



How to Research and Analyze Disproportionate Impact Data

ASCCC Student Equity and Success
Regional Meeting
American River College
September 26, 2014

Elaine Kuo, Ph.D.
Foothill College
Institutional Research & Planning
kuoelaine@fhda.edu

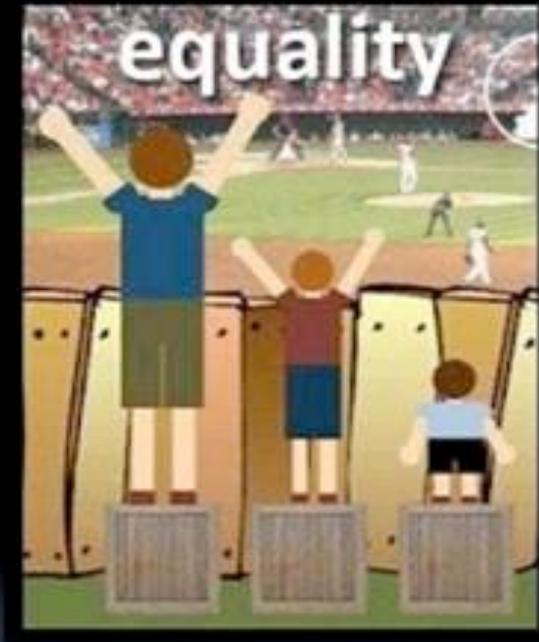
Overview

- What is equity?
- What is disproportionate impact?
- What is required for the State Student Equity Plan?
- How can the student equity data be shared?

Terminology

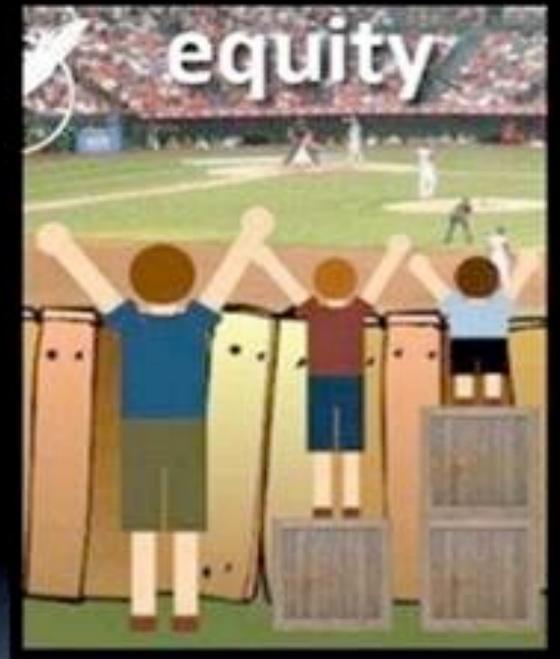
- Goal: Develop, implement, and evaluate a student equity plan
- Definition: Occurs “though environments in which each person...has a reasonable chance to fully develop his or her potential...” (Title 5 Section 66010.2c) regardless of race, gender, age, disability, or economic circumstances
- Meaning: Determine whether historically underrepresented groups have equal opportunity for access, success and transfer

Equality vs. Equity



EQUALITY=**SAMENESS**

*GIVING EVERYONE THE SAME
THING → It only works if
everyone starts from the same
place*



EQUITY=**FAIRNESS**

*ACCESS to SAME
OPPORTUNITIES → We must first
ensure equity before we can
enjoy equality*



Academic Senate
for California Community Colleges

LEADERSHIP. EMPOWERMENT. VOICE.

