General Protocol for Instrument Development
Student Performance Index

Construct Discovery and Validation
1. Discovery of the conceptual framework
   - 1.1. Workshops
   - 1.2. Advisory boards
   - 1.3. Semi-structured interviews
   - 1.4. Asynchronous surveys
2. Analysis and synthesis of conceptual framework discovery
   - 2.1. Instructional design review
   - 2.2. Psychometric review
   - 2.3. Technical review
3. Validation of the conceptual framework
   - 3.1. Semi-structured interviews
4. Finalization of the conceptual framework
   - 4.1.1. Construct refinement based on validation process
   - 4.1.2. Operationalization of construct
   - 4.1.3. Design and documentation of technical requirements for the measurement of the conceptual framework

Establishing Content Validity
1. First draft of instrument by internal technical experts
2. Validation of the instrument by external content experts
   - 2.1. Semi-structured interviews
   - 2.2. Asynchronous surveys
3. Instrument refinement
   - 3.1. Instructional design review
   - 3.2. Psychometric review
   - 3.3. Technical review

Establishing Face Validity
1. Pretest of the refined instrument
   - 1.1. Semi-structured interviews
   - 1.2. Asynchronous surveys
2. Finalization of the pilot instrument
   - 2.1. Instructional design review
   - 2.2. Psychometric review
   - 2.3. Technical review

Data Collection
1. Pilot test
   - 1.1. Faculty training

      1.2.   Distribution of the instrument to a representative sample of the student population
2. Post-pilot faculty interviews

Item Analysis
1. Analysis of item difficulty
2. Analysis of item discrimination
3. Analysis of the distribution of scores

Estimating Reliability
1. Estimation of internal consistency
      1.1.   By population
      1.2.   By student level

Instrument Finalization
1. Reporting analysis
2. Instrument refinement
      2.1.   Instructional design review
      2.2.   Psychometric review
      2.3.   Technical review
3. Final instrument assembly