Assessing Teamwork Using Student Self-Reflections: Evolution of a Locally Developed Instrument

Structure and Scoring of the TSRI

The TSRI consists of 17 Likert-Scale questions. Each question presented students with a series of statements regarding different elements of teamwork and asked the students to select the statement they most agreed with. Questions were designed to explore student perceptions of their contributions to group activities and discussions, their time and task management skills, their interactions with group members, and their responses to intergroup conflict and disagreement.

Three additional questions at the end of the survey asked students to estimate the number of teamwork experiences they have had at SHSU, to rate their ability to work with others on a Likert scale, and to estimate their teamwork skills in comparison to other students completing the survey.

To score the TSRI, the potential responses to each of the 17 questions are assigned a point value (-1, 1, 0, and 3), reflecting each response relative to level of development. Responses valued at -1 demonstrate negative teamwork characteristics, while responses valued at 3 showed the highest levels of development. Scores for the instrument can range from a minimum of -17 to a maximum of 51.

Instrument Reliability

Ensuring the reliability of testing instruments, like the TSRI, is an important step in using these instruments to better understand student learning and behaviors (Roberts, Wright, & Sanford, 2017). Therefore, exploratory factor analysis (EFA) and reliability analysis were conducted prior to data analysis to determine the underlying factor structure of the instrument, the reliability of these factors, and the overall reliability of the instrument.

An exploratory factor analysis revealed the possibility of four underlying factors each meeting the eigenvalue-greater-than-one-rule (Kaiser, 1958):

- Three were ultimately demonstrated to be reliable using internal consistency analysis
- The transition from a pilot project to full roll-out to colleges will occur in fall 2018. Colleges will be selected based on their placement in the core curriculum assessment projects rotation.

Reliability Analysis Revealed Three Reliable Factors:

- Factor One – Interactions with Group Members
  - Cronbach’s Alpha = .78
- Factor Two – Engagement in Group Activities and Discussion
  - Cronbach’s Alpha = .78
- Factor Three – Responses to Intergroup Conflict
  - Cronbach’s Alpha = .76

Two questions (Question 2 and Question 9) did not factor into any of the three reliable factors. Furthermore, the overall reliability of the instrument was (slightly) improved with their deletion (.838 to .844). These questions will be revised prior to the Fall 2018 administration.

Results

A parametric Analysis of Variance (ANOVA) procedure was used to calculate differences in student TSRI Scores as a function of level of self-reported teamwork experiences (i.e., 0 experiences, 1-3 experiences, 4-6 experiences, 7-9 experiences, 10 or more experiences). Although students with more self-reported teamwork experiences demonstrated higher mean scores than those with fewer teamwork experiences, these results were not statistically significant (F(4, 398) = 1.26, p = .28, n² = .01).

A parametric independent samples t-test revealed that the TSRI scores of students enrolled in lower-division courses were statistically significantly lower than those of students enrolled in upper-division courses, t(253.54) = 1.99, p = .05. This difference represented a small effect size (Cohen’s d of 0.28).

The overall Mean score for all students was 31.14, with scores ranging from a low of 1 to a high of 51.