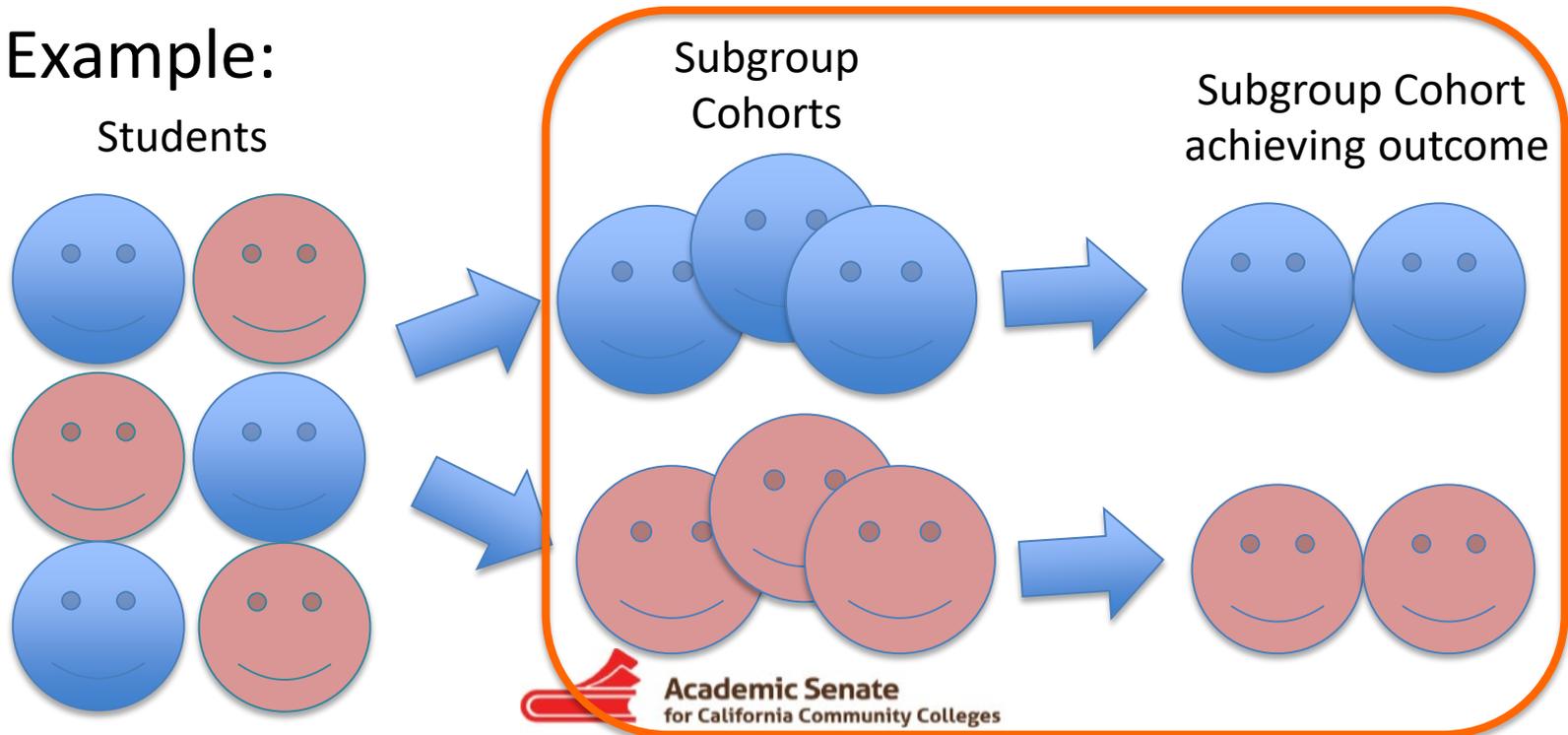
Terminology

- Goal: Analyze whether **disproportionate impact** occurs across specific outcome measures
- Definition: “A condition where access to key resources and support or academic success may be hampered by inequitable practices, policies and approaches to student support or instructional practices affecting a specific group.” (CCCCO Student Equity Plan template, 2014)
- Meaning: Whether certain student groups experience the same outcomes at different rates

Disproportionate Impact

- How determined: 1) identify the number of students for each subgroup, 2) identify the number of students for each subgroup who achieved the outcome of interest

- Example:



