Postsecondary Instructional Practices Survey (PIPS)

INFORMATION
The Postsecondary Instructional Practices Survey (PIPS) was designed by researchers at Western Michigan University to collect self-report of teaching practices from instructors at institutions of higher education. It is designed to survey instructors from any discipline, including full- and part-time faculty and graduate students.

Factor and correlational analyses support the PIPS producing 5 constructs within 2 broader categories. The ‘instructor-centered practice’ category includes 8 items in 2 constructs: Instructor-student interactions (4 items) and summative assessment (4 items). The ‘student-centered practice’ category includes 16 items in 3 constructs: Student-student interactions (6 items), student-content interactions (5 items), and formative assessment (5 items). Each item is scored on a frequency style scale from 0 (not at all descriptive of my teaching) to 4 (very descriptive of my teaching).

PIPS ITEMS BY CONSTRUCT and CATEGORY (Overall PIPS Reliability: $\alpha = 0.806$)

**Category. Instructor-Centered Practice ($\alpha = 0.635$)**
**Construct. Instructor-Student Interactions ($\alpha = 0.644$)**
P01. I guide students through major topics as they listen and take notes.
P03. My syllabus contains the specific topics that will be covered in every class session.
P05. I structure my course with the assumption that most of the students have little knowledge of the topics.
P07. I class sessions are structured to give students a good set of notes.

**Category. Instructor-Centered Practice ($\alpha = 0.635$)**
**Construct. Summative Assessment ($\alpha = 0.447$)**
P21. My test questions focus on important facts and definitions from the course.
P22. My test questions require students to apply course concepts to unfamiliar situations.
P23. My test questions contain well-defined problems with one correct solution.
P24. I adjust student scores (e.g., curve) when necessary to reflect a proper distribution of grades.

**Category. Student-Centered Practice ($\alpha = 0.735$)**
**Construct. Student-Student Interactions ($\alpha = 0.825$)**
P10. I structure class so that students explore or discuss their understanding of new concepts before formal instruction
P12. I structure class so that students regularly talk with one another about course concepts.
P13. I structure class so that students constructively criticize one another's ideas.
P14. I structure class so that students discuss the difficulties they have with this subject with other students.
P15. I require students to work together in small groups.
P19. I require students to make connections between related ideas or concepts when completing assignments.

**Category. Student-Centered Practice ($\alpha = 0.735$)**
**Construct. Student-Content Interactions ($\alpha = 0.606$)**
P02. I design activities that connect course content to my students' lives and future work.
P07. I frequently ask students to respond to questions during class time.
P09. I have students use a variety of means (models, drawings, graphs, symbols, simulations, etc.) to represent phenomena.
P16. I structure problems so that students consider multiple approaches to finding a solution.
P17. I provide time for students to reflect about the processes they use to solve problems.
PIPS ITEMS BY CONSTRUCT and CATEGORY (continued)

Category. Student-Centered Practice ($\alpha = 0.735$)

Construct. Formative Assessment ($\alpha = 0.641$)

P04. I provide students with immediate feedback on their work during class (e.g., student response systems, short quizzes, etc.)
P06. I use student assessment results to guide the direction of my instruction during the semester.
P08. I use student questions and comments to determine the focus and direction of classroom discussion.
P18. I give students frequent assignments worth a small portion of their grade.
P20. I provide feedback on student assignments without assigning a formal grade.

PIPS SCORE CALCULATIONS

Construct Scores (5 values)
The PIPS generates 5 construct scores, including scores for (a) instructor-student interactions, (b) student-student interactions, (c) student-content interactions, (d) formative assessment and (e) summative assessment. Each construct score is a proportion-based value between 0 (not descriptive of my teaching) and 100 (very descriptive of my teaching). Individual construct scores can also be used to generate mean construct scores for a department or institution.

To calculate a construct score, add scores from each of its items, divide by the maximum score for the construct, and multiply by 100. For example, calculate the Instructor-Student Interactions score by adding the scores from items P01, P03, P05, and P11 and then divide by ($4+4+4+4=16$). Multiply this proportion by 100 to generate a final construct score between 0 (not at all descriptive of my teaching) and 100 (very descriptive of my teaching).

