Building Integrated Logic Models for Educational Equity, Student Pathways, and Institutional Change

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Overview

- The academic pipeline problem and educational equity
- Capital, alienation, or challenge?
- What are Logic Models?
- What are Integrated Logic Models (ILMs)? How are they useful?
- A collaboration building ILMs by integrating:
    1. *Social science theories of change*
    2. *Research-based activities and outcomes across programs*
    3. *Outcomes with student-level longitudinal data*
- University of California, Santa Cruz: An H.S.I. building its ILM
- Towards a common language
- An invitation

The Academic Pipeline Problem in the U.S.

	% High School Graduates	% College Graduates
Hispanic/Latinx	63	14
Native American	77	13
African American	84	20
European American	88	34
Asian American	89	52

(U.S. Census Bureau, 2012)

Capital, Alienation, or Challenge?

• **Social Capital:** Cultural reproduction across generations, "the rich stay rich and the poor stay poor" (Bourdieu, 1986)
→ Community Cultural Wealth (Yosso, 2005)

• **Alienation or belonging?** Marginalization and oppositional identities (Durkheim, 1915; Fordham & Ogbu, 1986)
→ Sense of belonging (Tajfel & Turner, 1986; Hurtado et al., 2012)

• **Challenge and resiliency:** Navigating identities across challenges and resources in cultural worlds, "proving gatekeepers wrong" (Phelan et al., 1998; Cooper, 2011; Azmitia et al., 2018)

→Integrating capital, alienation, and challenge (Cooper et al., 2018)

A Sample Logic Model for One Program

Inputs		Implementation of Theory of Change		Outcomes		
Needs	Resources	Activities	Outputs	Short-term	Intermediate-term	Long-term and Impacts
Families High % low-income, limited English, low educational attainment **Schools** Low-performing **Students** Low college prep, enroll, graduation	**Families** Aspirations for child's education Staff, database, funding **Partners** Students, schools, campus, region, state, nation	***Academic Advising*** College, financial aid, career knowledge; Tutoring; College visits ***Professional Development***	# Students advised # with ***Individualized College and Career Plans*** # attended college visits # Staff attended	**Grades 6-9** Basic college and financial aid knowledge; Develop and update IAPs **Grade 10** Take PSAT	**Grade 11** Take SAT/ ACT; college and financial aid knowledge **Grade 12** Complete college-prep, AP, and honors classes; college and financial aid applications	***Increased equity and access in:*** ***College enrollment*** ***Community College Transfer*** ***Graduation & College-based Careers***

What are Integrated Logic Models (ILMs)? How are they useful?

- ILMs integrate multiple programs along the pipeline into one LM for students' college and career pathways and institutional change
- Integrating social science theories of change advances knowledge and unifies research, practice, and policies (often fragmented and fragile)
- Integrating activities builds coherence, fidelity, collective impact, and broader institutional change for students' pathways
- Integrating longitudinal data streamlines data collection and strengthens research, evaluation, and sustainability
- Clearer roadmaps of more than one successful pathway for students, families, partners, and public and private funders

A Collaboration of P-20 Alliances: Building ILMs for Educational Equity from Preschool through Graduate School to Careers

P/K->Elementary->MS->HS->Community and 4-year Colleges->Grad/Prof->Careers
School

- **Santa Cruz County College Commitment (S4C)**
- **University of California Office of the President (UCOP)**
  4th grade---------->to and through college
- **UC Santa Cruz Educational Partnership Center**
  6th grade---------->to and though college to careers
- **Cabrillo Advancement Program (CAP) at Cabrillo College**
  6th grade----------> to and through community/4-yr colleges to careers
- **University of Colorado - Colorado Springs**
  7th grade STEM----------> to and through college to careers
- **UC Santa Cruz Hispanic-Serving Institutions**
  to college-->community college transfer-->graduation
- **Santa Cruz County Adult Education Block Grant**
  Adult Ed-->community college-->Career Tech Ed (CTE) to careers

Strategy 1: Integrating Social Science Theories of Change for Educational Equity

- **Seven College-Going Conditions** (Oakes, 2003) - how equity and access to college preparation and success require: 1) safe and adequate school facilities; 2) college-going school cultures; 3) academic rigor; 4) qualified teachers; 5) intensive academic and social supports; 6) students developing multicultural college and career identities; and 7) family-neighborhood-school connections

