Overview

• Demands on IR offices

• Overview of methods, designs, and techniques

• Examples (methods, designs, and statistical techniques in context)

• Relationship building and creating an evidence-based culture
Outcomes

• Recognize how the demands on and capacity of IR offices can impact the complexity of the research offices are able to do

• Describe how research methods, designs, and statistical techniques are applied in the day-to-day operations of IR offices

• Identify how to take research from the basics to the next level through the innovative use of methods, designs, and statistical techniques

• Recognize the importance of relationship building and how IR can contribute to fostering evidence-based culture on their campuses

Demands on IR Offices

• Basic Skills
• Surveys
• SLOs
• Accreditation
• Program Review
• ARCC
• MIS
• IPEDS
• 320 Report
• Factbooks

• Institutional Effectiveness
• Matriculation
• Instructor Evaluations
• Enrollment Management
• Institutional Planning
• Assessment Validation
• Program Evaluation
• Grants
• Evidence to support decision making
Size of the Office

Challenges

• Always in demand
  – Board of trustees, president, vice presidents, deans, directors, department chairs, faculty, staff, chancellor’s office, federal government, internal and external media

• Limited resources (time, human, fiscal and equipment)

• Conflicting priorities (research vs. reporting)

Reporting vs. Research

• Reporting answers “who” or “how many”
  – Which students use tutoring more often?
  – How many female students are enrolled in engineering?
  – How many FTES is generated by part-time faculty?
  – Involves only descriptive statistics

• Research attempts to answer the “why” or “how”
  – How do learning communities impact student success?
  – How can we increase the likelihood that students will be successful?
  – Why are students enrolling or not enrolling?
  – Often (but not always) involves inferential statistics
Research Methods and Design

Methodology

- Quasi-Experimental
- Qualitative
- Mixed Methods
Experimental Methodology

- Best way to establish cause and effect
- Involves the introduction of a treatment
- Can be true experimental, quasi-experimental, or non-experimental
- All programs in this project are experimental in nature

Experimental Methodology

- True Experimental
  - Random assignment, not just selection
- Quasi-Experimental
  - Not random, but using multiple groups or measures
- Non-Experimental
  - Not random, using only one group with one measure
Qualitative Methodology

• Asks the question of “how” instead of “what”
• Occurs in a natural setting with the researcher as the key instrument of measurement
• Researcher is concerned with process as well as product
• Investigates the quality of relationships, activities, situations, or materials
• Emphasis is on details; more holistic approach
• Data are collected in the form of words or pictures rather than numbers
• Data tend to be analyzed inductively

Mixed Methods Research

• Difficult to define
• Examples of Definitions
  – The use of qualitative and quantitative techniques in both the collection and analysis of data
  – Mixed Methods research is given a priority in the research and the integration of both the quantitative and qualitative results occurs at some point in the research process
  – Research that includes both quantitative and qualitative data in a single research study, and either the QUAN or QUAL data provides data that would not otherwise be obtainable when using only the primary method
Research Designs

• Pre- and Post-tests
• Group Comparisons
• One-shot
• Trend Analysis

Qualitative Research Design

Methods/Designs

Participant observation
  – Ethnography
Direct observation
  – Field research
Interviewing
  – Structured and unstructured
Case studies
  – Intensive study of specific individual(s) or context
Research Design

– Observations or measures (O)
  • Test scores, GPA, attitudes, behavior
– Treatment or program (X)
  • Intervention (one-time or over time)
– Groups (vertical)
  • One group, control group, treatment group
– Time (horizontal)
  • Cross-sectional or longitudinal

Type of Research Design

Pre- and Post-tests
(Quasi-experimental)

O   X   O

• Observe
• Introduce treatment
• Observe again
Type of Research Design

Group Comparisons
(Quasi-experimental)

Group 1  O  X  O
Group 2  O  O

– Observe Groups 1 and 2
– Introduce treatment to Group 1 only
– Observe Groups 1 and 2 again

Types of Research Design

One-shot
(Non-experimental)

X  O

• Introduce treatment
• Observe
Types of Research Design

Trend Analysis
(Non-experimental)

- Introduce treatment or no treatment
- Observe at different intervals

Research Methods and Design in Context

Examples of Taking Research from the Basics to the Next Level
Working with ARCC in Context

Purpose of ARCC

- Accountability Reporting for Community Colleges (ARCC)
- To inform the public about overall system performance
- To make policymakers and elected boards aware of system and college performance
- To make local college officials aware of system and college performance
In 2009, there were 8 individual college level ARCC performance indicators

1. Student Progress and Achievement Rate (SPAR)
2. Percent of Students Who Earned at Least 30 Units
3. Persistence Rate
4. Annual Successful Course Completion Rate for Credit Vocational Courses
5. Annual Successful Course Completion Rate for Credit Basic Skills Courses
6. Improvement Rates for Credit ESL Courses
7. Improvement Rates for Credit Basic Skills Courses
8. Career Development and College Preparation Progress and Achievement Rate

