

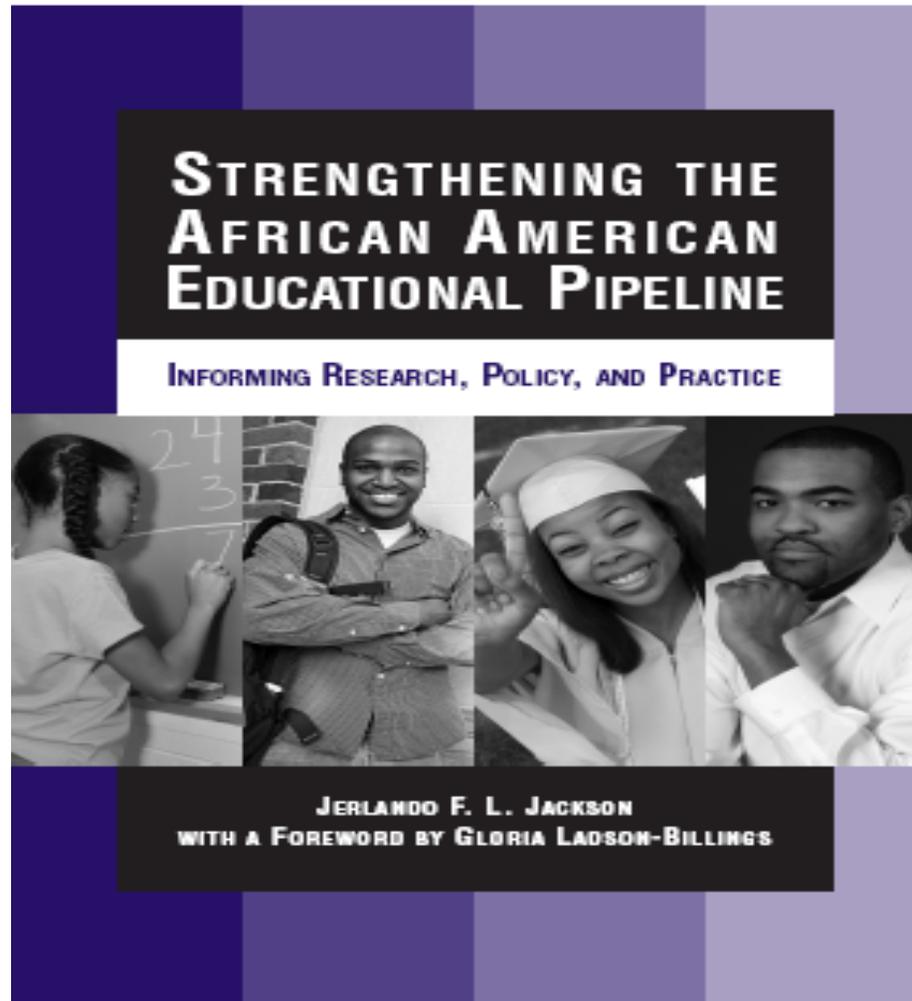
Reconceptualizing the African American Educational Pipeline: New Perspectives from a Systemic Analysis

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Presentation Outline

- Problematizing the African American Educational Pipeline
- National Context for the African American Educational Pipeline
- Extending the Pipeline Metaphor for Use in Education



Introduction

- **Key challenges** that have long plagued African Americans in their **pursuit of education**
 - Inequality
 - Disparate representation
 - Denied access to opportunity

Introduction

- **Discussions** in education focused on **research** and **policy** are hard pressed not to have a **major agenda item** centered on **improving the conditions** for African Americans
 - **Decades of research** have described the **dismal educational conditions** for African Americans (e.g., Hoffman, Llagas, & Snyder, 2003; Nettles & Perna, 1997),
 - Coupled with **federal legislation** targeted at **improving these conditions** (e.g., TRIO Programs)
 - However, the **results** have been **slow** and **insignificant**

Introduction

- Now we are operating in an era:
 - Affirmative action is **loosing support**
 - Targeted and preferential programs are **under attack**
 - Federal support for specific groups are **being downsized**
- In turn, a systemic understanding of the conditions for African Americans in the educational pipeline is needed.
 - Provide **appropriate implications** for policy makers to consider.

Problematizing the African American Educational Pipeline

Problematizing the African American Educational Pipeline

- When used in reference to education, the pipeline metaphor **elicits various responses**.
 - While **some may be impartial**, two camps have developed in response to the metaphor: (1) supporters and (2) critics.
- **Supporters** tend to find legitimacy in the use of the term as a **heuristic tool** to help explain the **representation** of a group across a **large and complex enterprise such as education**.

