College of Criminal Justice
A Report on the Teamwork Self-Reflection Instrument (TSRI)
2022-2023

The Teamwork Self-Reflection Instrument (TSRI) was developed by the Sam Houston State University (SHSU) Office of Assessment to evaluate one of six Core Objectives outlined by the Texas Higher Education Coordinating Board (THECB), teamwork. The THECB (2018) defines teamwork as "the ability to consider different points of view and to work effectively with others to support a shared purpose or goal" (p. 4).

Research Questions

The following research questions were addressed in this investigation: (a) What is the difference between overall teamwork scores for students classified as freshman/sophomore and students classified as junior/senior? (b) What is the difference between groups based on the number of teamwork experiences and the total TSRI score?

Method

Instrument

The TSRI was intentionally designed to assess students' self-perceived actions, attitudes, and behaviors in team settings. It was piloted in Fall 2016, revised, then further tested in Fall 2017 and Spring 2018. The full implementation began in Fall 2018. The TSRI is administered each academic year to approximately 500 students. Over a three-year cycle, each academic college at SHSU participates. The TSRI schedule can be viewed on the Office of Assessment's Core Curriculum Projects webpage.

Instrument Reliability

An exploratory factor analysis conducted on the first iteration of the instrument revealed the possibility of four underlying factors each meeting the eigenvalue-greater-than-one rule (Kaiser, 1958), and three of those factors were ultimately demonstrated to be reliable using internal consistency analysis. The relative fit of questions within each of the factors was determined using the correlational cutoff of .3 (Lambert & Durand, 1975). Two questions did not factor into any of the three reliable factors, and overall reliability was slightly improved with their exclusion (.838 to .844), so the questions were revised.

A factor analysis conducted using data from the 2023-2024 administration, involving the College of Criminal Justice and the College of Science and Engineering Technology, confirmed four underlying factors: interactions with group members, group engagement and task management, contributions to group discussions, and intergroup conflict. As revealed in the principal component analyses for 2021-2022 and 2022-2023,, one question (Q9) had an r-square value less than .3, and it did not factor into any of the factors. so this question will be revised or removed from the TSRI for the 2023-2024 administration. Reliability analysis revealed that three of the factors were reliable. In general, good alpha estimates range from .7 - .9 (George & Mallery, 2003), with <.50 being unacceptable, .51-.60 being poor, .61-.70 being questionable, .71-.80 being acceptable, .81-.90 being good, and .91-.95 being excellent. Cronbach's Alpha for each factor was as follows: Factor 1 (interactions with group members) = .753, Factor 2 (group engagement and task management) = .698, Factor 3 (contribution to group discussions) = .719, and Factor 4 (intergroup conflict) = .706

Participants

For 2022-2023, 141 students ($N = 141$) from the College of Criminal Justice completed the TSRI. Table 1 provides a breakdown of participants by class group.

Table 1
TSRI Participants by Class Group for the College of Criminal Justice

Class Group	*n*
Freshman/Sophomore	39
Junior/Senior	102
Total	141

Procedure

The Office of Assessment strives to elicit faculty and student participation from every department in participating colleges. Although the TSRI may be completed by students enrolled in face-to-face or online classes, face-to-face is the preferred modality as it typically yields higher participation rates.

At the beginning of the semester, the Director of Assessment sends an email to college leadership requesting participation in the TSRI process. Upon receipt of the email, the Associate Dean responsible for assessment in his/her college coordinates with department chairs to elicit faculty willing to designate approximately ten minutes of class time to allow students to complete the TSRI. Interested faculty then coordinate with the Office of Assessment to determine a date and time for students to complete the instrument. A Qualtrics link to the TSRI is sent to students on the arranged date and time. After all of the TSRIs have been completed, the results are exported to an Excel file and then imported to SPSS for data analysis.

Results: Independent Samples *t*-test

The following research question guided this investigation: What is the difference between overall teamwork scores for students classified as freshman/sophomore and students classified as junior/senior?

Results Summary

For the College of Criminal Justice, the Department of Criminal Justice and Criminology, and the Department of Victim Studies, *t*-test analyses revealed no statistically significant differences in scores between the freshman/sophomore and junior/senior groups. The Department of Security Studies did not participate in the TSRI during the 2022-2023 academic year.

