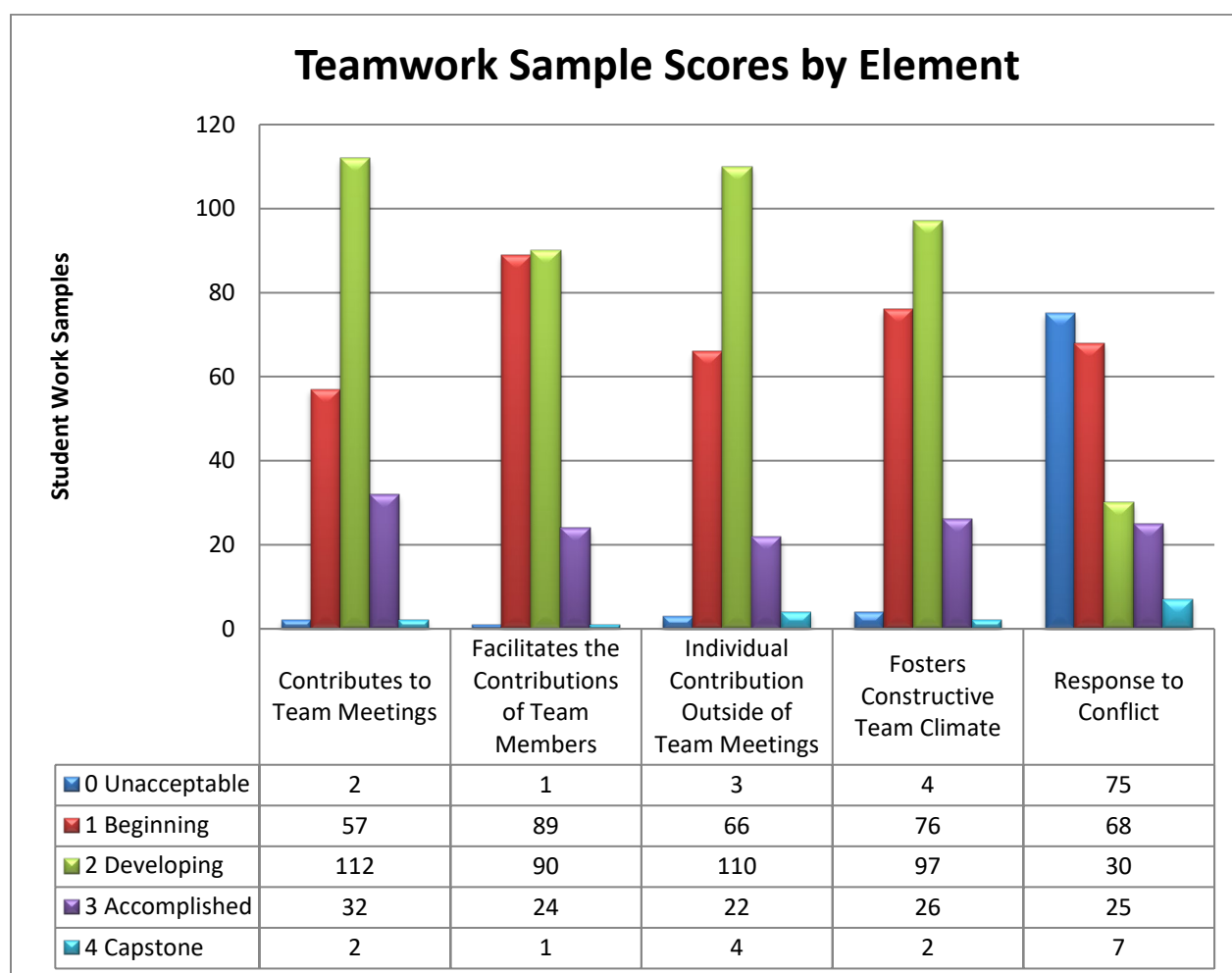


Figure C4

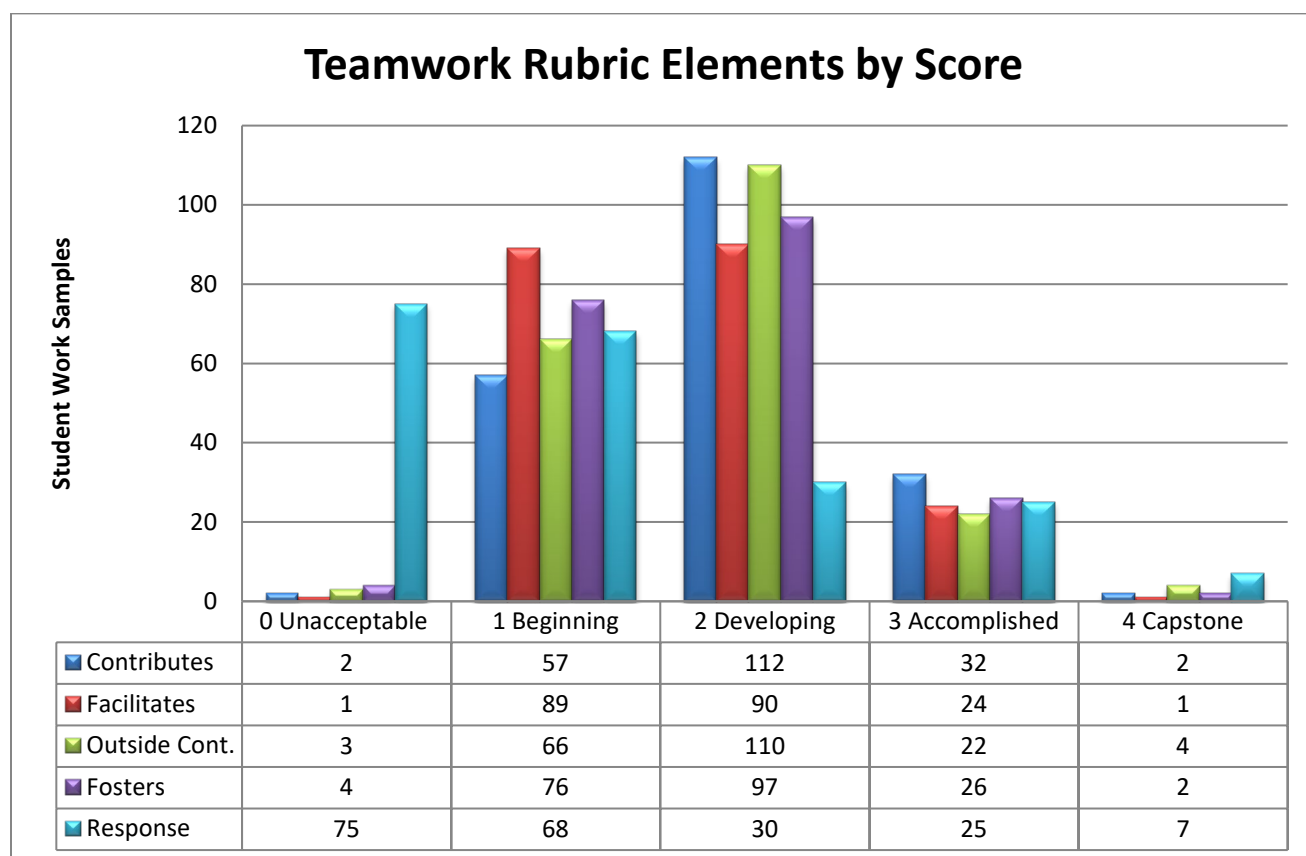


Figure C5

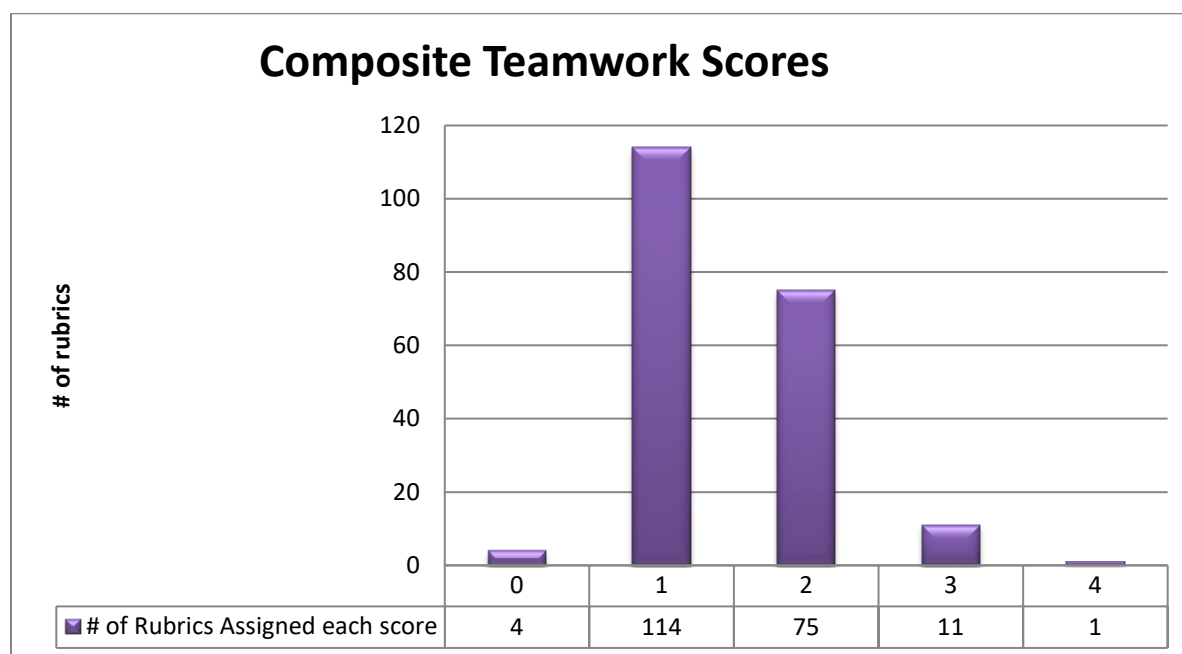


Figure C6

Empirical & Quantitative:

Below are charts for the Empirical & Quantitative sample (n=234). Both charts show the number of student work samples and the score they were assigned (0-4). Figure C7 shows the number of work samples for each element and Figure C8 shows the number of work samples for each score. Figure C9 shows the breakdown of the overall rubric score (composite of all elements) assigned to each piece of student work.

