

Taking Research from the Basics to the Next Level: Research Methods and Design in Context for IR Offices

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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

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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

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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

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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)

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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

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Research Methods and Design

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Methodology

- Quasi-Experimental
- Qualitative
- Mixed Methods

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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

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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

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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

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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

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Research Designs

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

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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

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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

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Type of Research Design

Pre- and Post-tests
(Quasi-experimental)

O X O

- Observe
- Introduce treatment
- Observe again

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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

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Types of Research Design

One-shot

(Non-experimental)

X O

- Introduce treatment
- Observe

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Types of Research Design

Trend Analysis

(Non-experimental)



- Introduce treatment or no treatment
- Observe at different intervals

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Research Methods and Design in Context

Examples of Taking Research
from the Basics to the Next Level

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Working with ARCC in Context

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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

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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

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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

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The Basics

ARCC Year-to-Year Comparisons

	2007 Report		2008 Report		2009 Report	
	SBCC	State	SBCC	State	SBCC	State
Student Progress and Achievement	57.4%	51.1%	59.4%	51.2%	61.5%	51.8%
Percent of Students Who Earned at Least 30 Units	69.7%	68.9%	71.4%	70.4%	74.3%	71.2%
Persistence Rate (Fall to Fall)	68.5%	65.8%	71.6%	68.3%	70.4%	69.2%
Annual Successful Course Completion Rate for Credit Vocational Courses	76.8%	76.4%	78.6%	78.2%	80.0%	77.7%
Annual Successful Course Completion Rate for Credit Basic Skills Courses	61.8%	60.3%	62.5%	60.5%	65.7%	60.5%
Improvement Rate for Credit Basic Skills Courses	57.1%	49.8%	56.6%	50.0%	58.5%	51.2%
Improvement Rates for Credit ESL Courses	n/a	n/a	56.9%	44.7%	59.7%	50.1%

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The Basics

ARCC Student Progress and Achievement

	1999-00 Cohort		2000-01 Cohort		2001-02 Cohort	
	N	%	N	%	N	%
Cohort Size	2,286		2,307		2,489	
Overall Progress/Achievement	1,442	63.1%	1,370	59.4%	1,479	59.4%
Degree	1,143	50.0%	1,154	50.0%	1,245	50.0%
Certificate	1,143	50.0%	1,154	50.0%	1,245	50.0%
Transferred	1,143	50.0%	1,154	50.0%	1,245	50.0%
Transfer Directed	1,143	50.0%	1,154	50.0%	1,245	50.0%
Transfer Prepared	1,143	50.0%	1,154	50.0%	1,245	50.0%
Earned at Least 30 units	1,143	50.0%	1,154	50.0%	1,245	50.0%

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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

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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
 - Wetstein, M. (2009, April). Multivariate Models of Success. PowerPoint presentation at the RP/CISOA Conference, Tahoe City, CA. Retrieved June 13, 2009 from <http://www.rpgroup.org/events/09RPCConference.html>
 - Wurtz, K. (2009). A methodology for generating placement rules that utilizes logistic regression. *Journal of Applied Research in the Community College*, 16, 52-58.

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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

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Successful Student Behaviors

Students are more likely to be successful if they:

- | | | |
|--|--|---|
| <ul style="list-style-type: none"> •2005-2006 <ul style="list-style-type: none"> – 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 | <ul style="list-style-type: none"> •2006-2007 <ul style="list-style-type: none"> – 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 | <ul style="list-style-type: none"> •2007-2008 <ul style="list-style-type: none"> – Seeing a counselor on a consistent and regular basis – Following placement recommendations or successfully completing the prerequisite course – Accessing a Success Center in the first term that a student earns a grade on record at Chaffey – Accessing the Success Centers on a regular basis – Using Supplemental Instruction – Placing into MATH-520 (i.e. Pre-Algebra) or higher – Having an informed goal to transfer |
|--|--|---|

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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