Problematizing the African American Educational Pipeline

- **Critics** tend to view the term as **limited** and **less representative** of the experiences of underrepresented populations.
 - Some critics (e.g., Bowen & Bok, 1998; Malveaux, 1995) have **offered alternative** metaphors (e.g., shape of the river and merry-go-rounds).
- The educational pipeline **metaphor is used** in this presentation to describe and depict **critical stages** in the education process for African Americans, both as students and professionals.
 - Permits **key decision makers** (e.g., researchers, policy makers, and practitioners) to examine the identified stages to **determine where additional attention** and **interventions may be needed**.

National Context of the Participation, Attainment, and Outcomes for African Americans in the Educational System

Table 1. Distribution of African American Students in PK-12 Schools

Category	1990	1999	Change
Pre-School			
Total	182,133 ^a	172,388	-5.4%
Elementary/ Secondary School			
Total	6,800,805	7,731,405	13.7%
High School Completion			
Total	19,136,040	19,817,201	3.6%

Note: ^a represents 1991. Enrollment counts for pre-school total enrollments were based on the number for each year: 1,239,000 in 1991; and 1,214,000 in 1999. Enrollment counts for elementary/secondary school students were based on the number for each year: 41,217,000 in 1990; and 46,857,000 in 1999. High School completion counts were based on the number for each year: 24,852,000 in 1990; and 26,041,000 in 1999.

Table 2. Distribution of African American Professionals in PK-12 Schools

Category	1990	1999	Change
School Teachers			
Total	221,102	244,035	10.4%
Public	211,640	227,505	
Private	9,462	16,530	
School Principals			
Total	7,413	10,813	45.9%
Public	6,770	9,239	
Private	643	1,574	

Note: Employment counts for school teachers were based on the number for each year: 2,915,773 in 1990; and 3,451,315 in 1999. Employment counts for school principals were based on the number for each year: 102,770 in 1990; and 110,021 in 1999.

Table 3. Distribution of African Americans Students in Higher Education

Category	1990	2000	Change
Undergraduate Enrollment			
Total	1,247,000	1,730,000	38.8%
Men	485,000	635,000	31.1%
Women	762,000	1,095,000	43.6%
Bachelor's Degree			
Total	65,341	111,307	70.3%
Men	26,956	38,103	41.4%
Women	41,013	73,204	78.5%
Master's Degree			
Total	16,139	38,265	137.1%
Men	5,709	11,568	102.6%
Women	10,430	26,697	156.6%
First Professional			
Total	3,575	5,416	51.5%
Men	1,672	2,110	26.2%
Women	1,903	3,306	73.7%
Doctoral Degree			
Total	1,003	1,604	59.9%
Men	417	587	40.8%
Women	586	1,017	73.5%

Note: Enrollment counts for undergraduate total enrollments were based on the number for each year: 13,819,000 in 1990; and 15,312,000 in 2000. Bachelor's degree completion counts were based on the number for each year: 1,081,280 in 1990; and 1,244,171 in 2000. Master's degree completion counts were based on the number for each year: 328,645 in 1990; and 468,476 in 2000. First professional degree completion counts were based on the number for each year: 71,515 in 1990; and 79,707 in 2000. Doctoral degree completion counts were based on the number for each year: 37,527 in 1990; and 40,744 in 2000.

Table 4. Distribution of African American Professionals in Higher Education

Category	1990	2000	Change
Full-Time Faculty			
Total	23,225	29,222	39.8%
Men	12,483	14,660	26.7%
Women	10,742	14,562	65.9%
Full-Time Admin.			
Total	11,796	14,047	19.1%
Men	5,997	6,160	2.7%
Women	5,799	7,887	36.0%
University CEOs			
Total	177 ^a	213 ^b	20.3%
Men	142	151	6.3%
Women	35	62	77.1%

Note: Employment counts for full-time faculty were based on the number for each year: 514,662 in 1990; and 571,599 in 2000. Employment counts for full-time administrators were based on the number for each year: 137,561 in 1990; and 158,270 in 2000. ^a represent 1993 and ^b represents 2003. University CEO counts were based on the number for each year: 2,802 in 1993 and 3,191 in 2003.

Extending the Pipeline Metaphor for Use in Education: Knowledge Derived from Applied Science

Pipeline Metaphor

- Critics suggest that the pipeline metaphor **does not capture the dynamic nature** or the **multiplicity** of the educational process in general, and the **African American experience** in particular.
- **Conventional wisdom** does suggest that a **pipeline is straight**
 - Criticisms find **understandable support** throughout the field of education.