Proportionality Index

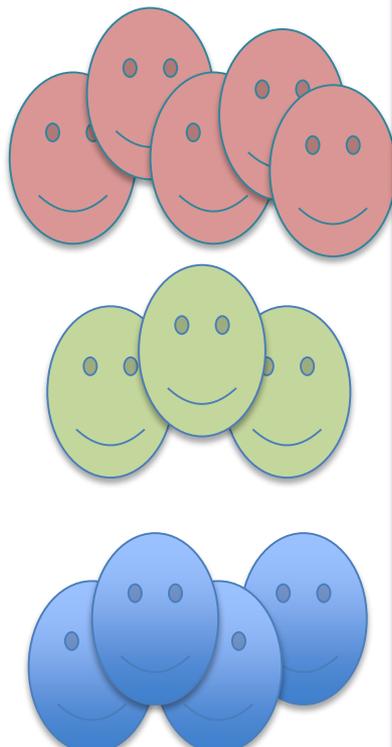
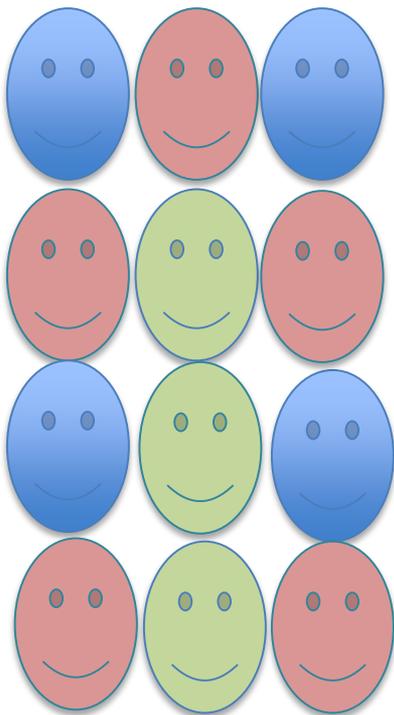
- Definition: Compares the percentage of a disaggregated subgroup in an initial cohort to its own percentage in the resultant outcome group.
- Meaning: $\text{Outcome percentage} / \text{Cohort percentage}$

Proportionality Index

• Example:

Students

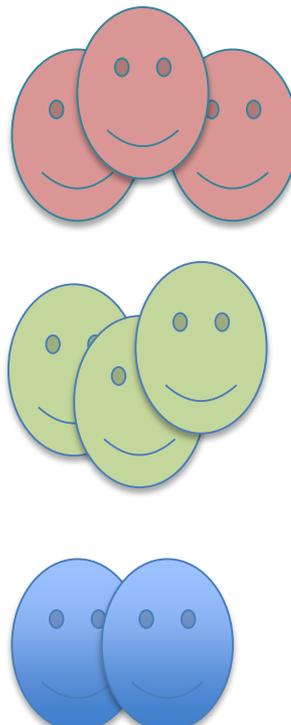
Subgroup Cohort



Students achieving outcome:

3 RED, 3 GREEN, 2 BLUE = 8

Subgroup cohort achieving outcome



Subgroup Percentage

Subgroup outcome percentage

Proportionality Index

.41

.38

.93

.25

.38

1.52

.33

.25

.76

Subgroup divided by all students

Subgroup outcome divided by all students outcome

Subgroup outcome % divided by subgroup %

Proportionality Index

- Calculation:
 - Each subgroup cohort divided by all students to determine subgroup percentage rate
 - Each subgroup cohort achievement outcome divided by all students achieving outcome to determine subgroup outcome percentage rate
 - Divide subgroup percentage rate by subgroup outcome percentage rate
 - Index Scores



Proportionality Index

- Advantage:
 - Easy to calculate
 - Allows for discussion about where disproportionate impact occurs
- Disadvantage:
 - Does not specify at what point disproportionate impact occurs