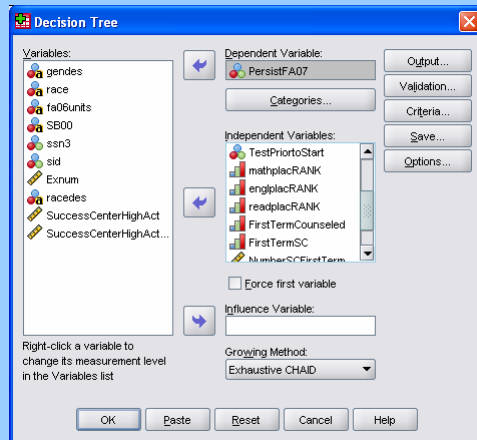
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Segmentation Modeling

The screenshot shows the PASW Statistics Data Editor interface. The main window displays a data table with 15 rows and 5 columns: 'gendes', 'race', 'PersistFA07', 'SB00', and 'ssn3'. The 'PersistFA07' column is highlighted, and the 'Classify' menu is open, showing options like 'TwoStep Cluster...', 'K-Means Cluster...', 'Hierarchical Cluster...', 'Tree...', 'Discriminant...', and 'Nearest Neighbor...'. The 'Tree...' option is selected.

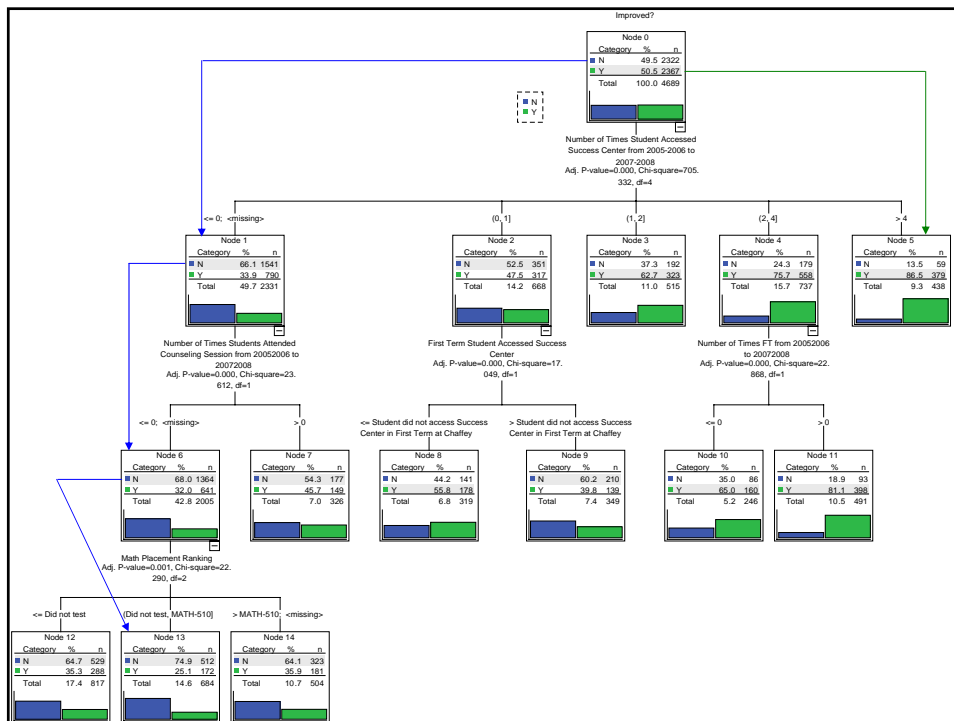
	gendes	race	PersistFA07	SB00	ssn3	sid	Info
1	Male	H.	0	008606387	8606387	262229	
2	Male	H.	1	008663438	8663438	138653	
3	Female	W.	1	008663593	8663593	298857	
4	Male	H.	1	009003626	9003626	.	
5	Unknown	X.	1	016700035	16700035	508043	
6	Female	H.	1	026701109	26701109	508381	
7	Female	X.	1	039582693	39582693	499556	
8	Male	W.	9	45585609	45585609	513669	
9	Female	W.	4	46667411	46667411	504395	
10	Female	B.	5	52340062	52340062	511859	
11	Male	W.	7	78381975	78381975	494299	
12	Female	W.	8	80789937	80789937	510462	
13	Female	B.	9	96745352	96745352	510773	
14	Female	H.	9	97743549	97743549	504449	
15	Male	W.	0	097748715	97748715	510353	