The Basics

ARCC
• Trend Analysis
• Compare rates over time and track performance
• Rates are the observations
• Presented to Board and administration
• Printed in Institutional Effectiveness Report
• Used Microsoft Access and Excel
### The Basics

#### ARCC Year-to-Year Comparisons

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SBCC State</td>
<td>SBCC State</td>
<td>SBCC State</td>
</tr>
<tr>
<td>Student Progress and Achievement</td>
<td>57.4% 51.1%</td>
<td>59.4% 51.2%</td>
<td>61.5% 51.8%</td>
</tr>
<tr>
<td>Percent of Students Who Earned at Least 30 Units</td>
<td>69.7% 68.9%</td>
<td>71.4% 70.4%</td>
<td>74.3% 71.2%</td>
</tr>
<tr>
<td>Persistence Rate (Fall to Fall)</td>
<td>68.5% 65.8%</td>
<td>71.6% 68.3%</td>
<td>70.4% 69.2%</td>
</tr>
<tr>
<td>Annual Successful Course Completion Rate for Credit Vocational Courses</td>
<td>76.8% 76.4%</td>
<td>78.6% 78.2%</td>
<td>80.0% 77.7%</td>
</tr>
<tr>
<td>Annual Successful Course Completion Rate for Credit Basic Skills Courses</td>
<td>61.8% 60.3%</td>
<td>62.5% 60.5%</td>
<td>65.7% 60.5%</td>
</tr>
<tr>
<td>Improvement Rate for Credit Basic Skills Courses</td>
<td>57.1% 49.8%</td>
<td>56.6% 50.0%</td>
<td>58.5% 51.2%</td>
</tr>
<tr>
<td>Improvement Rates for Credit ESL Courses</td>
<td>n/a n/a</td>
<td>56.9% 44.7%</td>
<td>59.7% 50.1%</td>
</tr>
</tbody>
</table>

### The Basics

#### ARCC Student Progress and Achievement

<table>
<thead>
<tr>
<th></th>
<th>1999-00 Cohort</th>
<th>2000-01 Cohort</th>
<th>2001-02 Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Cohort Size</td>
<td>2,286</td>
<td></td>
<td>2,307</td>
</tr>
<tr>
<td>Overall Progress/Achievement</td>
<td>1,442</td>
<td>63.1%</td>
<td>1,370</td>
</tr>
<tr>
<td>Degree</td>
<td>1,143</td>
<td>50.0%</td>
<td>1,154</td>
</tr>
<tr>
<td>Certificate</td>
<td>1,143</td>
<td>50.0%</td>
<td>1,154</td>
</tr>
<tr>
<td>Transferred</td>
<td>1,143</td>
<td>50.0%</td>
<td>1,154</td>
</tr>
<tr>
<td>Transfer Directed</td>
<td>1,143</td>
<td>50.0%</td>
<td>1,154</td>
</tr>
<tr>
<td>Transfer Prepared</td>
<td>1,143</td>
<td>50.0%</td>
<td>1,154</td>
</tr>
<tr>
<td>Earned at Least 30 units</td>
<td>1,143</td>
<td>50.0%</td>
<td>1,154</td>
</tr>
</tbody>
</table>
ARCC
The Next Level

- Research Design – group comparisons
- Statistical Techniques – Segmentation Modeling and Logistic Regression
- Identify possible focus areas for the college that might help to improve the ARCC outcomes

Statistical Techniques

- Use segmentation modeling to identify whether similarities and differences exist by the following:
  - Student characteristics
  - Course-taking behavior
  - Utilization of students
- Logistic Regression Models
  - Predicting dichotomous outcomes (e.g.: success/non-success)
  - Used by the Chancellor’s Office to help identify the Accountability Reporting for the Community Colleges (ARCC) peer groups
  - Does not require assumptions of normality, linearity, and equal variances
- Sources
Research at Chaffey Examining Behavior and Background Variables that Impact the ARCC Outcome Measures

- Background Variables Loaded into Models
  - Ethnicity
  - Gender
  - Age
  - Education Goal

- Predictor Variables (Sampling)
  - Full-time or part-time student status
  - Number of degree applicable units earned
  - Whether or not student was assessed
  - Whether or not student was assessed prior to first start date
  - English, reading, and math placement levels
  - Number of times student met prerequisite
  - Saw a counselor in the first term
  - Number of time student saw a counselor
  - Accessed Success Center in first-term
  - Number of times accessed Success Center
  - Number of times accessed Success Center during six year period

Successful Student Behaviors
Students are more likely to be successful if they:

