

Culture in the Classroom ~ Navigating the Terrain~

National Council of Negro Women

Texas State Coalition

6th NCNW State Unity Conference

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Rice University School Mathematics Project



Overview

- The state of education today:
Where are we? Where do we desire to go?
- What does “culture” have to do with it?
- How to navigate the cultural issues and other key factors to ensure children acquire high-quality education?



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The racial/ethnic difference in educational achievement in the United States is attributable to the similarity or difference between students' culture and the schooling practices they are expected to engage and to master, which often are derived from European American culture.

e.g., Allen & Boykin, 1992; American Psychological Association, 2003; Au, 1980, Au & Mason, 1981; Boykin, et al, 2005; Hollins, 1996; Lee, et al., 2003; Loewen, 2007; Michaels, 1981; Tyler, et al, 2005.



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Culture is a way of life.

Williams, R. (1989). Culture is ordinary. In Robin Gable (Ed.), *Resources of hope: Culture, democracy, socialism*, (pp. 3-14). London: Verso.



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Culture is that composite of socially and historically determined behaviors that nourishes and thereby defines the spiritual, religious, intellectual, socio-political, and economic parameters within which the individual develops and exists.

Akoto, K. A. (1992). *Nationbuilding theory and practice in Afrikan centered education*. Washington DC: Pan Afrikan World Institute.

Geertz, C. (1973). Person, time, and conduct in Bali. In *The interpretation of cultures*, 87-125. New York: Basic Books.



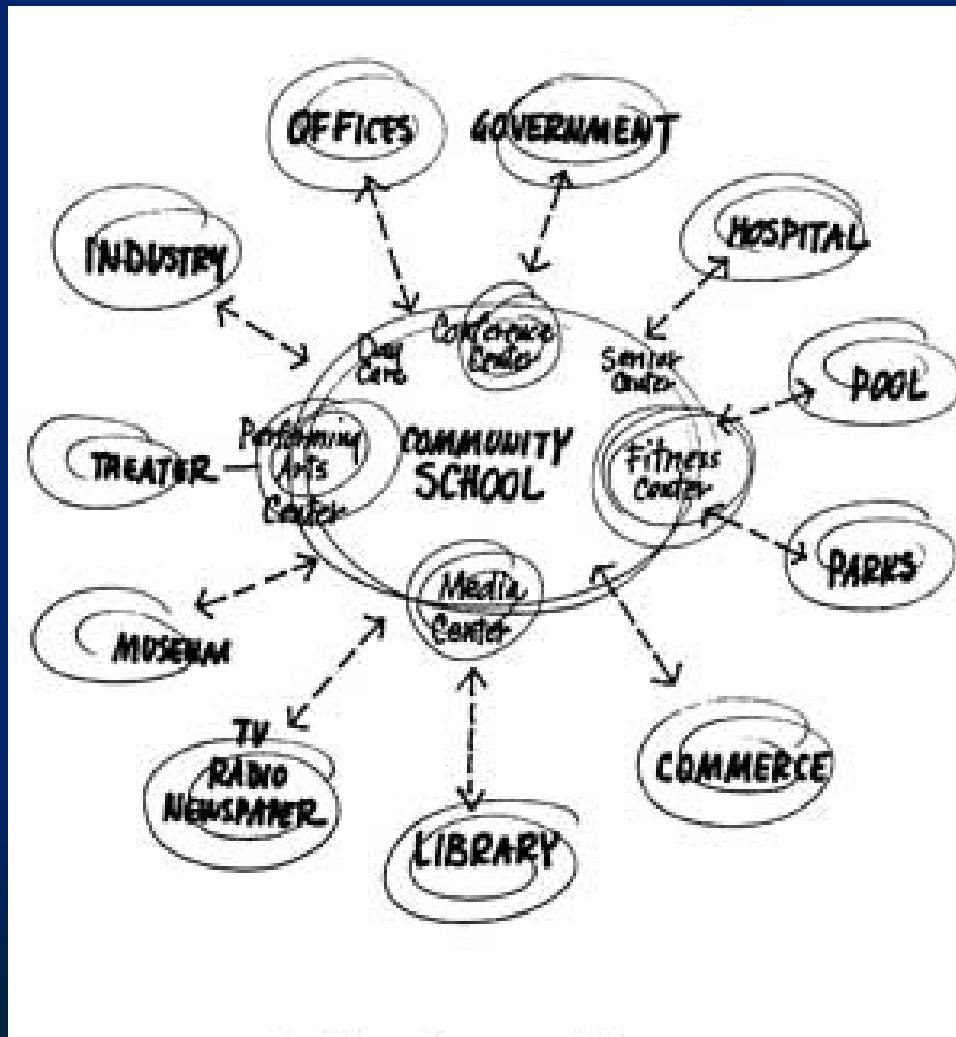
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There are no culture-free or values-free human endeavors.