<table>
<thead>
<tr>
<th>Instructor-Student Interactions</th>
<th>$[(P01 + P03 + P05 + P11) / 16] * 100$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summative Assessment</td>
<td>$[(P21 + P22 + P23 + P24) / 16] * 100$</td>
</tr>
<tr>
<td>Student-Student Interactions</td>
<td>$[(P10 + P12 + P13 + P14 + P15 + P19) / 24] * 100$</td>
</tr>
<tr>
<td>Student-Content Interactions</td>
<td>$[(P02 + P07 + P09 + P16 + P17) / 20] * 100$</td>
</tr>
<tr>
<td>Formative Assessment</td>
<td>$[(P04 + P06 + P08 + P18 + P20) / 20] * 100$</td>
</tr>
</tbody>
</table>
PIPS SCORE CALCULATIONS (continued)

PIPS Category Scores (2 values)
The PIPS also generates 2 category scores, including scores for (a) instructor-centered practice and (b) student-centered practice. Despite the names of these categories, scores should not be interpreted as evaluative, as even the most student-centered instructor could use elements of instructor-centered practice in their classroom.

\[
\text{Instructor-Centered Practice} = \frac{(\text{Instructor-Student Interactions} + \text{Summative Assessment})}{2}
\]

\[
\text{Student-Centered Practice} = \frac{(\text{Student-Student Interactions} + \text{Student-Content Interactions} + \text{Formative Assessment})}{3}
\]

Like the construct scores, each category score has a value between 0 (not at all descriptive of my teaching) and 100 (very descriptive of my teaching). Individual category scores can be also be used to generate mean scores for a department or institution.

Figure 1. PIPS construct and category scores for an individual instructor from Institution A in spring 2014.
**PIPS Category Scores (continued)**

PIPS category scores can be also placed on an x-y scatterplot based on correlations among the constructs (see Walter, Henderson, Beach, & Williams, *in press*). We find it helpful to place the crossing of the axes for these scatterplots at the midpoint (50, 50). This generates a matrix of instructor- and student-centered practice with varying degrees of descriptiveness from 0 to 100 (see *Figures 2 and 3*). Category scores can also be directly examined using comparative analyses.

![scatterplot](image)

**Figure 2.** PIPS category scores from instructors in the 19 sampled departments at Institution A (N=216). Case departments are identified.
Figure 3. PIPS category scores from instructors in the 40 sampled departments at Institution D (N=424). Where applicable, departments with similar classification as those selected for case study at Institution A are identified.
Figure 4. Mean department PIPS category scores for 78 departments at four institutions (N=890), including standard error bars for each department mean score.
Figure 5. Institutional differences in mean PIPS category scores by institution. Note. Significant differences based on post-hoc Scheffe tests: (a) Institutional mean significantly different than the other 3 institutions ($p < 0.05$); (b) Institutional mean significantly lower than the 2 higher scoring institutions ($p < 0.05$); (c) Institutional mean significantly different than the highest and lowest scoring institutions ($p < 0.05$); (d) Institutional mean significantly different from the highest scoring institution, but not the other 2 institutions ($p < 0.05$).
Postsecondary Instructional Practices Survey (PIPS)

INFORMATION
This survey was designed by researchers at Western Michigan University to collect self-reported teaching practices from individuals teaching at institutions of higher education.

INSTRUCTIONS
The survey has 24 items and 9 demographic questions. It should take about 10 minutes to complete.

Each item is a statement that may represent your current teaching practice. As you proceed through the survey, please consider the statements as they apply to teaching your lowest level, largest enrollment undergraduate course taught in the last two years.

Please read each statement and then indicate the degree to which the statement is descriptive of your teaching. There are no “right” or “wrong” answers. The purpose of the survey is to understand how you teach, not to evaluate your teaching.