- Assessing prior to the student’s first start date
- Seeing a counselor on a consistent and regular basis
- Following placement recommendations or successfully completing the prerequisite course
- Accessing the Success Centers on a regular basis
- Utilizing Supplemental Instruction
- Successfully completing transfer level English and math within three years of the student’s first enrollment at Chaffey

- Assessing prior to the student’s first start date
- Seeing a counselor on a consistent and regular basis
- Following placement recommendations or successfully completing the prerequisite course
- Accessing the Success Centers on a regular basis
- Utilizing Supplemental Instruction
- Placing into MATH-410 (i.e. elementary algebra) or higher

- Assessing prior to the student’s first start date
- Seeing a counselor on a consistent and regular basis
- Following placement recommendations or successfully completing the prerequisite course
- Accessing the Success Centers on a regular basis
- Utilizing Supplemental Instruction
- Placing into MATH-520 (i.e. Pre-Algebra) or higher
- Having an informed goal to transfer
Segmentation Modeling

- Based on the principle of binary recursive partitioning
  - Where the dependent variable (i.e. success and non-success) are examined for all possible splits of the data at each step of the tree-building process to find the split that most effectively separates the dependent variable into homogeneous groups until it is not possible to continue
- The model attempts to maximize the number of students who are correctly classified as successes and those who are correctly classified as non-successes.
- Very similar to logistic regression
- Benefit of segmentation modeling
  - Allows the identification of groups within groups
Segmentation Modeling

- PASW Decision Trees 17
- $599.00
Students who saw a counselor in their first semester at Chaffey were statistically significantly more likely to improve in basic skills English/reading, math, and ESL.

Students who see a counselor on a consistent basis during a three year period (2005-2006 to 2007-2008) are statistically significantly more likely to improve in basic skills English/reading, math, and ESL.
Students who met a prerequisite in English, math, and ESL at least once are statistically significantly more likely to earn 30 or more units.

Chaffey College Success Center Directed Learning Activity (DLA) Students Compared to Chaffey College Students using the 2002-2003 to 2007-2008 ARCC Data

First-time college students who have primarily generated DLA hours in a success center for at least one section are statistically significantly more likely to earn 30 or more units, be transfer prepared, and earn a degree, than first-time college students who did not primarily generate DLA hours in a success center.
First-time college students who utilized SI are statistically significantly more likely to earn 30 or more units, be transfer prepared, earn a degree, transfer, and achieve one of the ARCC 1 indicators than first-time college students who did not use SI.

First-time college student-athletes are statistically significantly more likely to earn 30 or more units, be transfer prepared, earn a degree, transfer, and achieve one of the ARCC 1 indicators than first-time college students who are not student-athletes.
Demonstration

Working with ARCC Cohort Data
(Merging in Student Cohorts)

Working with SLOs in Context
The Basics

SLOs
• One-shot
• Course is the treatment
• SLO performance is the observation
• Course data provided to department chairs
• Committee reviewed ISLO data
• Used Microsoft Excel to summarize data from website that collected data

The Basics

Overall Course SLO Success

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above Standard</td>
<td>15,000</td>
<td>50.0%</td>
</tr>
<tr>
<td>Meets Standard</td>
<td>10,000</td>
<td>33.3%</td>
</tr>
<tr>
<td>Below Standard</td>
<td>3,000</td>
<td>10.0%</td>
</tr>
<tr>
<td>Did Not Complete Course</td>
<td>1,500</td>
<td>5.0%</td>
</tr>
<tr>
<td>No Score</td>
<td>500</td>
<td>1.7%</td>
</tr>
<tr>
<td>Total</td>
<td>30,000</td>
<td></td>
</tr>
</tbody>
</table>

83.3% Total Percent Meeting Standard
## The Basics

### Overall ISLO Success

<table>
<thead>
<tr>
<th>Area</th>
<th>Above Standard</th>
<th>Meets Standard</th>
<th>Below Standard</th>
<th>Did Not Complete</th>
<th>No Score</th>
<th>Total Meeting the Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Critical Thinking</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>15%</td>
<td>10%</td>
<td>75%</td>
</tr>
<tr>
<td>II. Communication</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>15%</td>
<td>10%</td>
<td>75%</td>
</tr>
<tr>
<td>III. Quantitative Analysis</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>15%</td>
<td>10%</td>
<td>75%</td>
</tr>
<tr>
<td>IV. Aesthetic Perspectives</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>15%</td>
<td>10%</td>
<td>75%</td>
</tr>
<tr>
<td>V. Information Literacy</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>15%</td>
<td>10%</td>
<td>75%</td>
</tr>
<tr>
<td>VI. Personal Development</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>15%</td>
<td>10%</td>
<td>75%</td>
</tr>
</tbody>
</table>