Akoto, 1992.



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Culture, Learning, and Teaching

Culture is the integrated pattern of human behavior that is both a result of and integral to the human capacity for learning and transmitting knowledge to succeeding generations.

Merriam-Webster Encyclopedia, m-w.com. Retrieved from <http://www.merriam-webster.com/concise/culture>



Cognitive Psychology

“Learning takes place by assimilation of new concepts and propositions into existing concepts and propositional frameworks held by the learner. This knowledge structure as held by the learner is also referred to as the individual’s cognitive structure.”

Novak, J. D. & A. J. Cañas (2008). *The Theory Underlying Concept Maps and How to Construct Them*, Technical Report IHMC CmapTools 2006-01 Rev 01-2008, Florida Institute for Human and Machine Cognition, p.2. Retrieved from:
<http://cmap.ihmc.us/Publications/ResearchPapers/TheoryUnderlyingConceptMaps.pdf>.

State of Texas TAKS Results – Met Standard (Sum of All Grades/Standard Accountability Indicator)

	Year	All Students	African American	Hispanic	White	Native American	Asian/Pacific Island	Special Ed.	At Risk
Reading/ English Language Arts	2011	90%	86%	87%	95%	91%	96 / 91%	75%	80%
	2010	90%	87%	87%	95%	93%		76%	81%
Math	2011	84%	75%	81%	91%	84%	96/87%	68%	70%
	2010	84%	74%	80%	91%	85%		67%	70%
Science	2011	83%	74%	78%	92%	85%	94/84%	60%	66%
	2010	82%	73%	77%	91%	87%	86%	59%	67%

TAKS Met Standard
(Sum of All Grades/Standard Accountability Indicator)
Reading/English Language Arts

	Year	State	Region	African American	Hispanic	White	Native American	Asian/Pacific Island	Special Ed.	At Risk
State of Texas	2011	90%	---	86%	87%	95%	91%	96/91%	75%	80%
	2010	90%		87%	87%	95%	93%		76%	81%
Austin (Region XIII)	2011	--	91%	86%	86%	96%	90%	97/93%	79%	79%
	2010		91%	86%	86%	96%	93%		78%	81%
Beaumont (Region V)	2011	--	90%	85%	88%	93%	89%	94/93%	79%	82%
	2010		90%	85%	87%	93%	89%		77%	83%
Corpus Christi (Region II)	2011	--	87%	84%	86%	94%	89%	95/89%	72%	76%
	2010		89%	87%	87%	94%	94%		76%	80%
Fort Worth (Region XI)	2011	--	91%	85%	86%	95%	91%	95/90%	77%	80%
	2010		91%	86%	86%	96%	94%		76%	82%
Houston (Region IV)	2011	--	90%	87%	88%	96%	90%	97/92%	77%	82%
	2010		91%	88%	88%	96%	92%		77%	83%

TAKS Met Standard
(Sum of All Grades/Standard Accountability Indicator)
Reading/English Language Arts (continued)

	Year	State	Region	African American	Hispanic	White	Native American	Asian/Pacific Island	Special Ed.	At Risk
State of Texas	2011	90%	---	86%	87%	95%	91%	96/91%	75%	80%
	2010	90%		87%	87%	95%	93%		76%	81%
Huntsville (Region VI)	2011	--	91%	82%	87%	94%	93%	97/90%	76%	80%
	2010		91%	82%	87%	95%	93%		76%	81%
Kilgore (Region VII)	2011	--	90%	82%	85%	94%	91%	97/95%	77%	80%
	2010		90%	83%	85%	95%	92%		78%	81%
Richardson (Region X)	2011	--	91%	87%	87%	96%	92%	97/93%	77%	81%
	2010		91%	87%	87%	96%	94%		77%	82%
San Antonio (Region XX)	2011	--	89%	86%	87%	95%	88%	96/92%	74%	79%
	2010		90%	89%	88%	96%	90%		75%	82%