0 - Not at all descriptive of my teaching
1 - Minimally descriptive of my teaching
2 - Somewhat descriptive of my teaching
3 - Mostly descriptive of my teaching
4 - Very descriptive of my teaching

Consider the lowest level, largest enrollment undergraduate course you are currently teaching or have taught in the last two years:

D01. Enrollment:

___% Majors in your discipline
___% Majors in other disciplines

D02. Is this a general education course? Yes / No / Not Applicable

D03. Weekly contact hours you teach per section:
Lecture: ____________________________________________
Lab: ______________________________________________
Combined Lecture/Lab: _____________________________
Discussion/Recitation: _____________________________
Other (please specify): _____________________________

D04. If you think we need more information about your class, please explain:

D05. How are most decisions about teaching practices made?
___ I make most decisions
___ I’m part of a team that makes most decisions
___ Someone else makes most decisions
___ Other, please describe: __________________________

© 2015 Center for Research on Instructional Change in Postsecondary Education (CRICPE)
Postsecondary Instructional Practices Survey (PIPS), Western Michigan University, with support from NSF #1256505
Optional Questions. If you teach lecture and/or integrated lab, please indicate what proportion class time during a typical week is spent in the following activities. The sum of these questions should equal 100%.

A. The instructor talking to the whole class. _____ %
B. Students working individually. _____ %
C. Students working in small groups. _____ %
D. Students doing something else. (please specify) _____ % Other Activity: _______________________
   _____ % Other Activity: _______________________
   _____ % Other Activity: _______________________
**Directions:** Please indicate the degree to which the following statements are descriptive of your teaching in your *lowest level, largest enrollment undergraduate course taught in the last 2 years*.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all descriptive of my teaching</th>
<th>Minimally descriptive of my teaching</th>
<th>Somewhat descriptive of my teaching</th>
<th>Mostly descriptive of my teaching</th>
<th>Very descriptive of my teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I guide students through major topics as they listen and take notes.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I design activities that connect course content to my students' lives and future work.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. My syllabus contains the specific topics that will be covered in every class session.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I provide students with immediate feedback on their work during class (e.g., student response systems, short quizzes)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I structure my course with the assumption that most of the students have little useful knowledge of the topics.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I use student assessment results to guide the direction of my instruction during the semester.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I ask my students to respond to questions during class time.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I use student questions and comments to determine the focus and direction of classroom discussion.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I have students use a variety of means (models, drawings, graphs, symbols, simulations, etc.) to represent phenomena.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
**Directions:** Please indicate the degree to which the following statements are descriptive of your teaching in your *lowest level, largest enrollment undergraduate course taught in the last 2 years.*

<table>
<thead>
<tr>
<th></th>
<th>Not at all descriptive of my teaching</th>
<th>Minimally descriptive of my teaching</th>
<th>Somewhat descriptive of my teaching</th>
<th>Mostly descriptive of my teaching</th>
<th>Very descriptive of my teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. I structure class so that students explore or discuss their understanding of new concepts before formal instruction.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. My class sessions are structured to give students a good set of notes.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. I structure class so that students regularly talk with one another about course concepts.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. I structure class so that students constructively criticize one another's ideas.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. I structure class so that students discuss the difficulties they have with this subject with other students.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I require students to work together in small groups.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. I structure problems so that students consider multiple approaches to finding a solution.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. I provide time for students to reflect about the processes they use to solve problems.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. I give students frequent assignments worth a small portion of their grade.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
**Directions:** Please indicate the degree to which the following statements are descriptive of your teaching in your *lowest level, largest enrollment undergraduate course taught in the last 2 years.*

<table>
<thead>
<tr>
<th></th>
<th>Not at all descriptive of my teaching</th>
<th>Minimally descriptive of my teaching</th>
<th>Somewhat descriptive of my teaching</th>
<th>Mostly descriptive of my teaching</th>
<th>Very descriptive of my teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. I require students to make connections between related ideas or concepts when completing assignments.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. I provide feedback on student assignments without assigning a formal grade.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21. My test questions focus on important facts and definitions from the course.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22. My test questions require students to apply course concepts to unfamiliar situations.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23. My test questions contain well-defined problems with one correct solution.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24. I use a grading curve as needed to adjust student scores.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Appendix

Unstandardized factor loadings for PIPS items and factor covariances onto the confirmatory factor model.