### Detailed Course SLO Success

<table>
<thead>
<tr>
<th>DEPT</th>
<th>COURSE</th>
<th>SLO</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Above Standard</td>
</tr>
<tr>
<td>HARU</td>
<td>HARU 101</td>
<td>Diversity</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Problem-solving</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Team building</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Theory</td>
<td>10%</td>
</tr>
<tr>
<td>HARU</td>
<td>HARU 102</td>
<td>Organization</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identity</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Interview</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group Work</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Presentation</td>
<td>35%</td>
</tr>
</tbody>
</table>
The Next Level: Limitations of Statistical Significance Testing

- Tests of statistical significance are not enough
  - Greatly influenced by sample size (mean = 10.0; 10.1)
  - Do not speak to the magnitude of the difference
- Effect Size as measure of practical significance
  - Unstandardized
  - Standardized ($d, r$)
    - Cohen’s conventions: $d = .20$ – small; $.50$ – moderate; $.80$ – large
    - Discipline specific
      - Aspirin Example (Rosenthal & Dimateo, 2002)

Statistical Significance

N = 1378

<table>
<thead>
<tr>
<th>Question Item</th>
<th>Statistically Significant?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Yes</td>
</tr>
<tr>
<td>Q2</td>
<td>Yes</td>
</tr>
<tr>
<td>Q3</td>
<td>Yes</td>
</tr>
<tr>
<td>Q4</td>
<td>Yes</td>
</tr>
<tr>
<td>Q5</td>
<td>Yes</td>
</tr>
<tr>
<td>Q6</td>
<td>Yes</td>
</tr>
<tr>
<td>Q7</td>
<td>Yes</td>
</tr>
<tr>
<td>Q8</td>
<td>Yes</td>
</tr>
<tr>
<td>Q9</td>
<td>Yes</td>
</tr>
<tr>
<td>Overall (Avg.)</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Effect Size (unstandardized)

**N = 1378**

<table>
<thead>
<tr>
<th>Question Item</th>
<th>Number Correct Pre-Test</th>
<th>Number Correct Post-Test</th>
<th>Statistically Significant?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>1199</td>
<td>1294</td>
<td>Yes</td>
</tr>
<tr>
<td>Q2</td>
<td>1144</td>
<td>1224</td>
<td>Yes</td>
</tr>
<tr>
<td>Q3</td>
<td>1101</td>
<td>1128</td>
<td>Yes</td>
</tr>
<tr>
<td>Q4</td>
<td>1056</td>
<td>1174</td>
<td>Yes</td>
</tr>
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<td>Q5</td>
<td>944</td>
<td>834</td>
<td>Yes</td>
</tr>
<tr>
<td>Q6</td>
<td>1117</td>
<td>1233</td>
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<tr>
<td>Q7</td>
<td>1166</td>
<td>1227</td>
<td>Yes</td>
</tr>
<tr>
<td>Q8</td>
<td>872</td>
<td>1015</td>
<td>Yes</td>
</tr>
<tr>
<td>Q9</td>
<td>1031</td>
<td>1193</td>
<td>Yes</td>
</tr>
<tr>
<td>Overall (Avg.)</td>
<td>6.99</td>
<td>7.49</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Effect Size (standardized)

**N = 1378**

<table>
<thead>
<tr>
<th>Question Item</th>
<th>Number Correct Pre-Test</th>
<th>Number Correct Post-Test</th>
<th>Statistically Significant?</th>
<th>Effect Size (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>1199</td>
<td>1294</td>
<td>Yes</td>
<td>.23</td>
</tr>
<tr>
<td>Q2</td>
<td>1144</td>
<td>1224</td>
<td>Yes</td>
<td>.17</td>
</tr>
<tr>
<td>Q3</td>
<td>1101</td>
<td>1128</td>
<td>Yes</td>
<td>.05</td>
</tr>
<tr>
<td>Q4</td>
<td>1056</td>
<td>1174</td>
<td>Yes</td>
<td>.22</td>
</tr>
<tr>
<td>Q5</td>
<td>944</td>
<td>834</td>
<td>Yes</td>
<td>-.17</td>
</tr>
<tr>
<td>Q6</td>
<td>1117</td>
<td>1233</td>
<td>Yes</td>
<td>.24</td>
</tr>
<tr>
<td>Q7</td>
<td>1166</td>
<td>1227</td>
<td>Yes</td>
<td>.13</td>
</tr>
<tr>
<td>Q8</td>
<td>872</td>
<td>1015</td>
<td>Yes</td>
<td>.22</td>
</tr>
<tr>
<td>Q9</td>
<td>1031</td>
<td>1193</td>
<td>Yes</td>
<td>.30</td>
</tr>
<tr>
<td>Overall (Avg.)</td>
<td>6.99</td>
<td>7.49</td>
<td>Yes</td>
<td>.31</td>
</tr>
</tbody>
</table>
Effect Size Interpretation

