Expected Outcome 1: Data Analysis

The ability to analyze data to support decision making is a critical skill needed by graduates as they enter careers in the supply chain management discipline. Data is abundant in the supply chain environment but it is not uniform across companies and the tools available to organize and interpret the data vary significantly. SCMN students should be able to organize, analyze, and understand a complex data set using commonly available analysis tools including spreadsheets (e.g., Excel) and relational data base (e.g., Access).

Assessment Method 1: Complex Case Analysis

Assessment Method Description

Assessment of students’ data analysis skills was accomplished by evaluating student performance on a complex business case analysis exercise in the capstone course Supply Chain Strategy (SCMN 4800). The case assignment is somewhat unique in that it places students on teams with students from several other universities and requires the evaluation of a complex supply chain scenario with only limited structure provided by faculty.

The goal assigned for the problem solving learning outcome is at least 75% of students majoring in supply chain management obtaining a score of 75% or better on the complex case analysis assignment.

Findings

The performance of 54 students enrolled in SCMN 4800 in the Spring 2013 semester were analyzed. 65% of students (35 out of 54) achieved a score of at least 75% on the complex business case analysis assignment. Based on this result, the supply chain program failed to achieve the data analysis learning goal for the 2012-2013 school year. Grade distribution is shown below (note, 8 of the 15 students in the ‘C’ category received scores of 75% or higher):
<table>
<thead>
<tr>
<th>Grade</th>
<th>Count</th>
<th>%</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>6</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>A</td>
<td>12</td>
<td>22%</td>
<td>33%</td>
</tr>
<tr>
<td>B</td>
<td>9</td>
<td>17%</td>
<td>50%</td>
</tr>
<tr>
<td>C+</td>
<td>8</td>
<td>15%</td>
<td>65%</td>
</tr>
<tr>
<td>C-</td>
<td>7</td>
<td>13%</td>
<td>78%</td>
</tr>
<tr>
<td>D</td>
<td>8</td>
<td>15%</td>
<td>93%</td>
</tr>
<tr>
<td>F</td>
<td>4</td>
<td>7%</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**How did you use findings for improvement?**

As a result of the SACS review and feedback the supply chain program has developed a revised plan for evaluating the data analysis learning objective in future years. Assessment of this learning goal will take place in a separate senior-level course, Supply Chain Performance Management (SCMN 4700). The course focuses primarily on the understanding and analysis of data and is designed around an in-depth investigation requiring extensive analysis of large sets of data. The learning activities in SCMN 4700 course are focused on three sub-categories related to data analysis: data organization, data interpretation, and data analysis. Multiple large-size databases (Big-data) from four different functional areas of the supply chain are provided to the students in a raw format. The class requires students to (a) learn and utilize multiple software tools in organizing data for the specific purpose of extracting supply chain performance metrics, (b) interpret the data within the context of performance metrics, and (c) analyze the data to identify supply chain performance gaps. The students are required to respond to specific questions over a number of assignments and reports, which draws upon the skills learned in the course related to data organization, interpretation and analysis.

The assessment of learning in this course will be done through two methods. The first method will measure the proficiency in using software tools (MS Excel / MS Access) to undertake the data organization and summarization tasks. The second method of learning assessment is based on written reports which measure data interpretation and data analysis skills. The instructor evaluates learning in the course based on the average scores earned in the assignments related to the two assessments methods discussed above.

The students’ average scores are mapped to a five-point scale (1 – Unacceptable, 5 – Excellent), in each of the two assessment methods (data interpretation, and data analysis) using the following conversion:
### Scale, Value, and Range (Avg. Scores)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Value</th>
<th>Range (Avg. Scores)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Excellent</td>
<td>90% to 100%</td>
</tr>
<tr>
<td>4</td>
<td>Good</td>
<td>80% to 89%</td>
</tr>
<tr>
<td>3</td>
<td>Adequate</td>
<td>70% to 79%</td>
</tr>
<tr>
<td>2</td>
<td>Poor</td>
<td>60% to 69%</td>
</tr>
<tr>
<td>1</td>
<td>Unacceptable</td>
<td>59% or less</td>
</tr>
</tbody>
</table>

The goal assigned to the data analysis learning objective is that more than 75% of the supply chain students receive a score of “Good” or better in each of the two assessment methods.

**Additional Comments**

### Expected Outcome 2: Problem Solving

It is very important that students demonstrate the ability to make effective decisions in order to identify and resolve problems in the fast-paced supply chain environment. Further, problem identification and problem solving activities often involve decision-making without complete information requiring strong critical thinks abilities.

**Assessment Method 1: Simulation Performance**

**Assessment Method Description**
Assessment for problem solving was facilitated by students’ performance on a simulation exercise. As part of the capstone Supply Chain Strategy course (SCMN 4800) in the SCMN curriculum students are required to demonstrate effective mastery of supply chain decision-making skills. The simulation takes place throughout the length of the semester and requires students to make, and routinely adjust, a variety of supply chain oriented decisions covering key supply chain functions including purchasing, manufacturing, transportation, demand forecasting and generation, and inventory management. The simulation presents a complex, dynamic environment where students must balance business priorities and react to a frequently shifting competitive landscape. Overall simulation performance is scored across thirteen criteria covering the broad areas of financial performance, operational performance, and customer service performance. In addition to the simulation itself students also complete several assignments intended to test the depth of their knowledge in several critical areas. The assignments include:
- Assignment 1 – Forecast development
- Assignment 2 – Strategy creation
- Assignment 3 – Performance measurement
- Assignment 4 – Inventory analysis
- Assignment 5 – Competitor analysis
- Assignment 6 – Evaluation of key decisions

Each of these assignments has a specific rubric which covers at least
Quality
  - The student addressed each of the questions asked
  - Adequate supporting analysis is included
  - Correctness of the response
Communications
  - Clarity
  - Succinctness of message
  - Message is well organized
  - Professional format

The goal assigned for the problem solving learning outcome is at least 75% of students majoring in supply chain management receive a combined score of 80% or better on the simulation on the simulation and all related assignments.

**Findings**
The performance of 127 students enrolled in SCMN 4800 in the Fall 2012 and Spring 2013 semesters were analyzed. 76% of students (96 out of 127) achieved a score of at least 75% on the combined simulation assignments. Based on this result, the supply chain program achieved the problem solving learning goal for the 2012-2013 school year.

**How did you use findings for improvement?**
As a result of the SACS review and feedback the supply chain program has developed a revised plan for evaluating the problem solving learning objective in future years. Specifically, the approach followed next year will address the need for more than one method of assessment and endeavor to create measures that avoid the use of holistic scoring and instead present findings that highlight patterns of students’ relative strength and weakness.

Simulation performance will continue to be used as one method of assessment. In addition to a raw average score, student’s problem solving abilities will be evaluated through a series of face-to-face briefings held twice per semester. The instructor will evaluate each student’s decision-making, and problem solving abilities on a 5-point scale following each briefing session. This evaluation may be used to measure improvement in problem solving abilities by measuring the difference in scores between briefings. The 5-point scale to be used will be as
follows:

1 – Unacceptable
2 – Poor
3 – Adequate
4 – Good
5 – Excellent

Results from the first year will serve as a baseline for comparison and improvement in future years.

Additional Comments