Segmentation Modeling

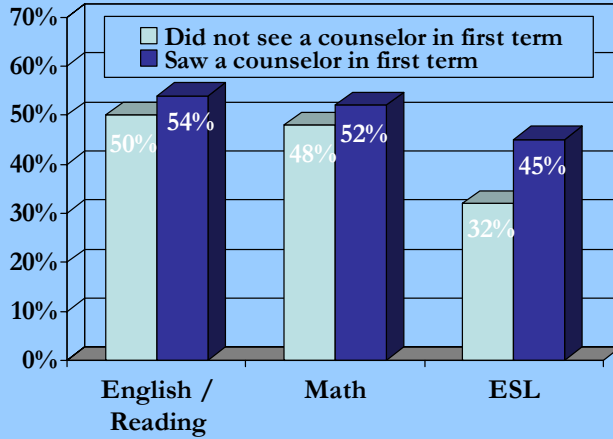


- PASW Decision Trees 17
- \$599.00
- http://www.spss.com/stores/1/PASW_Ddecision_Trees_trade_17_P524C83.cfm

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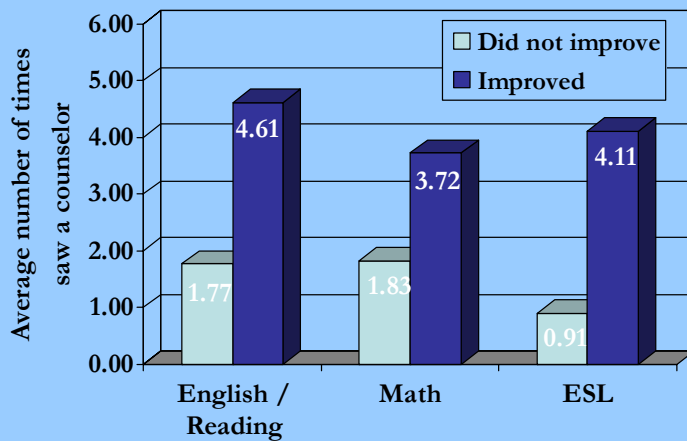


Students who saw a counselor in their first semester at Chaffey were statistically significantly more likely to improve in basic skills English/reading, math, and ESL



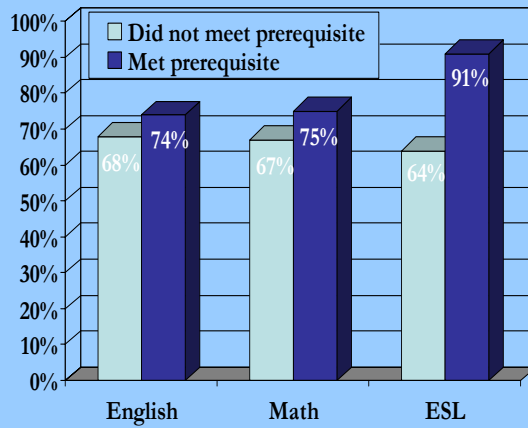
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Students who see a counselor on a consistent basis during a three year period (2005-2006 to 2007-2008) are statistically significantly more likely to improve in basic skills English/reading, math, and ESL



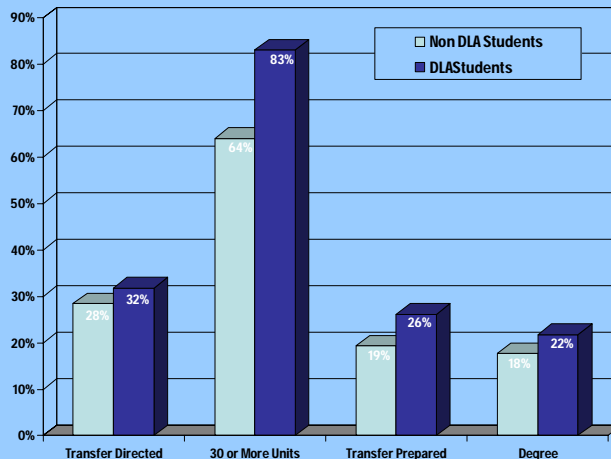
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Students who met a prerequisite in English, math, and ESL at least once are statistically significantly more likely to earn 30 or more units