- Cohen’s Conventions (Cohen, 1988)
- Proportion of Distribution Overlap (Cohen, 1988)
- BESD (Rosenthal & Rubin, 1982)
- Confidence Intervals

Effect Size Tools

- ES Calculator
  - http://mason.gmu.edu/~dwilsonb/ma.html
- ES with Confidence Intervals
SLOs – The Next Level
(Pre-Post Example)

• In the Fall 2008 semester Counseling instructors in three GUID-3, Career Exploration and Planning, sections engaged in an initial exploration of the following three Student Learning Outcomes
  – SLO Number 41 – Students are actively pursuing their educational and/or career goals.
  – SLO Number 67 - Students value, appreciate, and effectively use technology to research, plan, and pursue their educational and career goals.
  – SLO Number 81 – Students in GUID-3 will be able to engage in critical thinking.

Program Evaluation in Context
The Basics

Program Evaluation
• Group comparisons (users and non-users)
• Treatment is the use of services
• Observation is successful course completion
• Used by program faculty, board and administration to determine program effectiveness
• Used Microsoft Access and Excel

Successful Course Completion
All Students

[Bar chart showing successful course completion rates for Non-Users and Writing Center Users across different semesters: Fall 2006, Spring 2007, Fall 2007, Spring 2008]
Successful Course Completion
Basic Skills Writing Classes

Course Success for Math Lab Users
Next Level – Program Evaluation

**Supplemental Instruction (SI) Implementation**
- Fall 2005 – 6 Faculty and 6 Courses
- Spring 2006 – 12 Faculty and 13 Courses
- Summer 2006 – 6 Faculty and 6 Courses
- Fall 2006 – 17 Faculty and 24 Courses
- Spring 2007 – 17 Faculty and 22 Courses
- Summer 2007 – 6 Faculty and 7 Courses
- Fall 2007 – 22 Faculty and 30 Courses
- Spring 2008 – 26 Faculty and 18 Courses

**SI Participation – Fall 2005 to Spring 2008 (Group Comparison)**

- SI has served 2,186 students from Fall 2005 to Spring 2008
- 435 or 20% of these students have utilized SI for two or more sections
## Success by SI Utilization and Subject

### Success Rate (Fall 2005 to Spring 2008)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Did Not Use SI</th>
<th>1 SI Session Only</th>
<th>2 or More SI Session</th>
<th>Two or More Sessions with Did Not Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>#</td>
<td>N</td>
<td>%</td>
<td>#</td>
</tr>
<tr>
<td>ASTRON-35</td>
<td>32</td>
<td>56</td>
<td>57.1</td>
<td>5</td>
</tr>
<tr>
<td>Total Biology</td>
<td>146</td>
<td>345</td>
<td>42.6</td>
<td>30</td>
</tr>
<tr>
<td>Total Chemistry</td>
<td>610</td>
<td>1,178</td>
<td>51.8</td>
<td>118</td>
</tr>
<tr>
<td>Total Earth Science</td>
<td>109</td>
<td>183</td>
<td>59.6</td>
<td>14</td>
</tr>
<tr>
<td>Total Geology</td>
<td>42</td>
<td>64</td>
<td>65.6</td>
<td>13</td>
</tr>
<tr>
<td>Total Math</td>
<td>1,405</td>
<td>2,799</td>
<td>50.2</td>
<td>206</td>
</tr>
<tr>
<td>Total Physics</td>
<td>84</td>
<td>130</td>
<td>64.6</td>
<td>15</td>
</tr>
<tr>
<td>Grand Total</td>
<td>2,398</td>
<td>4,493</td>
<td>51.0</td>
<td>458</td>
</tr>
</tbody>
</table>

- **ES**: Effect Size
- **P Value**: Probability Value

### Diagram

A bar chart illustrating the success rates by SI utilization and subject (Fall 2005 to Spring 2008). The chart shows the percentage of students who succeeded in different subjects based on the number of SI sessions they utilized. The subjects include Biology, Chemistry, Earth Science, Geology, Math, and Physics.
First-time college students who utilized SI are statistically significantly more likely to earn 30 or more units, be transfer prepared, earn a degree, transfer, and achieve one of the ARCC 1 indicators than first-time college students who did not use SI.