College of Criminal Justice

This investigation addressed the following research question: What is the difference between overall teamwork scores for students classified as freshman/sophomore and students classified as junior/senior? Before calculating inferential statistics to ascertain if statistically significant differences were present in overall teamwork scores between class groups (i.e.,

freshman/sophomore and junior/senior students), the standardized skewness coefficients (i.e., the skewness value divided by the standard error of skewness) and the standardized kurtosis coefficients (i.e., the kurtosis value divided by the standard error of kurtosis) were calculated. Because all four coefficient values were within the range of normality (i.e., +/-3, Onwuegbuzie & Daniel, 2002), the assumption of normality for an independent samples *t*-test was met. The standardized skewness and standardized kurtosis coefficient values are presented in Table 2. Because the independent variable of student classification was dichotomous and the dependent variable of overall teamwork scores was at the ratio level, these assumptions for a parametric independent samples *t*-test were also met (Slate & Rojas-LeBouef, 2011). Therefore, a parametric independent samples *t*-test was performed to answer the first research question. Results revealed no statistically significant difference in teamwork scores by class group ($p = .450$). Descriptive statistics for this analysis are presented in Table 3.

Table 2
Standardized Skewness Coefficients and Standardized Kurtosis Coefficients for Teamwork Scores by Class Group for the College of Criminal Justice

Class Group	Standardized Skewness Coefficient	Standardized Kurtosis Coefficient
Freshman/Sophomore	-0.73	-0.88
Junior/Senior	0.16	-0.55

Table 3
Descriptive Statistics for Teamwork Scores by Class Group for the College of Criminal Justice

Class Group	*n*	*M*	*SD*
Freshman/Sophomore	39	48.72	7.73
Junior/Senior	102	49.21	7.13

Department of Criminal Justice and Criminology

Before calculating inferential statistics to ascertain if statistically significant differences were present in overall teamwork scores between class groups (i.e., freshman/sophomore and junior/senior students), the standardized skewness coefficients (i.e., the skewness value divided by the standard error of skewness) and the standardized kurtosis coefficients (i.e., the kurtosis value divided by the standard error of kurtosis) were calculated. Because all four coefficient values were within the range of normality (i.e., +/-3, Onwuegbuzie & Daniel, 2002), the assumption for a normal distribution was met. The standardized skewness and standardized kurtosis coefficient values are presented in Table 4. Because the independent variable of student classification was dichotomous and the dependent variable of overall teamwork scores was at the ratio level, these assumptions for a parametric independent samples *t*-test were also met (Slate & Rojas-LeBouef, 2011). Therefore, a parametric independent samples *t*-test was performed to answer the research question. Results revealed no statistically significant difference in teamwork scores between class groups ($p = .919$). Descriptive statistics for this analysis are delineated in Table 5.

Table 4
Standardized Skewness Coefficients and Standardized Kurtosis Coefficients for Teamwork Scores by Class Group for the Department of Criminal Justice and Criminology

Class Group	Standardized Skewness Coefficient	Standardized Kurtosis Coefficient
Freshman/Sophomore	-1.52	0.17
Junior/Senior	-0.35	-0.34

Table 5

Descriptive Statistics for Teamwork Scores by Classification for the Department of Criminal Justice and Criminology

Class Group	*n*	*M*	*SD*
Freshman/Sophomore	30	50.07	7.56
Junior/Senior	73	48.81	7.24

Department of Victim Studies

Because the independent variable of student classification was dichotomous and the dependent variable of overall teamwork scores was at the ratio level, these assumptions for a parametric independent samples *t*-test were also met (Slate & Rojas-LeBouef, 2011).To determine if the data were normally distributed, the standardized skewness coefficients (i.e., the skewness value divided by the standard error of skewness) and the standardized kurtosis coefficients (i.e., the kurtosis value divided by the standard error of kurtosis) were calculated. All four coefficient values were within the range of normality (i.e., +/-3, Onwuegbuzie & Daniel, 2002). Coefficient values are presented in Table 6. Because all assumptions were met, a parametric independent samples *t*-test was performed. Results revealed no statistically significant difference in teamwork scores between class groups ($p = .800$). Descriptive statistics for this analysis are provided in Table 7.

Table 6
Standardized Skewness Coefficients and Standardized Kurtosis Coefficients for Teamwork Scores by Class Group for the Department of Victim Studies

Class Group	Standardized Skewness Coefficient	Standardized Kurtosis Coefficient
Freshman/Sophomore	1.44	0.62
Junior/Senior	0.48	-0.70

Table 7
Descriptive Statistics for Teamwork Scores by Class Group for the Department of Victim Studies

Class Group	*n*	*M*	*SD*
Freshman/Sophomore	9	44.22	6.83
Junior/Senior	29	50.21	6.87

Results: One-Way Analysis of Variance (ANOVA)

The following research question guided this investigation: What is the difference between groups based on the number of teamwork experiences and the total TSRI score?

Results Summary

For the College of Criminal Justice and the Department of Criminal Justice and Criminology, ANOVA analyses revealed no statistically significant differences in scores between the five groups (categorized by the number of teamwork experiences). The sample size for the Department of Victim Studies was insufficient for statistical analysis, and the Department of Security Studies did not participate in the TSRI during the 2022-2023 academic year.