- **Multicontextual Model for Diverse Learning Environments** (Hurtado & Alvarado, 2015) – how social-historical, policy, institutional, and community contexts, including staff and faculty identities, define campus diversity climates; curricular and co-curricular learning environments shape student retention and achievement and sense of belonging, which can strengthen social equity and democratic and economic outcomes

- **Bridging Multiple Worlds** (Cooper, 2011) - how culturally diverse youth navigate challenges and resources across family, peer, school, and community worlds along college and career pathways: 1) demographics of youth moving through school; 2) college/career/cultural identity pathways; 3) math and language pathways; 4) challenges/gatekeepers and resources/brokers across cultural worlds; and 5) P-20 cultural research partnerships that boost resources youth draw across worlds

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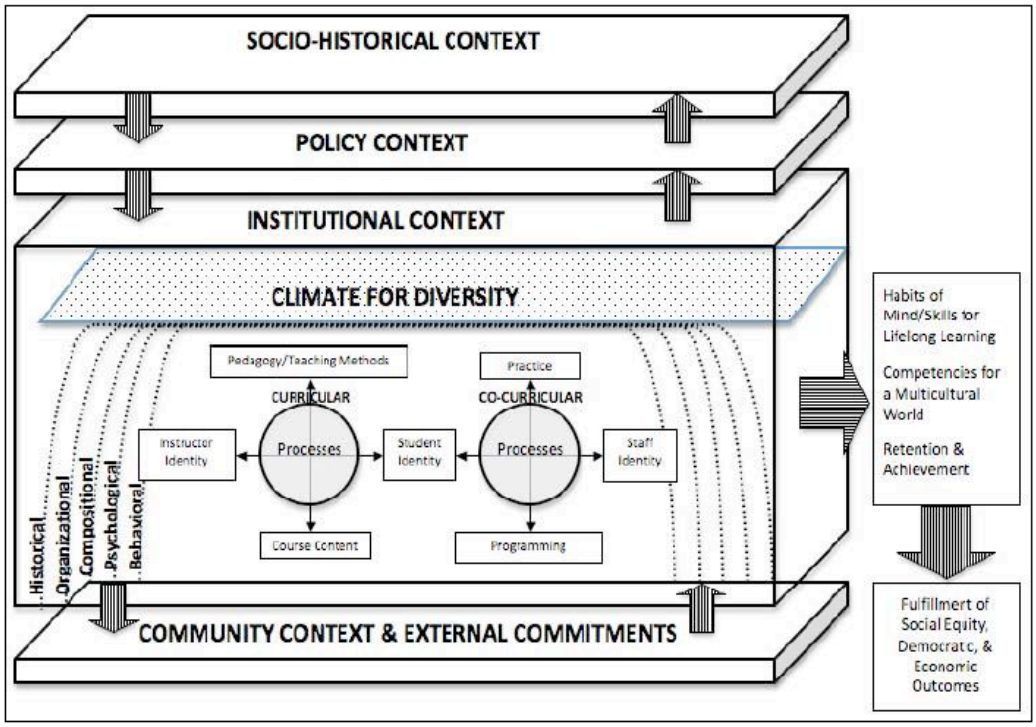
A Common Framework for P-20 Research, Policy, and Practice in the 10-campus University of California System

(Cooper, 2011; Cooper, Mehan, & Halimah, 2007; Oakes, 2003)