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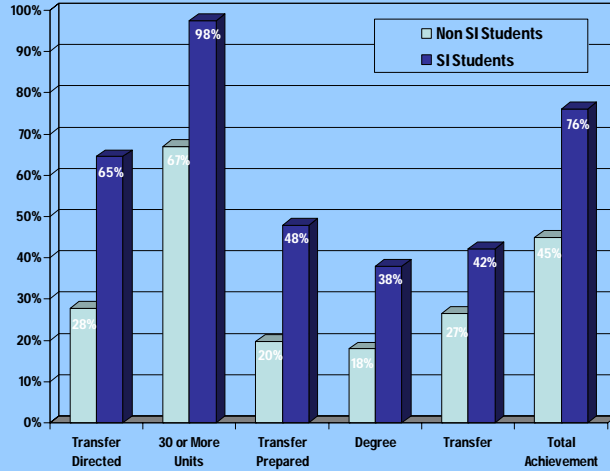
Chaffey College Success Center Directed Learning Activity (DLA) Students Compared to Chaffey College Students using the 2002-2003 to 2007-2008 ARCC Data



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.

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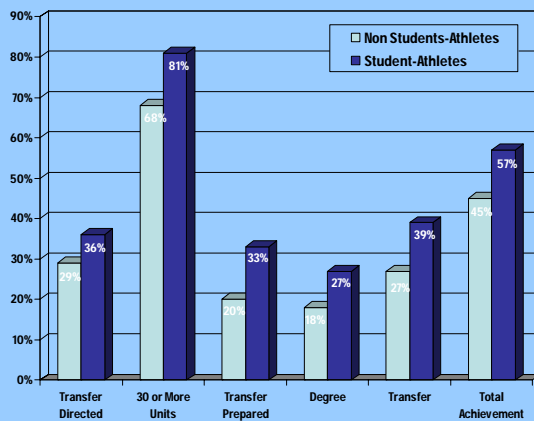
Chaffey College SI Students Compared to Chaffey College Students using the 2002-2003 to 2007-2008 ARCC Data



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.

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Chaffey College Student-Athletes Compared to Chaffey College Students using the 2002-2003 to 2007-2008 ARCC Data



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.

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Demonstration

Working with ARCC Cohort Data
(Merging in Student Cohorts)

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Working with
SLOs in Context

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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

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The Basics

Overall Course SLO Success

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

83.3% Total Percent Meeting Standard

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The Basics

Overall ISLO Success

	Above Standard	Meets Standard	Below Standard	Did Not Complete	No Score	Total Meeting the Standard
I. Critical Thinking	25%	25%	25%	15%	10%	75%
II. Communication	25%	25%	25%	15%	10%	75%
III. Quantitative Analysis	25%	25%	25%	15%	10%	75%
IV. Aesthetic Perspectives	25%	25%	25%	15%	10%	75%
V. Information Literacy	25%	25%	25%	15%	10%	75%
VI. Personal Development	25%	25%	25%	15%	10%	75%

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The Basics

Detailed Course SLO Success

DEPT	COURSE	SLO	PERCENT				
			Above Standard	Meets Standard	Below Standard	Did Not Complete	No Score
HARU	HARU 101	Diversity	20%	65%	10%	5%	
		Problem-solving	30%	60%	5%	5%	
		Team building	30%	50%	15%	5%	
		Theory	10%	60%	25%	5%	
	HARU 102	Organization	60%	20%	5%	10%	
		Identity	40%	20%	20%	20%	
		Interview	25%	50%	15%	10%	
		Group Work	50%	25%	5%	20%	
		Presentation	35%	40%	10%	15%	

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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)

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Statistical Significance

N = 1378

Question Item	Statistically Significant?
Q1	Yes
Q2	Yes
Q3	Yes
Q4	Yes
Q5	Yes
Q6	Yes
Q7	Yes
Q8	Yes
Q9	Yes
Overall (Avg.)	Yes

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Effect Size (unstandardized)

N = 1378

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

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Effect Size (standardized)

N = 1378

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

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Effect Size Interpretation

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

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Effect Size Tools

- ES Calculator
 - <http://mason.gmu.edu/~dwilsonb/ma.html>
- ES with Confidence Intervals
 - <http://www.cemcentre.org/renderpage.asp?linkID=30325017>

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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*.