Spring 2008 Sample of Student Comments about SI Leaders

- I am very glad the school offers SI Leaders they have been a life saver.
- I’m really glad I chose to attend the SI Sessions this semester. It has greatly enhanced my understanding for my weakest subject. My SI Leader was very good and I hope to have one just as great as him next semester.
Working with Qualitative Analysis in Context

The Basics

**Qualitative Survey**
- Telephone interviews were conducted
- Targeted fall students who did not register for subsequent spring semester
- Purpose to discover most common reasons for students not to return
- Requested by planning committee and results shared collegewide
- Used Microsoft Access and Excel
The Basics

Qualitative Survey
Top five reasons cited for not returning:
- 27% - Started a new job or working more hours
- 21% - Problems getting the classes they wanted
- 17% - Decided not to go to college
- 15% - Attending a university
- 13% - Didn’t have the money

Supplemental Quantitative Data
- Success rate among those students who returned for the Spring 2005 semester was 75%; same figure for those students who did not return was 50%.
- Average term GPA for students who returned was 2.80; and for students who did not return it was 2.22.
- Only five percent of students who returned had a GPA less than 0.5; among students who did not return, this percentage was 23 percent.
- 56% of the students who did not return were enrolled in less than 6 units, compared to 27% of those who did return.
The Basics

Open-Ended Comments
• 107 students offered general comments about their experience at Oxnard College
• Most common responses:
  – Oxnard College was a good school with great teachers and great classes (29%)
  – Enjoyed their time at Oxnard College (24%)
  – Problems related to financial aid, a particular instructor or counselor (17%)

Advantages of Qualitative Data

• Data Collection Not Constrained by Pre-Defined Categories
• Ability to Capture and Obtain Insight About Unanticipated Responses
Qualitative Process

- Inductive Process
- Segmenting Data (maintain master list)
- Intra-coder Reliability
- Inductive and a Priori Codes
- Co-occurring Categories

- => Iterative Process

Qualitative Analysis:
Sample Response

**Question:** What are some specific problems at your campus needing action?

**Answer:** “Each department has stereotypes of the other departments and there are too many signatures required.”
Activity

Categorizing open-ended responses

Utilizing Open-Ended Survey Data

Text Analysis: A Practical Example

- Cost is $1,299
- [Link](http://www.spss.com/stores/1/PASW_reg_Text_Analytics_for_S_P1193C3.cfm)
Working with Satisfaction Surveys in Context

The Basics

Satisfaction Survey
- One-shot
- Treatment is participation in program
- Survey is the observation
- Often used to determine program effectiveness
- Descriptive information is provided and is often positive
The Next Level – Mixed Methods Research

Why is Mixed Methods (MM) Research Valuable?
• Answers questions that other modalities cannot
• Provides a deeper understanding of the examined behavior or a better idea of the meaning behind what is occurring
• The inferences made with mixed methods research can be stronger
• Mixed methods research allows for more divergent findings
• MM research can include culture in the design by giving a voice to everyone involved in the behavior being examined


Insuring that MM Findings are Relevant
• Include stakeholders in the planning of the research
• Using MM research design may help a wider range of audiences connect to the material
• Make sure to define the language used in the report
• It is important to decide how the MM research findings are going to be written: combined or separately
The Next Level: Factor Analysis

Overview

• Surveys inquire about an assortment of program facets
  – Wait times
  – Websites
  – Quality of information offered

• But to what extent do such analyses reveal what students care about most?

The Next Level: Factor Analysis

Chaffey College: Student Services Satisfaction Survey

• Survey distributed via two points of dissemination:
  – Course level
  – Program level

• Stratified random sampling was conducted to identify sections

• Each identified section was randomly assigned to one of the twelve student services programs

• 1,301 completed forms, but 407 included in current analysis (listwise deletion)
The Next Level: Factor Analysis

**Factor Analysis**
- Uncover the underlying dimensions of a set of items
- Reduce the number of items
- Two Types:
  - Exploratory (PCA vs. PAF)
  - Confirmatory

The Next Level: Factor Analysis

**Factor Analysis: Step-by-Step**
- Assumptions
  - Sample size
  - Kaiser-Meyer-Olkin (KMO)
  - Bartlett’s Test of Sphericity

- Communalities
  - Initial vs. extracted
The Next Level: Factor Analysis

Factor Analysis: Step-by-Step
Determining the Number of Factors
- Observed Eigenvalues (Kaiser Criterion)
- Scree plot
- Overdetermined Factors
- Parallel Analysis
- Interpretability of Factors

Rotation (Varimax & Oblique)
- Infinite Number of Rotations Possible (seek simple structure)

Factor loadings
- Pattern (Partial Correlations) and Structure Matrices (Zero-Order Correlations)

Factor Correlation Matrix
- High Correlations Point to Higher Order Factors
The Next Level: Factor Analysis

Implications of Employing FA
• Findings highlight what matters most to students – facilitates informed decision making
• Factor Scores
• Findings point to possible AUOs

Building Relationships through Research

Researchers’ Role as Data Coaches and in Building a Culture of Evidence
Relationships and Setting the Stage for Evidence-Based Decision-Making

- Leadership
- Climate
- Continuity
- Transparency
- Evidence
- Relationships are key to building and sustaining a culture of evidence

