Testing the New Scales on the Faculty Survey of Student Engagement

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Session Outline
- Updating the NSSE and FSSE
- Introduce new FSSE Scales
- Overview of Scales in reporting
- Scale Development and Testing
  - Data
  - Methods
  - Results
- Future Testing

Goals of the Survey Update
- To continue in our core purpose of assessing student engagement in effective educational practices to inform improvement efforts;
- To stay current with movements and trends in higher education;
- To improve the clarity, consistency, and applicability of the survey;
- To improve the properties of existing measures; and
- To incorporate new measures relevant to effective teaching and learning

Themes and Scales

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<thead>
<tr>
<th>Themes</th>
<th>FSSE Scales</th>
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FSSE Scales

Scoring
- 60-point scales
  - Each item is recoded to 60-point range (e.g., Never=0, Sometimes=20, Often=40, Very often=60)
  - Faculty member’s score is the average score across the individual items.
  - Institution’s scale scores is the average of faculty scores
  - Scales with five or more items are computed even if a faculty member skips one item

Disciplinary Area Report
- Means, Standard deviations, and counts for each FSSE scale across institution-created disciplinary groupings
Disciplinary Area Report

Scale Development and Testing

- Data
  - 2012 pilot
  - 2013 administration
- Methods
  - Item-level
  - Scale-level
- Results

Data: 2012 Pilot, 2013 Administration

- 2012 pilot
  - 22 institutions; 4844 faculty
- 2013 administration
  - 146 institutions
    - 61% Private
    - 16% research universities
    - 45% master’s granting
    - 40% bachelor’s granting
  - 18,133 faculty
  - Institutional response rate average of 49%

Data: 2013 FSSE Sample

- 18,133 faculty
  - 51% female
  - 73% White
  - 73% full-time
  - 26% Professor
  - 27% Associate professor
  - 29% Assistant professor
  - 14% Instructor or Lecturer
  - 25% Arts & Humanities
  - 6% Biological Sciences
  - 11% Physical Sciences, Math, Comp Sci
  - 13% Social Science
  - 11% Business
  - 4% Communications
  - 11% Education
  - 3% Engineering
  - 12% Health Professions
  - 5% Social Science Professions

Methods: Individual Items

- Analyses were completed for all faculty, separated by those that teach lower- and upper-division courses
- Item descriptives included frequencies, proportion of missing values, means, standard error of the means, standard deviations, skewness, standard error of skewness, kurtosis, standard error of kurtosis

Methods: Scale Analysis

- Exploratory factor analysis
  - Used items parallel to NSSE Engagement Indicator items, oblique rotation
- Confirmatory factor analysis
  - Used EFA results as guide, first created models for upper-division faculty
- Scale descriptives
  - Same descriptives as item-level analysis
- Internal consistency reliability
  - Cronbach’s alphas, inter-item correlations, item-scale correlations
- Generalizability theory
  - Looking for minimum sample size for generalizability for an institution
**Methods: Criteria Examples**

- Full explanation of methods and criteria will be posted on the FSSE website
- Some example criteria:
  - Internal consistency
    - Cronbach's $\alpha \geq .7$
    - Average inter-item correlation between .15 and .50
    - Range of inter-item correlations between .15 and .85
  - Generalizability
    - Coefficients $\geq .7$ are acceptable, $\geq .9$ are good

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**Academic Challenge:** Higher-Order Learning, Reflective & Integrative Learning

- Items and scales are slightly skewed left (average score is above midpoint)

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- fHO: items and scale are slightly skewed left (average score is above midpoint)
- fRI: average inter-item correlation was high, but range of inter-item correlations were within limits
- fLS: items and scale are slightly skewed left
- fQR: average inter-item correlation was high, but range of inter-item correlations were within limits

- fLS gen: LD 25, UD 50
- fQR gen: 25

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**Learning with Peers:** Collaborative Learning, Discussions with Diverse Others

- fDD: average inter-item correlation was high, but range of inter-item correlations were within limits
- fCL gen: 25
- fDD gen: 25, best generalizable scale

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**Academic Challenge:** Learning Strategies, Quantitative Reasoning

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- fLS gen: LD 25, UD 50
- fQR gen: 25
Experiences with Faculty:
Student-Faculty Interaction

- No parallel for the NSSE Engagement Indicator
- Effective Teaching Practices
  - fSF gen: 25

Campus Environment:
Quality of Interactions, Supportive Environment

- EFA indicated potential subscales
  - fQI gen: 25
  - fSE gen: 25

Other Scale Explorations

- Effective Teaching Practices
  - This measure did not meet minimum requirements for internal consistency analysis
  - Additional items added to FSSE 2014
- Supportive Environment Subscales
  - SE-Academic (use with caution)
  - SE-Social (potential quality subscale)
- Course Goals, HIP Importance for future study

Future Testing

- Concurrent Validity
- Predictive Validity
- Known-Groups Validity
- Consequential Validity
- Temporal Stability Reliability
- Missing Data, Response Drop Off, Straight Lining, Duration
- Anything else?!

Questions?
Paper, presentation, and more information about FSSE at fsse.iub.edu
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