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Program Evaluation in Context

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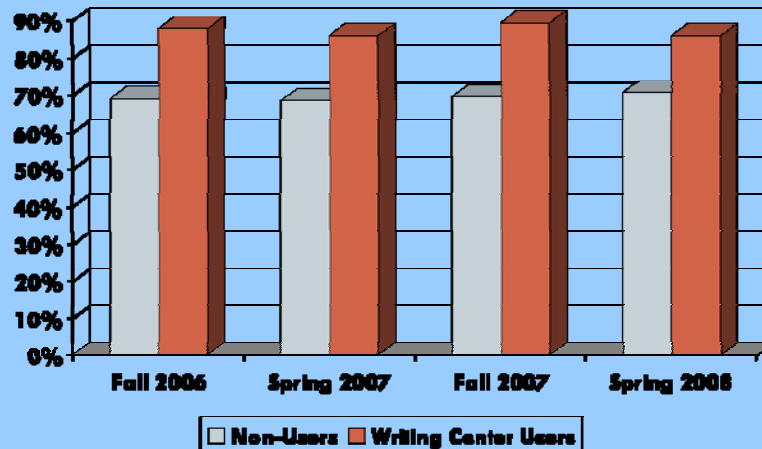
The Basics

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

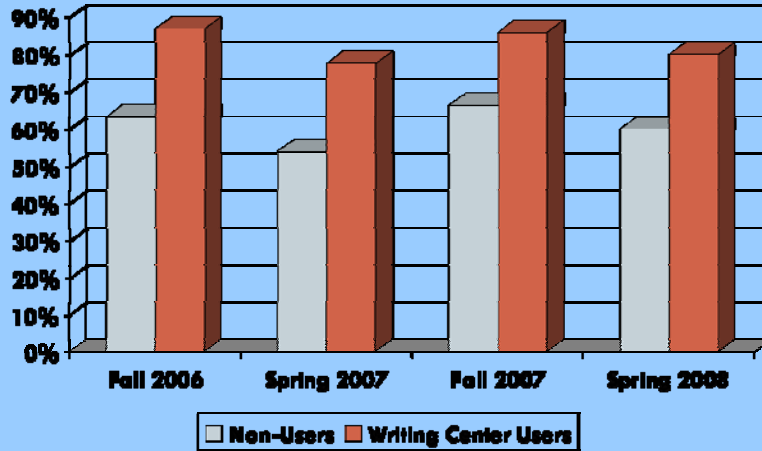
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Successful Course Completion All Students



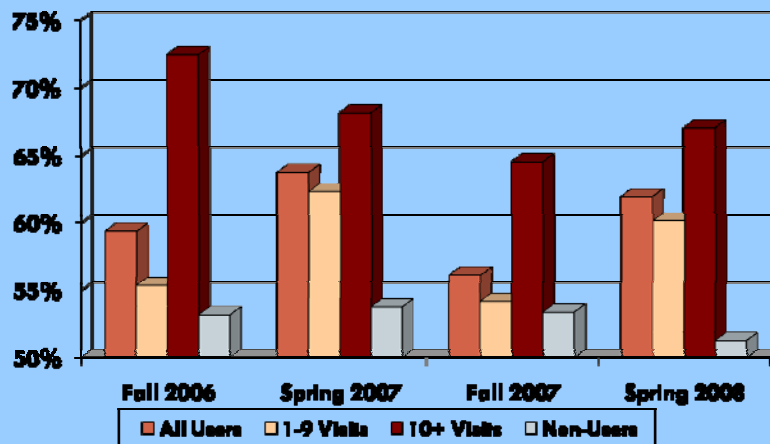
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Successful Course Completion Basic Skills Writing Classes



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Course Success for Math Lab Users

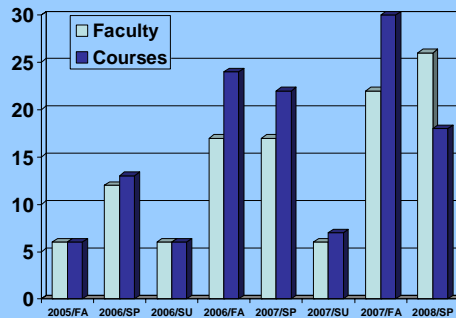


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Next Level – Program Evaluation