TAKS Met Standard (Sum of All Grades/Standard Accountability Indicator) Mathematics

	Year	State	Region	African American	Hispanic	White	Native American	Asian/Pacific Island	Special Ed.	At Risk
State of Texas	2011	84%	---	75%	81%	91%	84%	96/87%	68%	70%
	2010	84%		74%	80%	91%	85%		67%	70%
Austin (Region XIII)	2011	--	87%	75%	81%	93%	85%	97/89%	72%	70%
	2010		86%	75%	79%	92%	88%		68%	69%
Beaumont (Region V)	2011	--	83%	75%	83%	87%	84%	94/82%	70%	69%
	2010		82%	71%	81%	87%	77%		66%	68%
Corpus Christi (Region II)	2011	--	79%	72%	76%	89%	85%	94/91%	64%	60%
	2010		79%	73%	76%	88%	85%		64%	62%
Fort Worth (Region XI)	2011	--	85%	73%	80%	91%	85%	95/87%	68%	68%
	2010		85%	73%	79%	90%	88%		66%	69%
Houston (Region IV)	2011	--	86%	77%	84%	92%	85%	97/89%	71%	73%
	2010		85%	76%	83%	92%	85%		69%	73%

TAKS Met Standard
(Sum of All Grades/Standard Accountability Indicator)
Mathematics (continued)

	Year	State	Region	African American	Hispanic	White	Native American	Asian/Pacific Island	Special Ed.	At Risk
State of Texas	2011	84%	---	75%	81%	91%	84%	96/87%	68%	70%
	2010	84%		74%	80%	91%	85%		67%	70%
Huntsville (Region VI)	2011	--	86%	72%	83%	90%	87%	97/87%	67%	71%
	2010		86%	70%	82%	90%	85%		66%	70%
Kilgore (Region VII)	2011	--	84%	71%	82%	89%	86%	95/89%	70%	69%
	2010		84%	71%	80%	89%	84%		67%	69%
Richardson (Region X)	2011	--	86%	76%	82%	93%	85%	97/87%	70%	72%
	2010		85%	75%	81%	92%	87%		68%	69%
San Antonio (Region XX)	2011	--	82%	75%	79%	91%	81%	94/88%	67%	67%
	2010		81%	76%	78%	91%	80%		64%	67%

TAKS Met Standard (Sum of All Grades/Standard Accountability Indicator) Science

	Year	State	Region	African American	Hispanic	White	Native American	Asian/Pacific Island	Special Ed.	At Risk
State of Texas	2011	83%	---	74%	78%	92%	85%	94/84%	60%	66%
	2010	82%		73%	77%	92%	87%		59%	67%
Austin (Region XIII)	2011	--	85%	73%	77%	94%	83%	95/90%	62%	66%
	2010		85%	73%	75%	94%	88%		61%	67%
Beaumont (Region V)	2011	--	82%	73%	81%	87%	77%	91/77%	63%	67%
	2010		81%	71%	77%	86%	78%		58%	67%
Corpus Christi (Region II)	2011	--	77%	72%	73%	90%	89%	89/88%	54%	58%
	2010		77%	72%	72%	89%	86%		55%	60%
Fort Worth (Region XI)	2011	--	84%	72%	76%	92%	84%	92/80%	59%	65%
	2010		84%	72%	75%	92%	89%		60%	68%
Houston (Region IV)	2011	--	85%	77%	81%	94%	86%	95/88%	62%	69%
	2010		84%	76%	80%	93%	88%		61%	70%

TAKS Met Standard
(Sum of All Grades/Standard Accountability Indicator)
Science (continued)