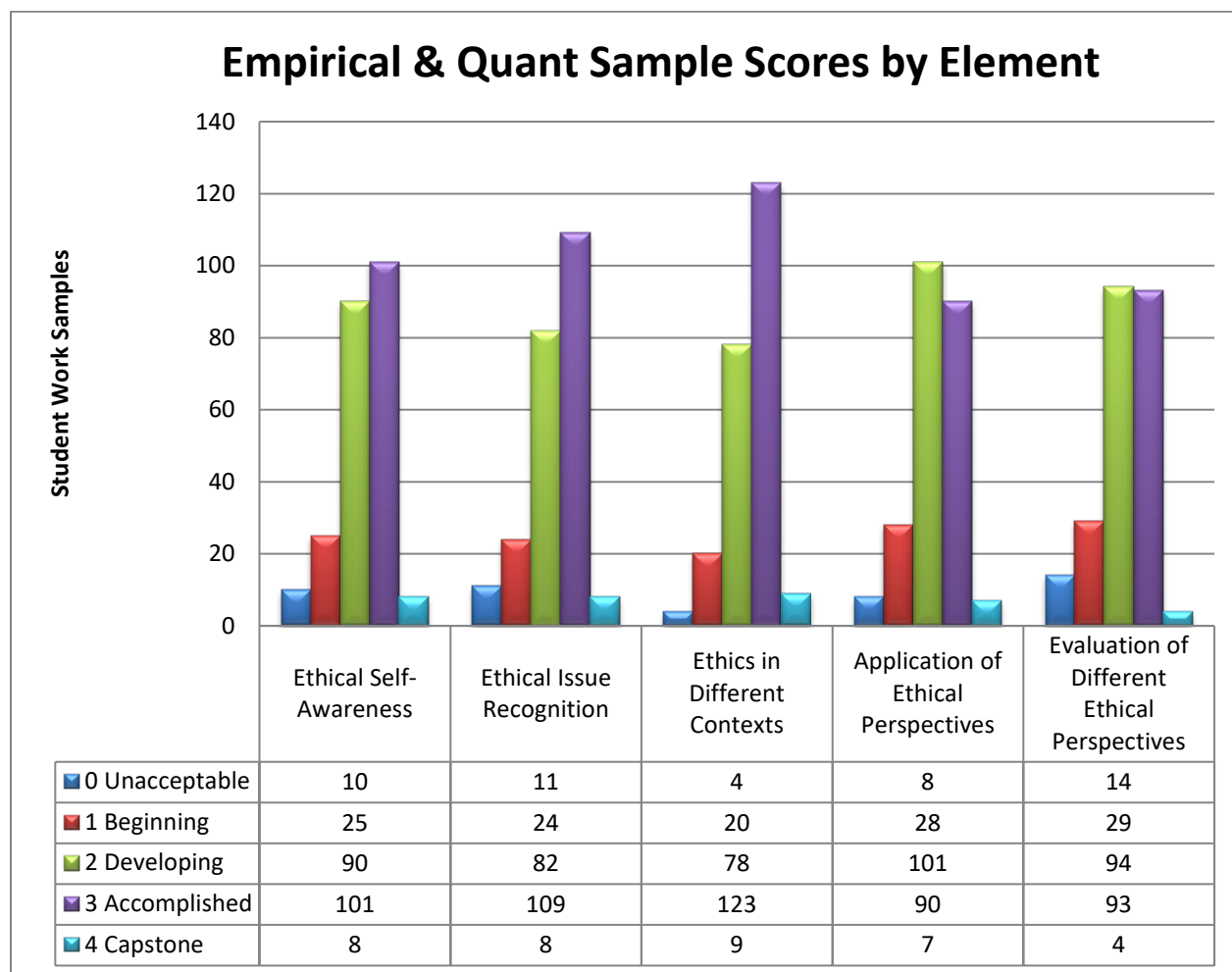


Figure C7

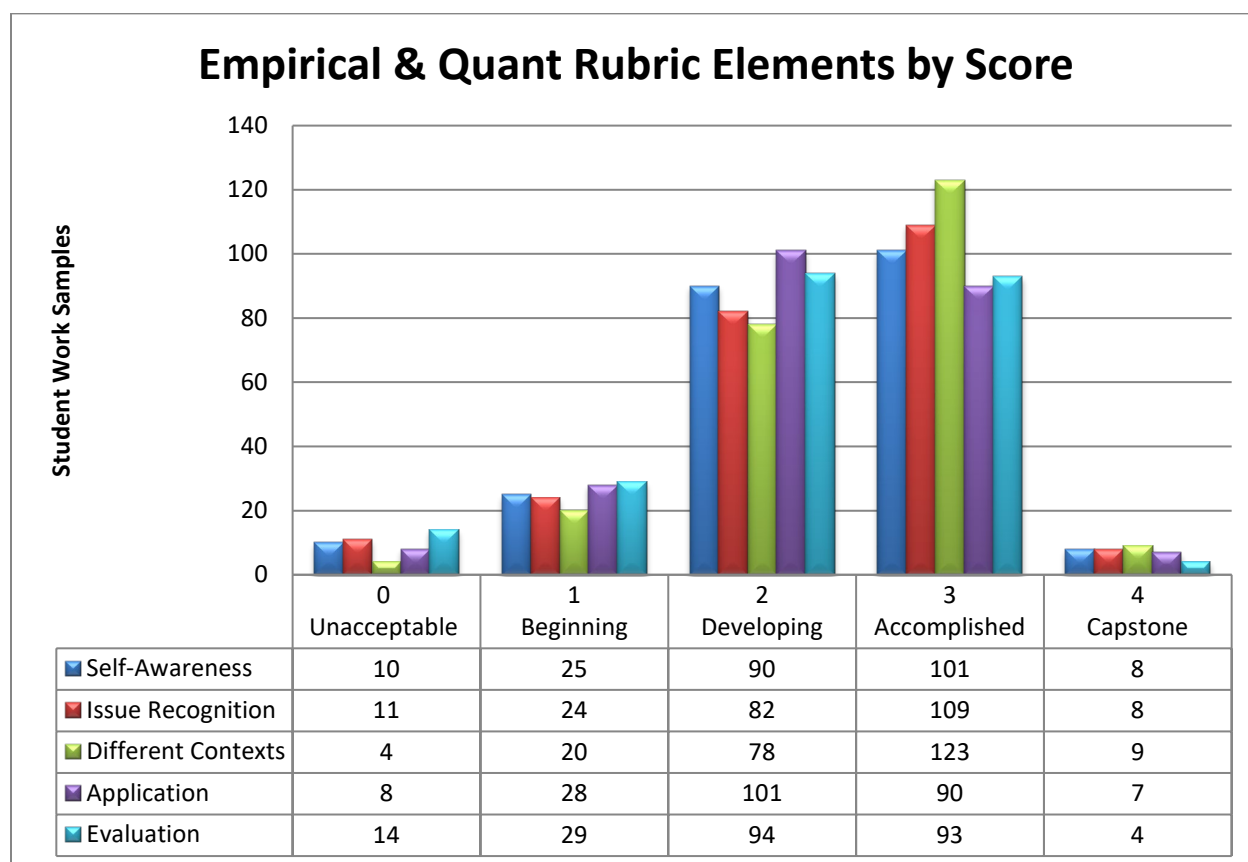