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



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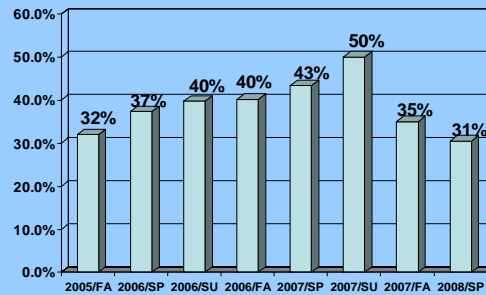
SI Participation – Fall 2005 to Spring 2008 (Group Comparison)

- 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

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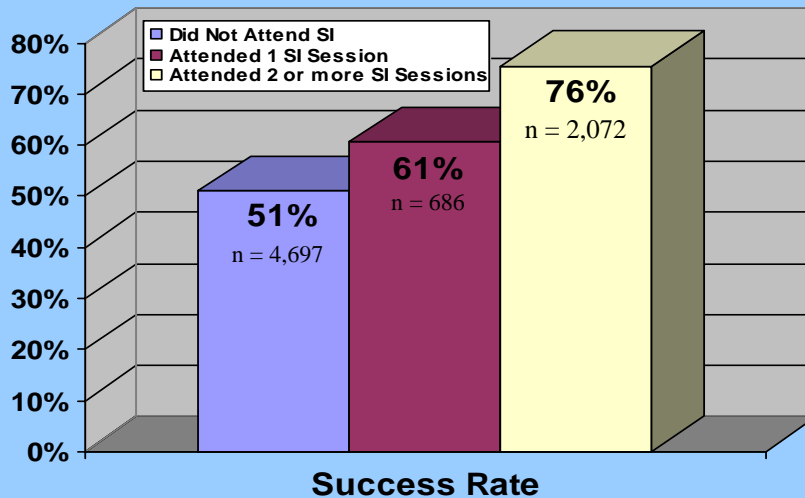
The Percent of Students Using SI

Term	# of SI Sections	Percent of Students who Accessed SI		
		#	N	%
Fall 2005	13	141	441	32.0
Spring 2006	27	360	965	37.3
Summer 2006	17	169	425	39.8
Fall 2006	39	534	1,330	40.2
Spring 2007	45	563	1,296	43.4
Summer 2007	10	34	68	50.0
Fall 2007	58	493	1,409	35.0
Spring 2008	50	464	1,521	30.5



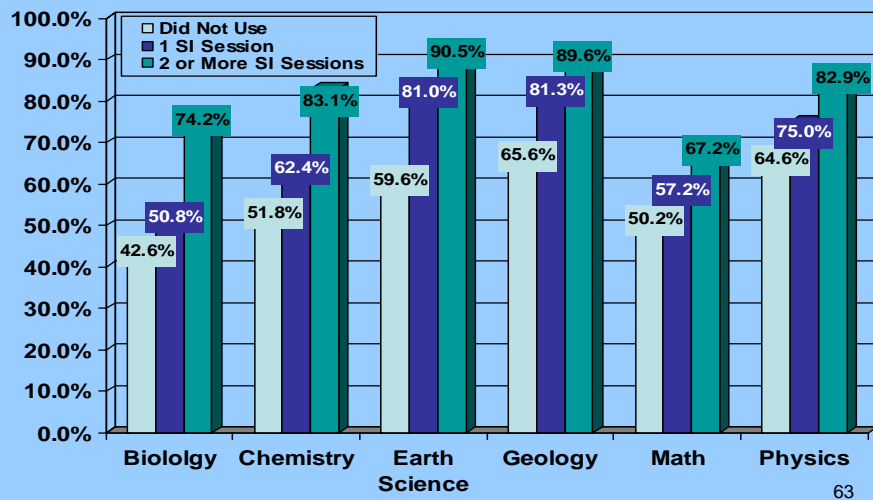
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Success by SI Utilization (Fall 2005 to Spring 2008)



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Success by SI Utilization and Subject (Fall 2005 to Spring 2008)