	Year	State	Region	African American	Hispanic	White	Native American	Asian/Pacific Island	Special Ed.	At Risk
State of Texas	2011	83%	---	74%	78%	92%	85%	94/84%	60%	66%
	2010	82%		73%	77%	92%	87%		59%	67%
Huntsville (Region VI)	2011	--	85%	68%	78%	91%	83%	95/89%	61%	67%
	2010		85%	69%	77%	91%	82%		61%	68%
Kilgore (Region VII)	2011	--	82%	68%	75%	90%	87%	92/96%	62%	65%
	2010		82%	69%	73%	89%	89%		60%	66%
Richardson (Region X)	2011	--	84%	75%	78%	93%	87%	95/84%	61%	67%
	2010		83%	73%	77%	93%	88%		60%	66%
San Antonio (Region XX)	2011	--	81%	76%	77%	93%	82%	92/83%	60%	65%
	2010		80%	76%	76%	92%	83%		59%	66%

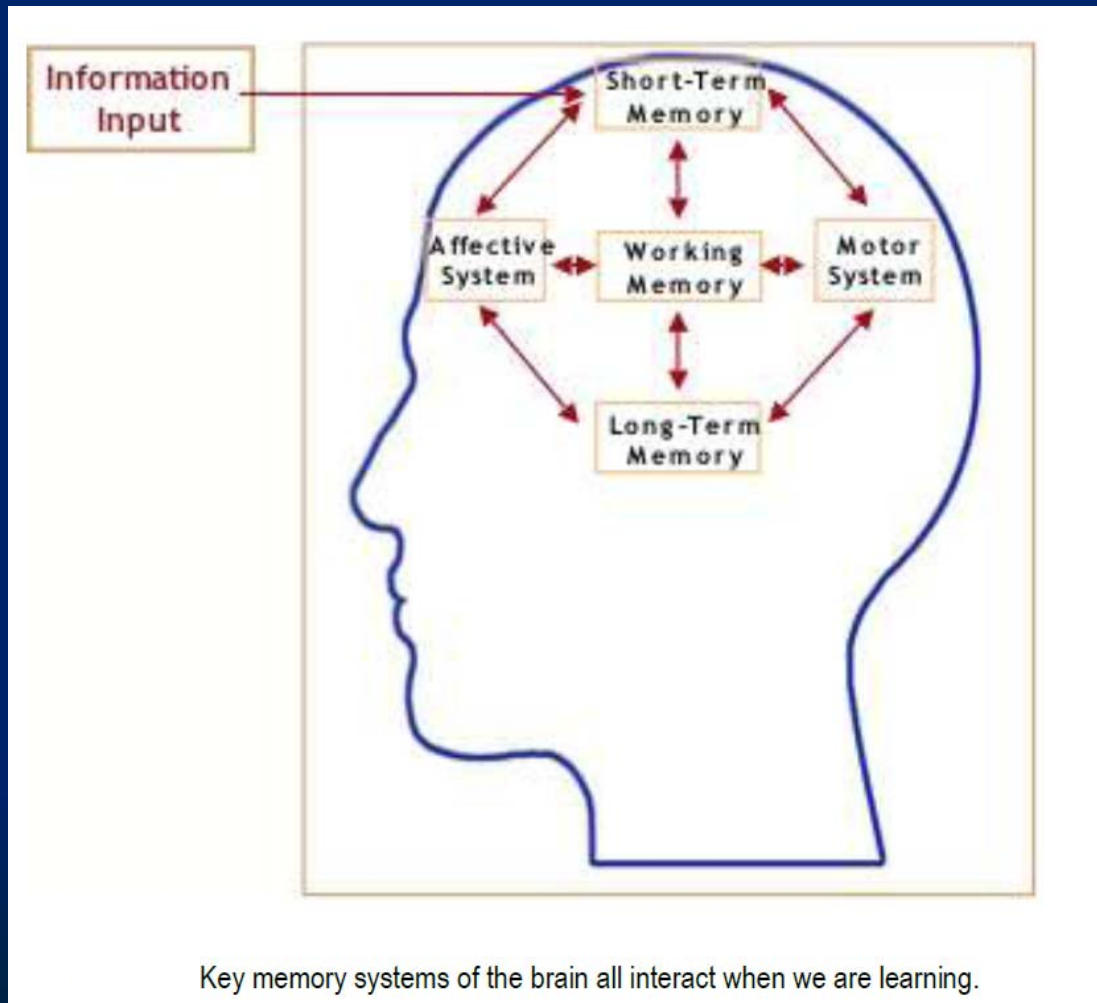


Meaningful Reception Learning

- Conceptually clear material, presented with language and examples relatable to the learner's prior knowledge
- Learner must possess relevant prior knowledge
- Learner must choose to learn meaningfully



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Key memory systems of the brain all interact when we are learning.