Pipeline Metaphor

- A closer examination of the **knowledge base** derived from **applied science responses to most**, if not all of these **criticisms**.
 - Applied science is the exact science of applying knowledge from one or more natural scientific fields to practical problems.
- The next section discusses:
 - materials transported
 - supply system
 - types of pipes
 - pipe fittings
 - pipe problems

Materials Transported

- Pipes are used to **transport** and/or **protect** various types of materials.
- A material can be transported for **various outcomes**.
 - For example, **hot water** is transported for **washing**, **cold water** for **cooking**, **filtered water** for **drinking**, and **treated water** for **laundry** and **showers**.
- The **properties** of the transported material **determine the type** (e.g., water) of pipe used.

Materials Transported

- I hasten to draw the crude comparison between materials and humans, but the pipeline metaphor requires it.
 - **Basic product** and **outcome variation**
- A great deal of variation exists among the African Americans that pass through the educational pipeline.
 - (1) status and (2) ability group
 - The status refers to whether the individual passes through as a **student** or **professional** (e.g., faculty and principal).
 - Variation in ability level and **preparedness to engage** in the educational pipeline exist.

Supply System

- The supply system **disperses water throughout the house** and includes three functions:
 - (1) **brings** water **into** the house
 - (2) **divides** the water into **hot** and **cold** water lines
 - (3) **distributes** the water to **various** fixtures (e.g., sinks) and appliances (e.g., washing machine).
- Likewise, the **educational process** has **filters** throughout the pipeline.

Supply System

- First, **prior to entering** the educational pipeline, both as students and professionals, **pre-entry** characteristics (e.g., human and social capital) **affect the overall experience**.
- Second, students based on their **academic abilities** and **sometimes other characteristics** (e.g., bad behavior) are **divided into ability groups**: (1) low; (2) average; and (3) high.
- Third, the **pre-school experiences** and **individual assessment** (i.e., ability group) may **influence** whether the student and professional **attends or works** at a low, average, or high performing institution.

Types of Pipes

- The types of pipes that construct the pipeline vary considerably in material type, cost, usage, and size.
 - *Cast iron pipes*, used mostly before the 1960s, are **strong** and **generally durable**.
 - In good condition, a cast iron pipe **can last for decades**; however, it **may rust**.
 - *Plastic pipes* are **inexpensive** and **easy to install**.
 - Most commonly used for **drain pipes**, plastic pipes are **strong**, **long lasting**, and **impermeable to most chemicals**.

Types of Pipes

- Older homes may have *steel pipes* for supply and drain lines.
 - While steel is a strong pipe, **rarely if ever** do they **last more than 50 years**.
 - **They rust** like cast iron pipes, but may also **become clogged with mineral deposits**, thus causing low water pressure.
- *Copper pipes* resists corrosion and are **extremely long lasting**, they are prime candidates for supply lines.
 - While reasonably priced, copper pipes are **more expensive than plastic pipes**.
- Generally, **cast iron pipes** are viewed as the **highest quality**, followed by **steel, cooper, and plastic pipes**.

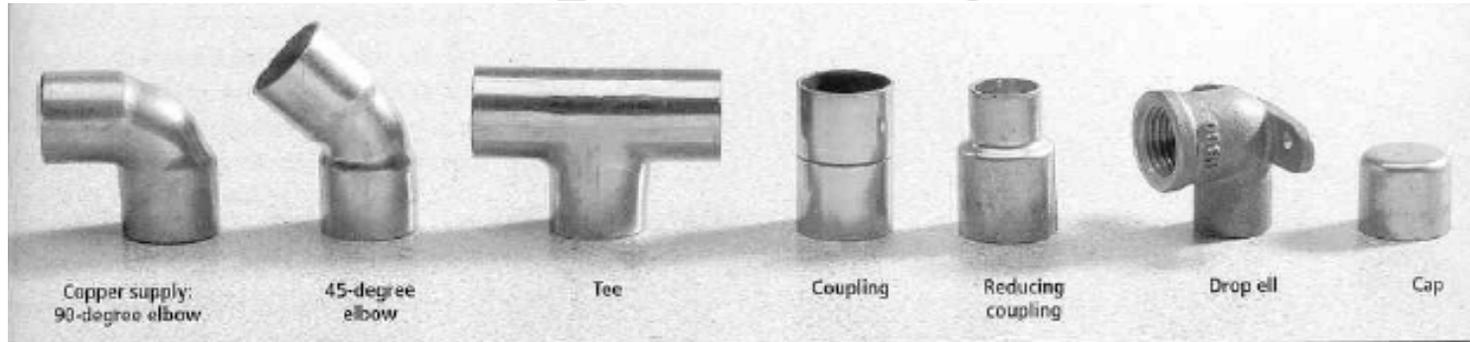
Types of Pipes

- Equally so, the **educational pipeline varies** along the **same four lines**.
 - First, **students** with various backgrounds and abilities, are **filtered** into various pipelines **based on quality of experience**.
 - Second, often the **variance in quality** of an educational pipeline can be **linked to funding**.