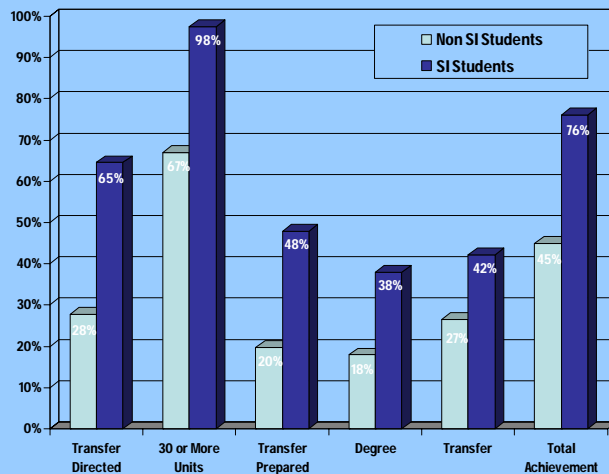


Success by SI Utilization and Subject

Supplemental Instruction (SI)	Success Rate									Two or More Sessions with Did Not Use	
	Did Not Use SI			1 SI Session Only			2 or More SI Sessions			ES	P Value
	#	N	%	#	N	%	#	N	%		
ASTRON-35	32	56	57.1	3	5	60.0	7	8	87.5	.63	.103
Total Biology	146	343	42.6	30	59	50.8	167	225	74.2	.72	< .001
Total Chemistry	610	1,178	51.8	118	189	62.4	591	711	83.1	.69	< .001
Total Earth Science	109	183	59.6	34	42	81.0	57	63	90.5	.69	< .001
Total Geology	42	64	65.6	13	16	81.3	43	48	89.6	.58	.003
Total Math	1,405	2,799	50.2	206	360	57.2	614	914	67.2	.35	< .001
Total Physics	84	130	64.6	15	20	75.0	92	111	82.9	.39	.005
Grand Total	2,396	4,697	51.0	416	686	60.6	1,564	2,072	75.5	.51	< .001

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Chaffey College SI Students Compared to Chaffey College Students using the 2002-2003 to 2007-2008 ARCC Data



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.

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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.

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Working with Qualitative Analysis in Context

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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

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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

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The Basics

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

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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%)

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Advantages of Qualitative Data

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

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Qualitative Process

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

- => **Iterative Process**

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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.”

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Activity

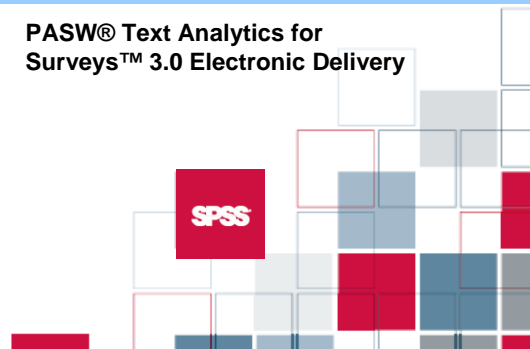
Categorizing open-ended responses

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Utilizing Open-Ended Survey Data

Text Analysis: A Practical Example

PASW® Text Analytics for Surveys™ 3.0 Electronic Delivery



- Cost is \$1,299
- http://www.spss.com/stores/1/PASW_reg_Text_Analytics_for_S_P1193C3.cfm

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Working with Satisfaction Surveys in Context

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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

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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
- Source: Wurtz, K. (2009, April). *Using mixed methods research to analyze satisfaction surveys*. PowerPoint presentation at the RP/CISOA Conference, Tahoe City, CA. Retrieved June 13, 2009 from <http://www.rpgroup.org/documents/UsingMixedMethodsResearchToAnalyzeSurveys.ppt>

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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

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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?

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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)

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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

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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

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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

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The Next Level: Factor Analysis

Factor Analysis: Step-by-Step

- 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

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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

- Source: Sosa, G. (2009, April). *Examining the constructs underlying student satisfaction*. PowerPoint presentation at the RP/CISOA Conference, Tahoe City, CA. Retrieved June 13, 2009 from <http://www.rpgroup.org/documents/ExaminingTheConstructsUnderlyingStudentSatisfaction.ppt>

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Building Relationships through Research

Researchers' Role as
Data Coaches and in Building a
Culture of Evidence

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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

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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

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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

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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

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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)

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Thank you!



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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.

	Count	Percent
Wrong Number	844	34%
Left Message	624	25%
Completed Survey	594	24%
No Answer	321	13%
Refused Participation	92	4%
Total	2,475	

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.

	Count	Percent
Left Message	160	39%
Wrong Number	110	27%
Completed Survey	100	24%
No Answer	35	9%
Refused Participation	4	1%
Total	409	

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.