College of Criminal Justice

This analysis addressed the following question: What is the difference between groups based on the number of teamwork experiences and the total TSRI score?

Before performing inferential statistical procedures to answer the research question, the data were examined to ensure the assumptions for a parametric one-way Analysis of Variance (ANOVA) were met. Because the dependent variable (total TSRI score) was a continuous variable and the independent variable (number of teamwork experiences) consisted of five categorical groups of independent observations, the first two assumptions were met. To determine if the data were normally distributed, the standardized skewness coefficients and the standardized kurtosis coefficients were calculated. These calculations revealed that all coefficients were within the +/- 3 range of normality (Onwuegbuzie & Daniel, 2002); therefore, the assumption for a normal distribution was met. The standardized skewness and standardized kurtosis coefficient values are presented in Table 8. A Levene's test was performed for the sixth assumption regarding homogeneity of variance. This result revealed that homogeneity of variance was present (p = .814). Accordingly, a parametric one-way ANOVA statistical procedure was performed.

Table 8
Standardized Skewness Coefficients and Standardized Kurtosis Coefficients for TSRI Scores and Number of Teamwork Experiences for the College of Criminal Justice

Class Group	Standardized Skewness Coefficient	Standardized Kurtosis Coefficient
1	-0.86	0.32
2	0.38	-1.14
3	-1.65	0.80
4	0.15	-0.72
5	0.44	-0.65

Regarding the extent to which differences were present in students' total teamwork scores as a function of the number of teamwork experiences, the results revealed no statistically significant

differences between the groups, $p = .548$. Table 9 contains the descriptive statistics for TSRI scores and the number of teamwork experiences for the College of Criminal Justice.

Table 9

Descriptive Statistics for TSRI Scores and Number of Teamwork Experiences for the College of Criminal Justice

Group	*n* of teamwork experiences	*n* of students in the group	*M*	*SD*
1	0	6	51.00	9.76
2	1-3	53	48.04	7.23
3	4-6	41	48.93	7.26
4	7-9	14	51.36	6.82
5	10 or more	27	49.70	7.20

Department of Criminal Justice and Criminology

Because the dependent variable (total TSRI score) was a continuous variable and the independent variable (number of teamwork experiences) consisted of five categorical groups of independent observations, the first two assumptions were met. To determine if the data were normally distributed, the standardized skewness coefficients and the standardized kurtosis coefficients were calculated. These calculations revealed that all coefficients were within the +/- 3 range of normality (Onwuegbuzie & Daniel, 2002); therefore, the assumption for a normal distribution was met. The standardized skewness and standardized kurtosis coefficient values are presented in Table 10. A Levene's test was performed for the sixth assumption regarding homogeneity of variance. This result revealed that homogeneity of variance was present ($p = .200$). Accordingly, a parametric one-way ANOVA statistical procedure was performed to determine the extent to which differences were present in students' total teamwork scores as a function of their number of teamwork experiences. Results revealed no statistically significant differences between groups, $p = .200$. Descriptive statistics for TSRI scores and the number of teamwork experiences for the Department of Criminal Justice and Criminology are provided in Table 11.

Table 10

Standardized Skewness Coefficients and Standardized Kurtosis Coefficients for TSRI Scores and Number of Teamwork Experiences for the Department of Criminal Justice and Criminology

Class Group	Standardized Skewness Coefficient	Standardized Kurtosis Coefficient
1	-1.34	0.96
2	0.10	-1.20
3	-1.78	1.38
4	-0.40	-0.65
5	-0.48	-0.15

Table 11

Descriptive Statistics for TSRI Scores and Number of Teamwork Experiences for the Department of Criminal Justice and Criminology

Group	*n* of teamwork experiences	*n* of students in the group	*M*	*SD*
1	0	5	52.00	10.56
2	1-3	35	48.23	8.01
3	4-6	32	49.34	7.33
4	7-9	13	51.00	6.96
5	10 or more	18	48.61	5.29

Department of Victim Studies

Because the sample sizes for two of the groups were so small, neither a parametric nor a nonparametric ANOVA was performed. Descriptive statistics for the Department of Victim Studies are presented in Table 12.

Table 12

Descriptive Statistics for TSRI Scores and Number of Teamwork Experiences for the Department of Victim Studies

Group	*n* of teamwork experiences	*n* of students in the group	*M*	*SD*
1	0	1	46.00	-
2	1-3	18	47.67	5.59
3	4-6	9	47.44	7.21
4	7-9	1	56.00	-
5	10 or more	9	51.89	10.05

References

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