Working with Faculty on Program Evaluation

- Researchers need to understand the program/project
- Project/program leaders need to understand demands on researcher
- Develop Evaluation Plan together
- Researcher is seen as a member of the team
- Ongoing relationship is key to ongoing success of the evaluation
Program Evaluation –
Balance between Reality and Rigor

- First identify data already being collected
- Data collection should not place an undue burden on the program/project
- Use direct measures whenever possible and reasonable
- Ensure that collected data are actually measuring what intended to assess
- Requires conversation between program/project leaders and researcher to achieve a suitable balance

Role of the Researcher

DO:
- Provide options for assessment methods
- Share knowledge of data already available
- Facilitate accurate data interpretation
- Listen

DON’T:
- Dictate data to be used
- Advocate changing program/project to fit data
Advice for Working with Faculty, Administrators, Staff & Students

• Know your audience
• Start discussion with what they want to know
• Decide on data collection BEFORE implementation, if possible
• Be flexible, open and available
• Be involved, invested and stay informed
• Work together as partners
• Make data and research their friends
• Understand your communication style and how other might perceive you (i.e. True Colors activity)

Thank you!
OXNARD COLLEGE RESEARCH BRIEF
Why Students Did Not Return
Survey Results

INTRODUCTION
After experiencing declines in enrollment for two years in a row, the College was at a loss as to the reasons behind the decline. As a result, the College’s Office of Institutional Research was asked by the Planning and Consultation Council to conduct a survey of students who had not returned to the College.

A total of 2,884 students were identified as having attended Oxnard College in Fall 2004, but did not return for Spring 2005. Of these 2,884 students, 409 were found to be attending Ventura or Moorpark College in Spring 2005.

It was decided that the survey would best be conducted via telephone interviews and current OC students were hired to make the calls. It was also decided that we would attempt to call all 2,884 students not knowing how many of the telephone numbers would be invalid. With a random sample, the risk was too high to take the chance of reaching too many invalid telephone numbers.

SURVEY INSTRUMENT
The survey instrument was designed by a team including the director of institutional research, academic senate president, and Associated Students Government president. To increase the likelihood of people’s willingness to participate, the survey consisted of only three questions:
1. What is your reason for not returning to Oxnard College in Spring 2005?
2. How likely are you to return to Oxnard College in Summer and/or Fall 2005?
3. Do you have any comments you would like to share about Oxnard College?

For the first question, respondents were presented with a list of possible reasons, but were encouraged to give any and all reasons for their absence.

The survey instrument used for those students who were attending Moorpark or Ventura College was the same in design, but with slight differences in the list of reasons for not returning and an additional question asking the likelihood of their return to Moorpark or Ventura College.

In those cases where a message was left or there was no answer, three attempts were made to contact the student. If none of the attempts resulted in a contact with the student, the result of the third attempt is the final result. The message left for students stated that the College had noticed they had not attended in Spring 2005 and encouraged them to return to Oxnard College.

The results from the survey will be presented in this report separately for the group of students who did not return to college in Spring 2005 (Overall) and for the group who attended Moorpark or Ventura College in Spring 2005 (MC/VC).

CALL RESULTS – OVERALL
Calls were made to all 2,475 students in the overall group between April and July of 2005. A total of 594 students completed the survey, representing a response rate of 24%. The highest proportion of the calls made resulted in reaching a wrong number (34%). All the call results are presented in the table below.

<table>
<thead>
<tr>
<th>Reason</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong Number</td>
<td>844</td>
<td>34%</td>
</tr>
<tr>
<td>Left Message</td>
<td>624</td>
<td>25%</td>
</tr>
<tr>
<td>Completed Survey</td>
<td>594</td>
<td>24%</td>
</tr>
<tr>
<td>No Answer</td>
<td>321</td>
<td>13%</td>
</tr>
<tr>
<td>Refused Participation</td>
<td>92</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,475</td>
<td></td>
</tr>
</tbody>
</table>

REASONS FOR NOT RETURNING – OVERALL
The reason most often given for not returning to the College was work, with 27% of respondents indicated they had either started a new job or were working more hours.

Rounding out the top five reasons cited for not returning:
- 21% - Problems with getting the classes they wanted
- 17% - Decided not to go to college
- 15% - Attending a university
- 13% - Didn’t have the money

It is worth noting that some of the reasons given by students for not returning were positive, as in the case of the 87 students who had moved on to a university, the 15 students who had graduated from Oxnard College, and the 13 students who had completed their transfer requirements.

It is also important to note that 28 students had chosen to attend another community college either in Spring and/or Summer 2005. Of these 28 students, eight chose Ventura College, four chose Moorpark College, eight were attending a community college outside the district, and four were attending a trade/technical school.

HOW LIKELY TO RETURN – OVERALL
The most common response when asked the likelihood of their attending Oxnard College in Summer 2005 was “Not Likely” with 21%. Only 22% of students were “Likely” or “Very Likely” to attend in the summer. Unfortunately, 44% of respondents did not provide an answer to this question.