Novak & Cañas, 2008.



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Discrepancies in students' academic achievement parallel discrepancies in opportunities experienced everyday by students of different cultural backgrounds.

Gutiérrez, R. (2008). A gap-gazing fetish in mathematics education? Problematizing research on the achievement gap. The National Council of Teachers of Mathematics, Inc. Retrieved from <http://www.nctm.org/>

Things More Likely to be Observed on Campuses with Larger Proportions of Students of Color

RUSMP Mathematics Classroom Observations, 2008-2011

- Old **facilities**
- Obsolete or absent **technology** (computers, student laptops, interactive white boards, internet access in class)
- Whistle-blowing or yelling to **communicate** with students
- Higher **student-teacher ratios**
- Students with no **access to textbooks** for homework
- Students **off-task**
- Lecture **format** (vs. problem-solving, discovery learning, real-world applications)
- **Non-Academic English** spoken by teachers and students
- Low **Expectations** (teachers and students)

Things More Likely to be Observed on Campuses with Smaller Proportions of Students of Color

RUSMP Mathematics Classroom Observations, 2008-2011

- Well-maintained **facilities**
- State of the art **technology** (computers, student laptops, interactive white boards, internet access in class)
- Assigned **textbooks** and access to online textbooks
- Individual white boards
- Inviting, print-rich **learning environments**
- Relaxed learning environments
- **Academic English** spoken by teachers and students
- **Teachers** with inviting, accessible **demeanors**
- **Problem-solving** explorations, **discovery** learning, **real-world** applications
- **Teacher and student-ownership** in the learning process