80% Index

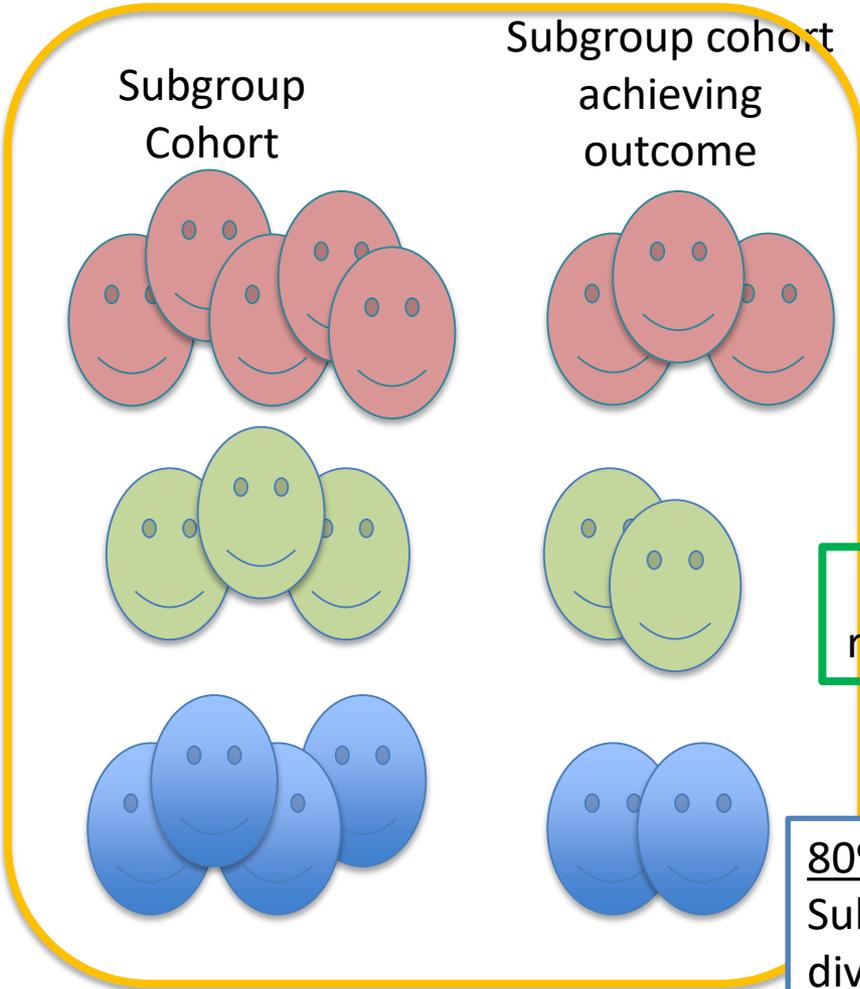
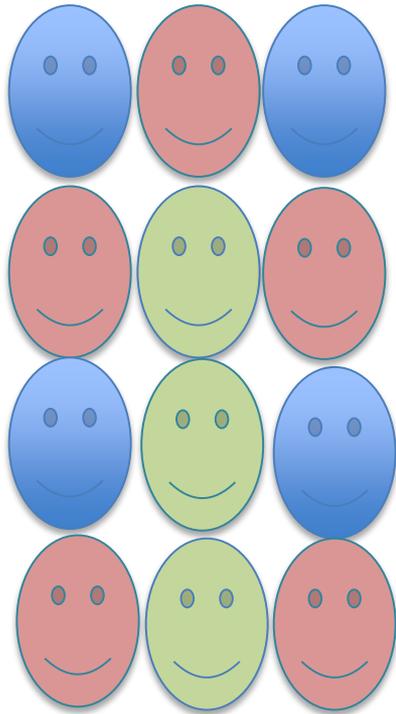
- Context: Equal Employment Opportunity Commission (EEOC); used in Title VII enforcement by federal government (part of the 1964 Civil Rights Act)
- Definition: A selection rate for any race, sex, or ethnic group which is less than four-fifths ($4/5$) (or 80%) of the rate for the group with the highest rate will generally be regarded as evidence of disparate impact, while a greater than four-fifths rate will generally not be regarded as evidence of disparate impact.

80% Index

- Meaning: Percentage of each disaggregated subgroup attaining an outcome/percentage attained by the reference subgroup

80% Index

- Example:
Students



Outcome Rate	80% Index
.60	.90
.67	1.0
.50	.75

GREEN is the reference group

80% Index
Subgroup Outcome Rate
divided by
Reference Group Outcome Rate

80% Index

- Calculation:
 - Each subgroup cohort achieving outcome divided by respective subgroup cohort
 - Identify reference group by comparing the outcome rates among the subgroups
 - Highest subgroup cohort outcome rate is reference group
 - Divide outcome rate of other subgroups with the reference group outcome rate
 - Less than 80% is considered disproportionate impact

80% Index

- Advantage:
 - Provides a cutoff point of 80% to consider disproportionate impact
- Disadvantage:
 - Can be subject to sampling error if sample size is small in that it cannot be determined if disproportionate impact truly exists or if the results are due to chance
 - Having a set cutoff point can limit discussion regarding about disproportionate impact