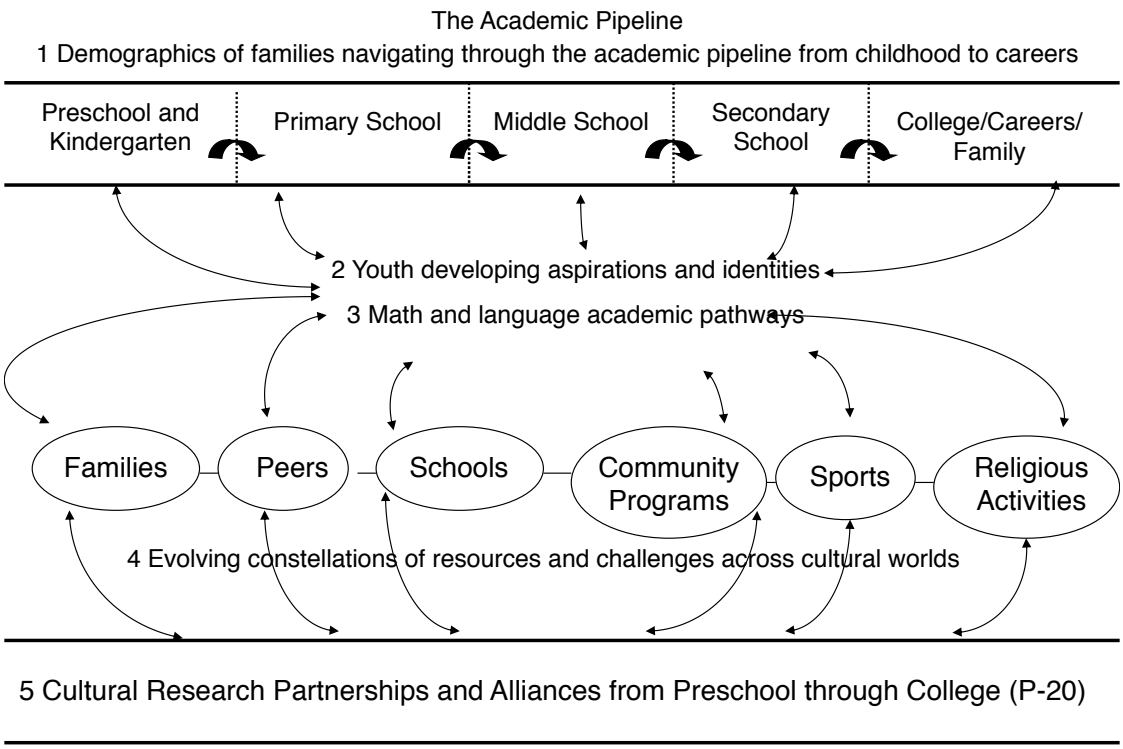
7 Conditions for Equity and Diversity in College Access (Oakes, 2003)	PreK	Elementary	Middle	HS	Community College & University	Graduate & Prof. schools
Safe and Adequate School Facilities	1	1	3	3	1	1
College-Going School Culture	3	4	8	9	6	3
Rigorous Academic Curriculum	3	5	9	8	4	2
Qualified Teachers	3	7	9	8	5	4
Intensive Academic and Social Supports	1	3	9	8	5	
Opportunities for Multi-Cultural College-Going Identity	1	4	9	8	4	3
Family-Neighborhood-School Connections	3	6	9	9	5	

Number of UC campuses (of 10) reporting activity

Figure 3. Multicontexual Model for Diverse Learning Environments (Hurtado, et al., 2012)



Bridging Multiple Worlds Theory (Cooper, 2011, Cooper et al., 2018)



2: Integrating Research-Based Activities across Programs

GEAR UP, EAOP, MESA, and Cal-SOAP at UCSC EPC (Cooper & Rocha-Ruiz, 2016)

Inputs		**Implementation** (Oakes)		**Outcomes and Impact**		
Needs	Resources	Activities	Outputs	Short-term	Long-term	Impact
High % families: low income, limited English, low educational attainment, college knowledge Low-performing schools; Students: low college readiness, enrollment, graduation	Family aspirations for child's education EPC staff, database, funding Campus, regional, state, and national partners	***Academic advising***: College, financial aid, and career knowledge; Tutoring; College visits ***Professional Development***	# Students advised # with ***Individualized College and Career Plans*** # attended college visits # teachers attended	***Grades 6-9*** Increase basic college and financial aid knowledge; develop and update IAPs ***Grade 10*** Take PSAT and College-prep classes	***Grade 11*** Taking SAT/ ACT, increase college and financial aid knowledge ***Grade 12*** Increase college-prep, AP, and Honors completion; college and financial aid applications	***College*** Increase rates of equity in: Post-secondary enrollment Graduation

3: Integrating Outcomes with Student-Level Longitudinal Data

Cabrillo Advancement Program (CAP) at Cabrillo College

Elementary->Middle School->HS->Community College & 4-yr College->Career

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Alg 1>College-prep>College-Community College>College Completion>Careers
courses enrollment degrees & transfer & degrees

Cal-PASS Plus - www.calpassplus.org - statewide longitudinal database of individual students' K-12-through-college records