Figure C8

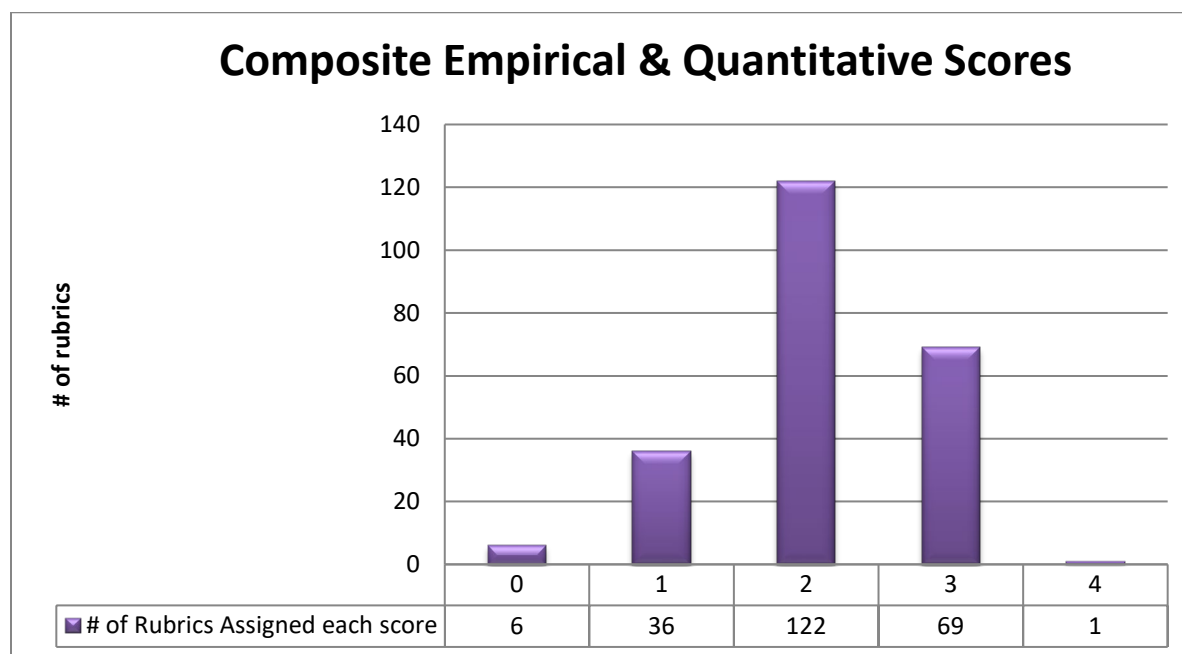


Figure C9