Teacher and Student Race/Ethnicity: State and Region

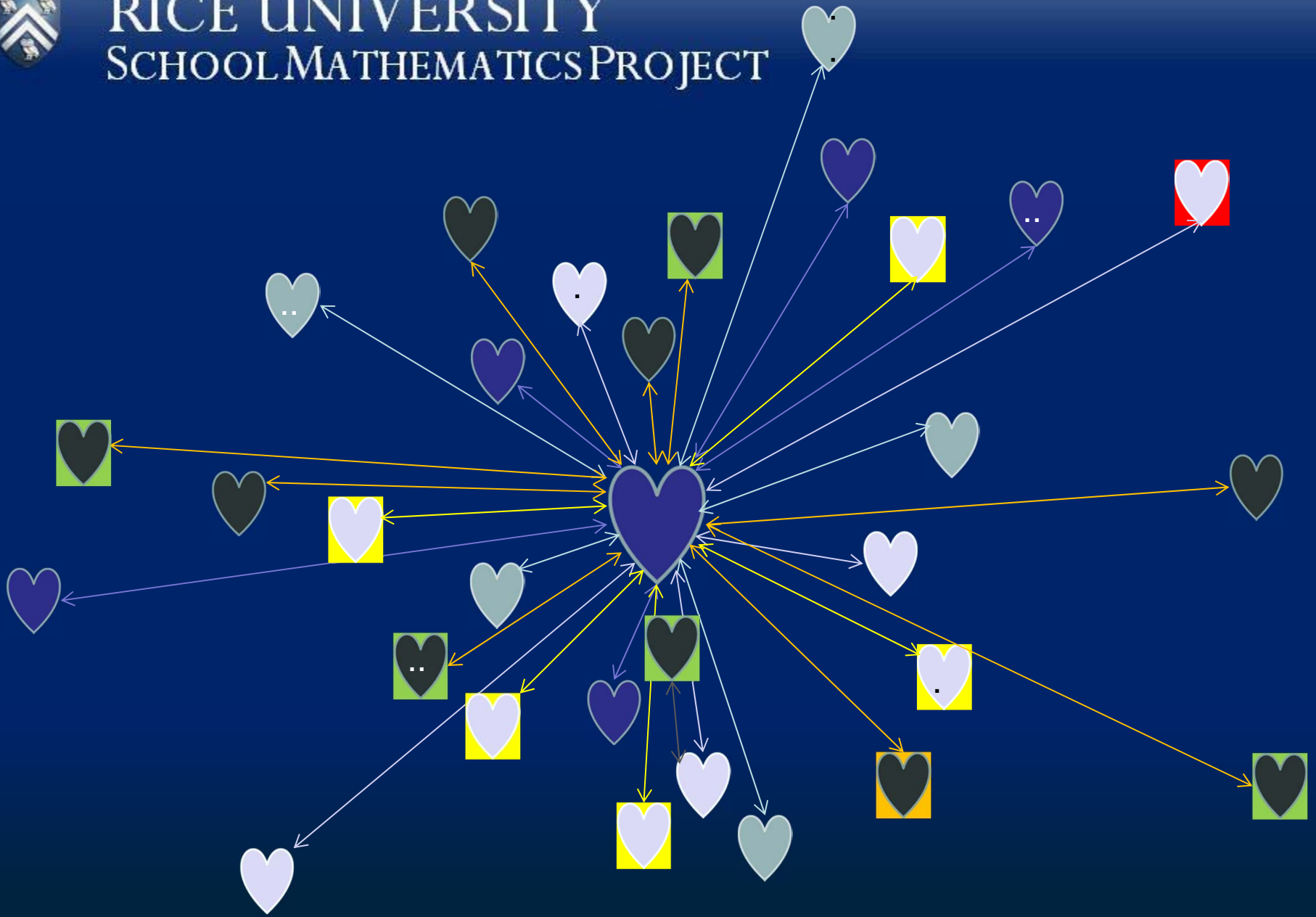
2010-2011		African American	Hispanic	White	Native American	Asian/Pacific Island
State of Texas	Teachers	9.3%	23.7%	63.9%	0.4%	1.3/0.1%
	Students	12.9%	50.3%	31.2%	0.5%	3.4/0.1%
Austin (Region XIII)	Teachers	3.8%	16.7%	76.2%	0.4%	1.4/0.2%
	Students	7.9%	44.9%	40.6%	0.4%	3.7/0.1%
Beaumont (Region V)	Teachers	17.2%	3.8%	77.5%	0.2%	0.6%
	Students	28.2%	14.9%	52.3%	0.7%	2.2/0.1%
Corpus Christi (Region II)	Teachers	2.1%	46.3%	49.6%	0.3%	0.6/0.1%
	Students	2.7%	73.8%	21.1%	0.3%	1.1/0.1%
Fort Worth (Region XI)	Teachers	7.4%	9.2%	80.6%	0.7%	0.8%
	Students	13.8%	32.8%	46.0%	0.8%	4.4/0.2%
Houston (Region IV)	Teachers	19.2%	16.8%	59.2%	0.4%	2.6/0.2%
	Students	19.8%	47.4%	24.7%	0.5%	6.0/0.1%

Teacher and Student Race/Ethnicity: State and Region (continued)

2010-2011		African American	Hispanic	White	Native American	Asian/Pacific Island
State of Texas	Teachers	9.3%	23.7%	63.9%	0.4%	1.3/.01%
	Students	12.9%	50.3%	31.2%	0.5%	3.4/0.1%
Huntsville (Region VI)	Teachers	4.7%	7.6%	85.8%	0.3%	0.6%
	Students	11.4%	30.3%	54.0%	0.5%	1.9/0.1%
Kilgore (Region VII)	Teachers	8.2%	4.5%	85.4%	0.4%	0.4%
	Students	18.3%	24.1%	54.3%	0.5%	0.8/0.1%
Richardson (Region X)	Teachers	15.5%	12.9%	67.5%	0.6%	1.8/0.1%
	Students	18.8%	41.3%	31.9%	0.6%	5.4/0.1%
San Antonio (Region XX)	Teachers	4.6%	41.8%	51.2%	0.3%	0.8/0.1%
	Students	6.2%	70.9%	19.4%	0.3%	1.5/0.1%