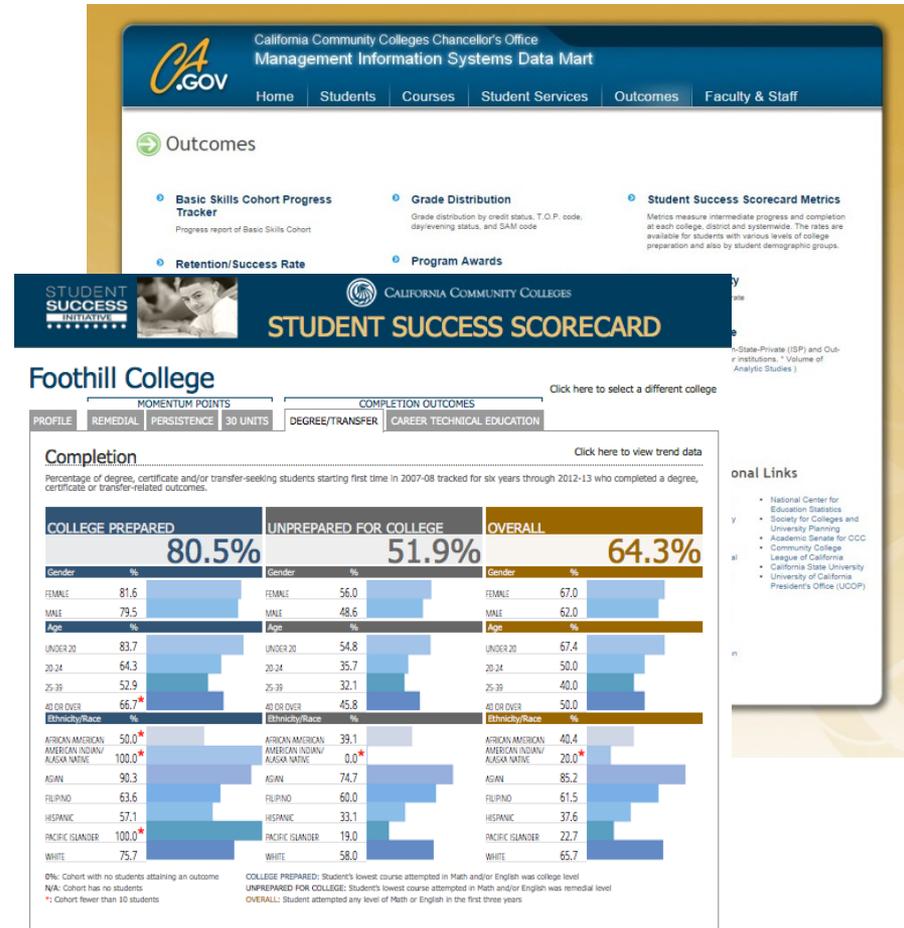


Student Equity Plan Data

- Data required for the state plan:
 - Access
 - Course Completion
 - ESL and Basic Skills Completion
 - Degree and Certificate Completion
 - Transfer
- Each indicator to be disaggregated by:
 - Age, Ethnicity, Gender
 - Disability, Income
 - Foster Youth, Veteran

Student Equity Plan Data Sources

- [CCCCO DataMart](#)
 - Access (student demographics)
 - Course Completion
 - Basic Skills Tracker
 - Transfer Velocity
- [CCCCO Student Success Scorecard](#)
 - Access (student demographics)
 - Basic Skills/Remedial Progress
 - Transfer
- MIS Data via Data on Demand
- Additional Data Sources
 - [US Census](#)
 - [California Department of Finance](#)
 - Internal college data/records
 - Your friendly campus or district research office 😊



Presenting the Data

San Diego Mesa College Equity Dashboard 2014							
Demographic and Academic Characteristics							
Access/Success Indicator	Gender	Ethnicity	Age	DSPS Status	Economically Disadvantaged	Veteran	Foster Youth
Access	●	*	--	--	--	●	--
Course Retention	●	●	●	●	●	●	●
Course Success	●	●	●	●	●	●	●
Remedial English	●	●	●	●	●	●	**
Remedial Math	●	●	●	●	●	●	**
Remedial ESL	●	●	●	●	●	**	**
Degree Completion	●	●	●	●	●	●	**
Transfer	●	●	●	●	●	●	**

*College student population was more diverse than the surrounding service area (City of San Diego)

**Small number of cases (fewer than 10 cases in the original cohort) or data not available

Red	At least one proportionality index below .80
Yellow	At least one proportionality index between .80 and .89
Green	All proportionality indices above .90

Visuals can be helpful in digesting large amounts of data

Presenting the Plan

STUDENT EQUITY PLAN SUMMARY

INDICATOR: COURSE COMPLETION

CAMPUS BASED RESEARCH

DISPROPORTIONATE IMPACT:

- Per state requirement, disproportionate impact is calculated two ways: the 80% and proportionality indexes.