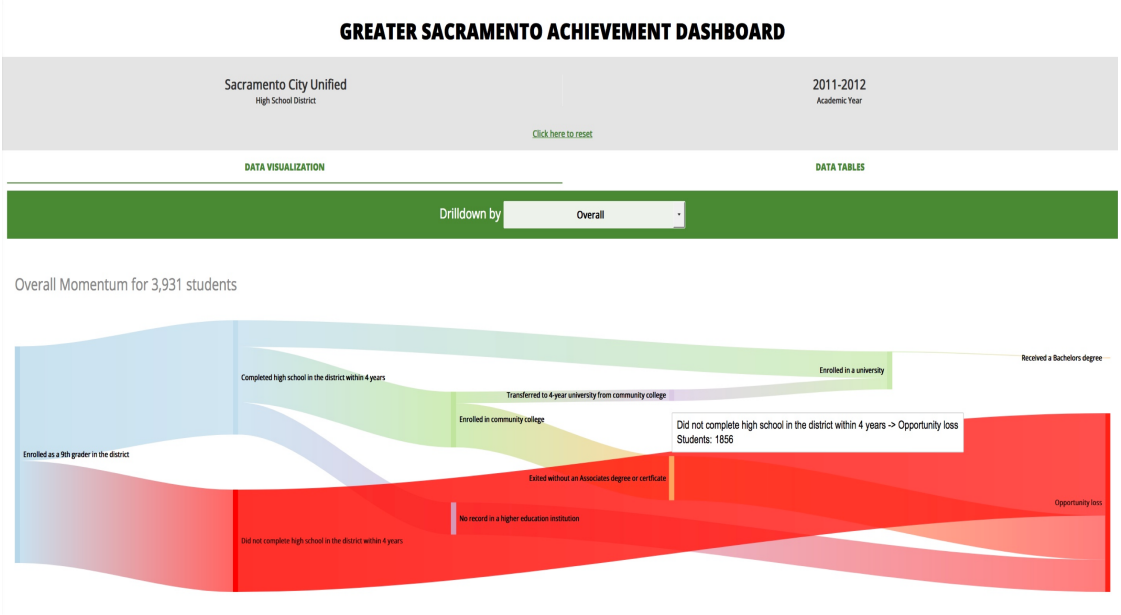
CAP, UC Santa Cruz, & Cal-PASS Plus merge student-level data:

- Demographics
- Program participation
- Surveys: Program activities - Theory of change: Cooper (2011)
- Math & language pathways: MS>HS>college>transfer>degrees
- Alumni narratives: More than one path through college to careers

Tracking the Academic Pipeline Problem:

A Longitudinal Data Dashboard in One Region

Cal-PASS Plus - www.calpassplus.org

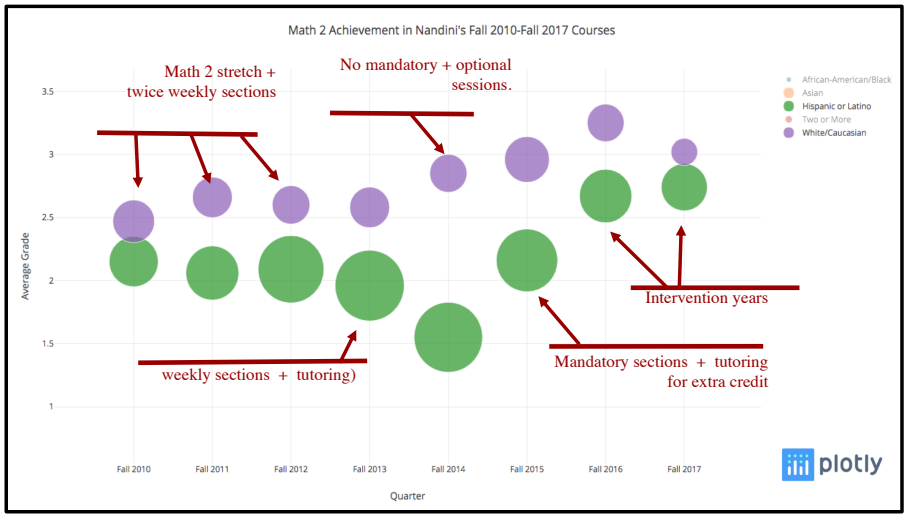


UC Santa Cruz: A Hispanic-Serving Institution

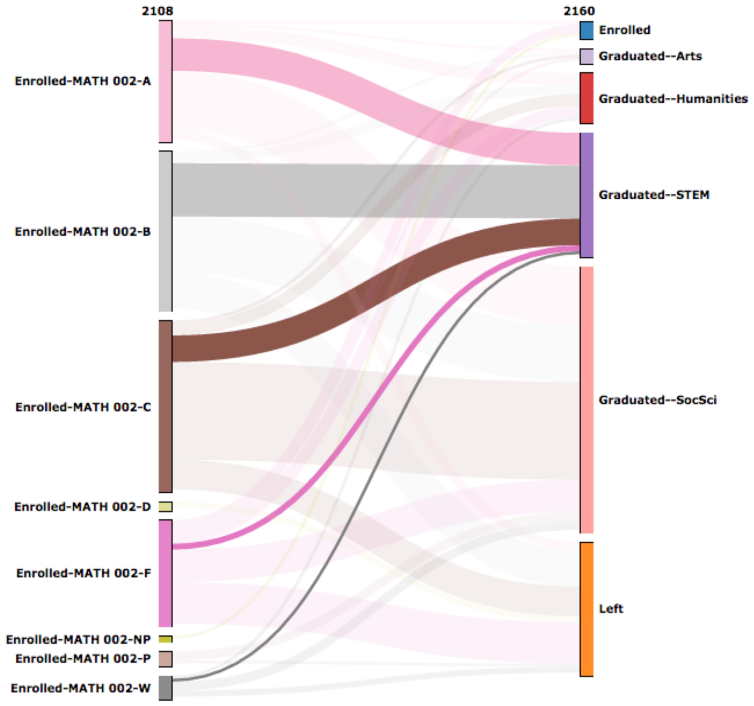
https://studentsuccess.ucsc.edu/hsi

Activities (Hurtado et al.)	UCSC MAPA	SJCC-UCSC Cooperative	HSI STEM - SEMILLA
Math	Collaborative Math 2 – College Algebra	-	STEM Scholars Collaborative College Math 3 Seminars
Writing	WORD Regional Institutes (SF, Oakland, Los Angeles)	Research Writing Course - SJCC	Writing support for internship applications
Sense of Belonging	Regional Family Conferences El Centro Internships Student Focus Groups Campus Engagement/Forums	SJCC Student Campus Visits to UCSC, Family Day at UCSC	STEM Scholars Collaborative: ACE, MEP, STEM Diversity, LSS, EOP
Advising	Math 2 and Writing Advising, CFL/iMAP, Multicultural Competence Adviser Training	Transfer/Retention Counseling, Graduate Student Mentoring, Financial Literacy	Holistic STEM Counselors STEM Academy Career Development
Transfer and Dual Enrollment	-	Research Opportunities Articulation - SJCC Dual Enrollment - LALS	STEM Transfer Academies and Articulation Review
Professional Development, Research & Eval	Writing and Math faculty PD ----------→----------	Faculty PD-SJCC & UCSC Counselor PD - SJCC ----------→----------	STEM faculty PD TA Training Certificate ----------→----------

Equity Analysis:
White/Caucasian and Latino Students' Math Grades



Longitudinal Data in Ribbon Diagram: Math 2 Fall 2010 Graduation by Winter 2016



Towards a Shared Language across Theories, Activities, and Longitudinal Outcomes

- Cross-Institutional College-Going, Transfer, and Completion Partnerships
- Rigorous Curriculum
- Academic and Social Support
- Multicultural College and Career Identity Pathways
- Sense of Campus and Career Belonging
- Family Partnerships
- Financial Aid
- Transfer and Dual Enrollment
- Professional Development
- Collaborative Research, Evaluation, and Equity Analysis

Outcomes: Increase rates & close equity gaps: college enrollment, transfer-level math & English, grades, persistence, STEM majors, transfer, 6-yr graduation

Sketching Your Individual and Integrated Logic Models

Inputs		**Implementation** (Theory of Change)		**Outcomes and Impact**		
Needs	Resources	Activities	Outputs	Short-term	Long-term	Impact
		Cross-Institutional College-going, Transfer,& Completion Partnerships		2nd	3rd	1st
		Rigorous Curriculum				
		Academic and Social Support				
		Multicultural College and Career Identities				
		Sense of Belonging				
		Family Partnerships				
		Financial Aid				
		Transfer and Dual Enrollment				
		Professional Development				
		Research, Evaluation, and Equity Analyses				

An Invitation:
Bridging Multiple Worlds Alliance
www.bridgingworlds.ucsc.edu

- Growing network of state, national, and international partners

- How immigrant, low-income, and URM youth build college and career pathways without losing ties to families and cultural communities

- Advancing research, practice, and policy in collaboration with alliance partners and youth themselves

- Bridging Multiple Worlds Tools (Cooper, 2011) and on website
- Roundtable on Integrated Logic Models and Databases
- Animating Pathways to College and Careers
- Cal-PASS Plus Regional Learning Collaborative

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