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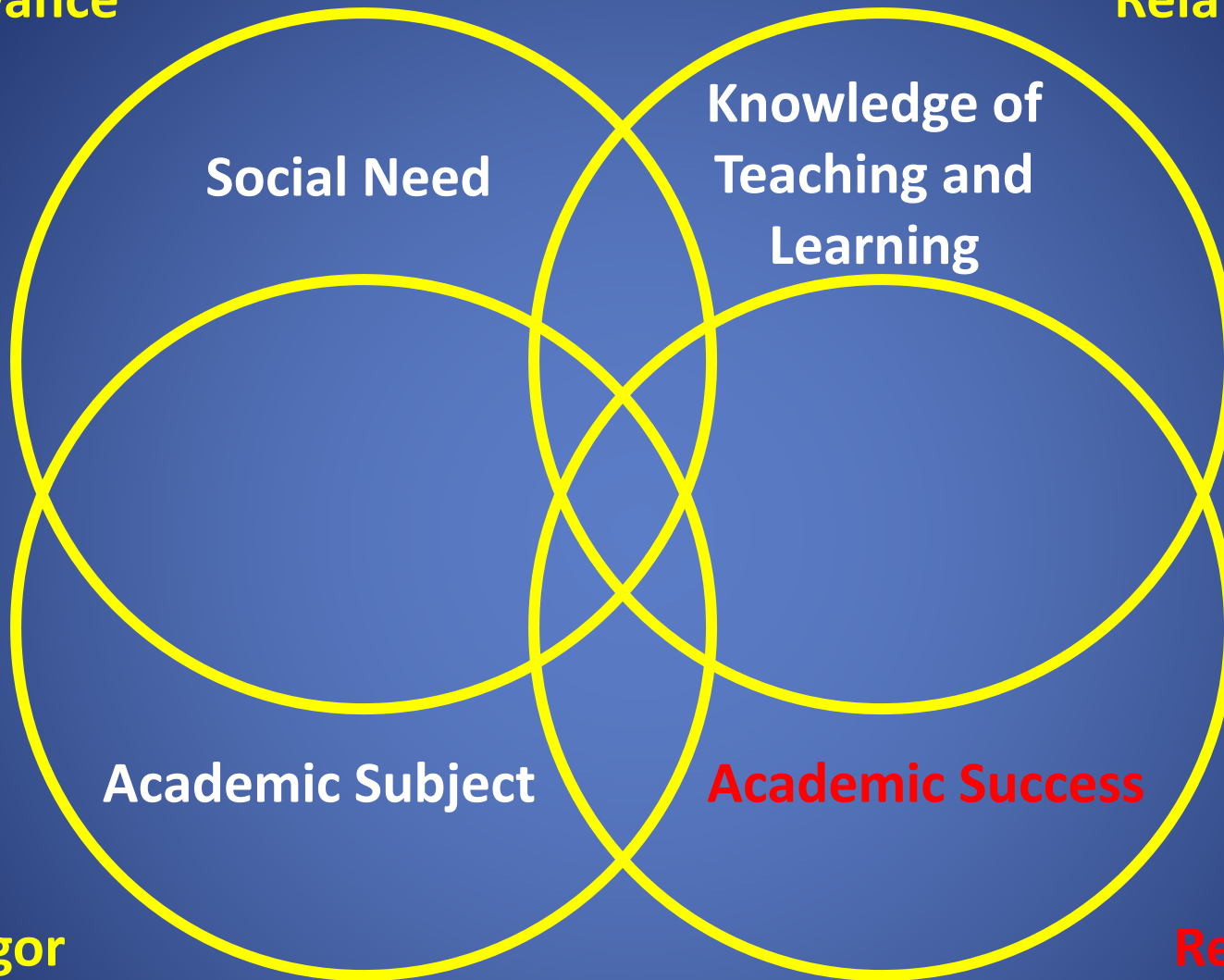


*“You are either a part of the
SOLUTION
or you’re a part of the **PROBLEM.**”*

Writer and activist , Eldridge Cleaver, 1968.