When asked about returning for the Fall 2005 term, the results are more encouraging. The most common response was “Very Likely” (31%), with an additional seven percent indicating it was “ Likely.”
GENERAL COMMENTS – OVERALL
A total of 107 students offered general comments about their experience at Oxnard College. Most common among the general comments was that Oxnard College was a good school with great teachers and great classes (29%). Another 24% said they had enjoyed their time at Oxnard College. However, a few students did cite problems related to financial aid, a particular instructor or counselor (17%).

CALL RESULTS – MC/VC
Between June and August of 2005, calls were made to all 409 students who did not return to Oxnard, but attended Moorpark or Ventura College in Spring 2005. A total of 100 students completed the survey, representing a response rate of 24%. The highest proportion of these calls results in leaving a message for the student (39%). All the call results are presented in the table below.

<table>
<thead>
<tr>
<th>Reason for Call</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left Message</td>
<td>160</td>
<td>39%</td>
</tr>
<tr>
<td>Wrong Number</td>
<td>110</td>
<td>27%</td>
</tr>
<tr>
<td>Completed Survey</td>
<td>100</td>
<td>24%</td>
</tr>
<tr>
<td>No Answer</td>
<td>35</td>
<td>9%</td>
</tr>
<tr>
<td>Refused Participation</td>
<td>4</td>
<td>1%</td>
</tr>
<tr>
<td>Total</td>
<td>409</td>
<td></td>
</tr>
</tbody>
</table>

REASONS FOR NOT RETURNING – MC/VC
The reason most often given for not returning to Oxnard College was Moorpark or Ventura College was closer to home, with 33% of respondents. The second most common reason given was that the classes they wanted were not offered at Oxnard College (19%).

Another common reason cited related to specialized programs at the college. Ten percent cited programs only offered at Moorpark or Ventura College such as nursing or criminology and another six percent indicated they had only attended Oxnard College for the fire technology program, but were completing their other coursework at Moorpark College.

Two other responses worth noting are the nine percent citing that Ventura College had more to offer than Oxnard College in the way of courses and programs and the eight percent citing the absence of student life at Oxnard College.

HOW LIKELY TO RETURN – MC/VC
When asked about attending Oxnard College in Summer 2005, most respondents indicated it was “Not Likely” (36%), with only 13% indicating the chance was “Very Likely” or “Likely.” Unfortunately, 42% of respondents did not respond to this question.

Students were then asked about the likelihood of them returning to Moorpark or Ventura College in summer 2005. The most common response was “Very Likely” with 34%, and another seven percent indicating “Likely.”

GENERAL COMMENTS – MC/VC
Forty-nine of the 100 survey respondents offered general comments about Oxnard College. Of these comments the most common response was that they liked Oxnard College and had no problems with the college, and some even indicated they preferred Oxnard College (31%). Another 14% offered suggestions on courses and programs that should be offered at Oxnard College such as more online courses, more computers courses, and programs in criminology and photography.

WHAT ROLE DOES ACADEMIC PERFORMANCE PLAY?
When asked why they stopped attending school people are more likely to cite reasons related to external factors such as the ones presented here (e.g., work, couldn’t get classes, etc.). People are more reluctant to admit that the reason for not returning may be related to something internal like their academic performance. For this reason, poor academic performance was not listed as one of the options on the instrument. However, when the academic performance of those students who did not return is compared to students who did return, interesting differences are found.

Success for the purposes of this analysis is defined as the percentage of students who earned an A, B, C or CR in their courses. The success rate among those students who returned for the Spring 2005 semester was 75%. This same figure for those students who did not return was 50%. In addition, the withdrawal and unsuccessful rates were significantly higher among those students not returning.

Similar differences are seen with GPA. The average term GPA for those students who returned was 2.80; and for students who did not return it was 2.22. In addition, only five percent of students who returned had a GPA less than 0.5. Among students who did not return, this percentage was 23 percent. Also of note is that 56% of the students who did not return were enrolled in less than 6 units, compared to 27% of those who did return.

These differences are considerable and seem to indicate that poor academic performance, although not cited as a reason by students, may play a more significant factor in a student’s decision to return to school. However, it is worth noting that 48% of students not returning had term GPAs at or above 3.0. Perhaps for these students, their reasons for not returning are more related to external factors, but for those students who are having academic difficulties, their poor performance may have contributed to their decision not to return in addition to the external factors they cite.

SUMMARY
While students participating in the survey most commonly cite work as the reason why they did not return to school, when data on academic performance is examined, the results indicate that students who have academic difficulties are less likely to return. Hopefully, the information from this survey and the data related to academic performance will help to inform the college’s future efforts to improve student retention and persistence.