The 80% Index:

- Context: Equal Employment Opportunity Commission (EEOC); used in Title VII enforcement by federal government (part of the 1964 Civil Rights Act).
- Definition: Evidence of disparate impact occurs when any race, sex or ethnic group experiences success rates less than four-fifths (4/5) (or 80%) of the rate for the group with the highest rate.

The Proportionality Index:

- Definition: Compares the percentage of a disaggregated subgroup in an initial cohort to its own percentage in the resultant outcome group.
- Meaning: Outcome percentage/Cohort percentage.

DATA ANALYSIS AND FINDINGS

Table B-6. Foothill College Course Completion Rates and 80% Index by Ethnicity, Fall 2013

	Enrollment Count	Success Count	Success Rate	80% Index
African American	1,091	778	56.44%	0.63
American Indian	28	13	80.77%	0.97
Asian	2,229	2,000	79.96%	0.94
Hispanic	1,597	1,343	66.22%	0.62
Multi-Ethnicity	1,111	1,270	102.44%	1.04
Pacific Islander	745	391	52.34%	0.57
Unknown	2,572	2,149	83.98%	1.00
White Non-Hispanic	11,111	8,791	79.44%	0.94

Analysis:

African American, Hispanic and Pacific Islander students all experience a disproportionate impact in course completion success rates because they experience success rates at or below 80% (4/5) of the success rate for highest group—in this case, "Unknown" students.

FUNDING

- President Miner donated \$5,000 to the Student Equity Workgroup at its inception.
- The State of California has allocated \$70 million to the California Community College system to promote equity efforts.

GOALS

Address the achievement gap:

- For the next three (3) years the entire campus will work to increase course completion success rates for African American, Hispanic/Latino and Filipino/Pacific Islander students by 3% (over fall 2013 figures).

Research and collaborate:

- Coordinate with the Office of Research to gather more data to better understand the course success rates and probation rates for African-American, Hispanic/Latino and Filipino/Pacific Islander students and explore possible causes and/or correlations for the disproportionate impacts.
- Coordinate with the Office of Research to understand why males are more likely to end up on probation even though there is relative parity in the course success rates for males and females.
- Coordinate with the Office of Research and other campus departments to identify possible reasons why African American, Hispanic/Latino, and Filipino/Pacific Islander students and students aged 20-24 experience disproportionate impacts as they attempt to complete basic skills English, math or ESL courses sequences, and
- Identify, support and build on efforts already being implemented to mitigate disproportionate impacts in these programs.

Activities

Year 1 (2014-2015)

- Identify specific activities that will increase the course completion success rates of African-American, Latino and Filipino/Pacific Islander students.
- Collaborate with the Program Review Committee to identify programs and disciplines with low success rates for African-American, Latino, and Filipino/Pacific Islander students. Then work with program staff and administrators to identify potential interventions and create a plan for increased success of these students.
- Collaborate with the Office of Research to develop an equity research plan that will identify causes and correlations for disproportionate impacts and solicit student input in identifying interventions and practices that help them succeed.
- Work with President's Office to determine how Foothill College can participate in the State Scorecard through the USC Center for Excellence.

One page summary highlights important findings; reviews goals and activities



Academic Senate
for California Community Colleges

LEADERSHIP. EMPOWERMENT. VOICE.

Summary

- Both proportionality and 80% index are recommended by Chancellor's Office to help measure disproportionate impact
- College to determine disproportionate impact when using proportionality index
- College to comment on each indicator and accompanying analysis—then identify goals, activities and expected outcomes especially if there is disproportionate impact identified

For Consideration

- Make the Student Equity Plan meaningful at the local level
- Collection of initial reactions, second-level questions, and suggestions for investigating and addressing each area of disproportionate impact
- Conduct further investigation on student groups unique to your population
- Sustained discussion and engagement

Thank you!