Relevance

Relationships

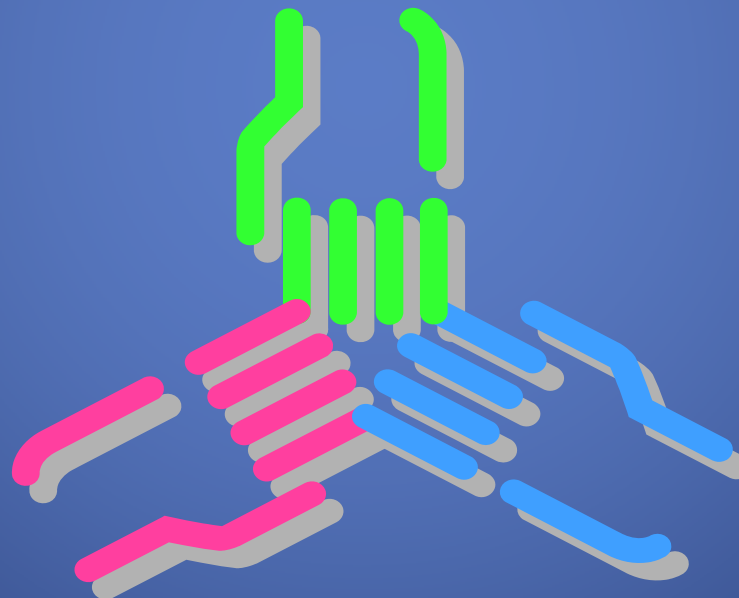


Rigor

Results

Robinson, E. & Robinson, M. (2007). Rigor, relevance, and relationships by design in high school mathematics. *NC Raising Achievement and Closing Gaps Conference*, March. **(Adapted)**

How to navigate the cultural issues and other key factors to ensure children acquire high-quality education?



Address Factors Correlated with the Black-White Achievement Gap on the NAEP

Children of Color are:

- More likely to suffer from low birth weight (**health** risk)
- More likely to live in **poverty**
- Less likely to live with both **parents**
- Likely to spend more hours watching **TV**
- **Read to** by their parents for fewer hours
- More likely to be **absent from school**.
- Less likely to attend schools offering **rigorous curriculums**
- Less likely to be taught by teachers with **good teacher preparation**
- Less likely to experience **parent participation** in school

What Are We to Do?

- 1) Broaden social networks and comfort zones.
- 2) Engage in real-world conversations about history, culture, cultural diversity, and equitable education.
- 3) Do not generalize unsubstantiated assumptions about groups of people.
- 4) Think of diversity awareness as a journey not a destination.

Milner, H. R. (2011). Understanding diversity: What's a parent to do? *The Blog of Harvard Education Publishing*. Retrieved from <http://www.hepg.org/blog/65>

Stereotype Threats

- 1) We all are affected by social identity forces (or threats) and we may overcome them, retreat intellectually, or retreat to the safety of a more homogeneous environment.
- 2) Self-affirmation exercises help counter negative beliefs that trigger stereotype threats.
- 3) Emphasize incremental views of intelligence (i.e., intelligence is an expandable characteristic).
- 4) Utilize mentoring and cross-cultural interactions.

Steele, C. (2010). *Whistling Vivaldi: And other clues to how stereotypes affect us*. New York: W. W. Norton & Company.

Reform Mathematics

All students should receive instructional support to:

- 1) value mathematics,
- 2) be confident in their ability to do mathematics,
- 3) become mathematical problem solvers,
- 4) learn to reason mathematically, and
- 5) learn to communicate mathematically.

National Council of Teachers of Mathematics (1989). *Curriculum and evaluation standards for school mathematics*. Reston, VA: NCTM.

Culturally Proficient Instruction



- Culture is a powerful, predominant force.
- There is cultural diversity within cultural groups.
- People have group as well as personal identities.
- The dominant culture serves different people in different ways.
- The unique needs of every culture must be respected.

Robins, K. N., Lindsey, R. B., Lindsey, D. B., & Terrell, R. D. (2006). *Culturally proficient instruction: A guide for people who teach* (2nd ed.). Thousand Oaks, CA: Corwin Press.

Enact High Expectations

- 1) Learn the inroads (“inside” information and “rules” for accessing best schools and best practices) and align with those who know.
- 2) Place your children in excellent, caring, and compatible learning environments and maintain a positive and supportive presence in the school for your children and their teachers.
- 3) Regularly interact with your children about the level and type of learning activities as well as the social interactions they experience in school.
- 4) Expect and positively encourage the best learning and teaching experiences for all concerned.