Types of Pipes

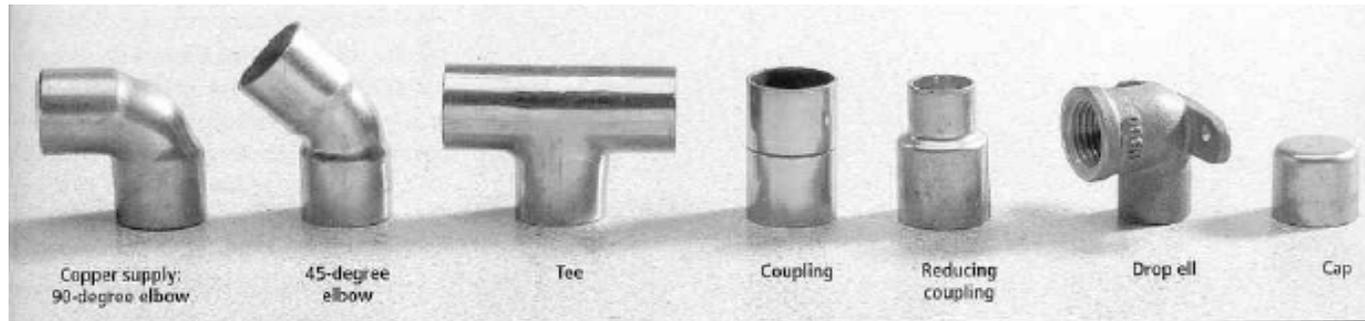
- Third, **usage** of educational pipelines varies **based on perceived and actual outcomes**.
 - These usages may include: education to work (e.g., career and armed forces) and postsecondary education (e.g., two year institution and professional degree).
- Lastly, in many ways the **size** of the educational pipeline is **linked** to its **quality**.
 - For example, **high performing systems** tend to be **smaller**, while **lower performing systems** tend to be **larger** (Commission on Chapter 1, 1992).

Pipe Fittings



- A pipe fitting is **any connector** (except a valve) that allows you to **join pipes** of **similar or dissimilar** size or material in a straight run or at an angle.
- Fittings fall into **four categories**: (1) couplings; (2) elbows; (3) tees, Ys, and crosses; and (4) caps.

Pipe Fittings



- **Couplings** are fittings used to **join pipes** in a **straight line**.
- **Elbows** permit pipes to **turn corners**.
- **Tees, Ys, and crosses** allow pipes to branch into **multiple lines**.
- **Caps** are used to **seal the end of pipes**.

Pipe Fittings

- The educational pipeline is equally dynamic as described above.
 - There are **many areas** within the educational pipeline where **couplings** would describe the **straight nature of movement**.
 - The educational pipeline has **bends and curves** which are better **explained by elbow fittings**.
 - While the educational pipeline is often **discussed as a unified system**, it consists of **multiple lines** which makes understanding it complex.

Pipe Fittings

- Many of these **bends, curves, and multiple lines** can be explained by **alternative educational routes** such as charter schools, voucher schools, alternative schools, and on-line colleges.
- The end point of a line **may not be “free flowing”** to permit exit, in turn a **cap** may be present to **cause stoppage**.
- In many ways, this could **explain stages** in the educational pipeline where African Americans **experiences problems moving through and out** (e.g., undergraduate degree completion and doctoral education).

Pipe Problems, Symptoms, Repairs, and Solutions

Pipe Problems, Symptoms, Repairs, and Solutions

- Considering the **level of daily activity** and **strain** placed on pipelines, it is inevitable that **problems arise** and **repairs are needed**.
- With any repair job, one must **figure out** the problem to **determine a repair** or solution.
 - **Small exposed repairs** can be easily **tackled by a practitioner** with no special knowledge or skills.
 - The work becomes **more challenging** when the **problems get larger** and **less transparent** thus requiring **skills** that **general practitioners may not possess**.

Pipe Problems, Symptoms, Repairs, and Solutions

- What makes these repairs **more difficult** may not be the actual work, but rather **obstacles to the job**.
- The pipeline is not simply straight, it has multiple lines and curves **requiring some maneuvering to locate the problem**.
- The nature of the repair is further complicated, in that, the **pipeline material dictates** the kind of tool and repair options.

Pipe Problems, Symptoms, Repairs, and Solutions

- Educational pipelines too must be **approached differently** accordingly to the **properties** (e.g., cast iron, steel, cooper, and plastic) of the system.
 - For example, **some** educational pipelines are **armed with** adequate funding, high performing staff, and high achievers (e.g., cast iron and steel pipes), while the **opposite is true for other** educational pipelines (e.g., cooper and plastic pipelines).
- Regardless of the type of educational pipe, there are some **common challenges** and **problems** that they all face.

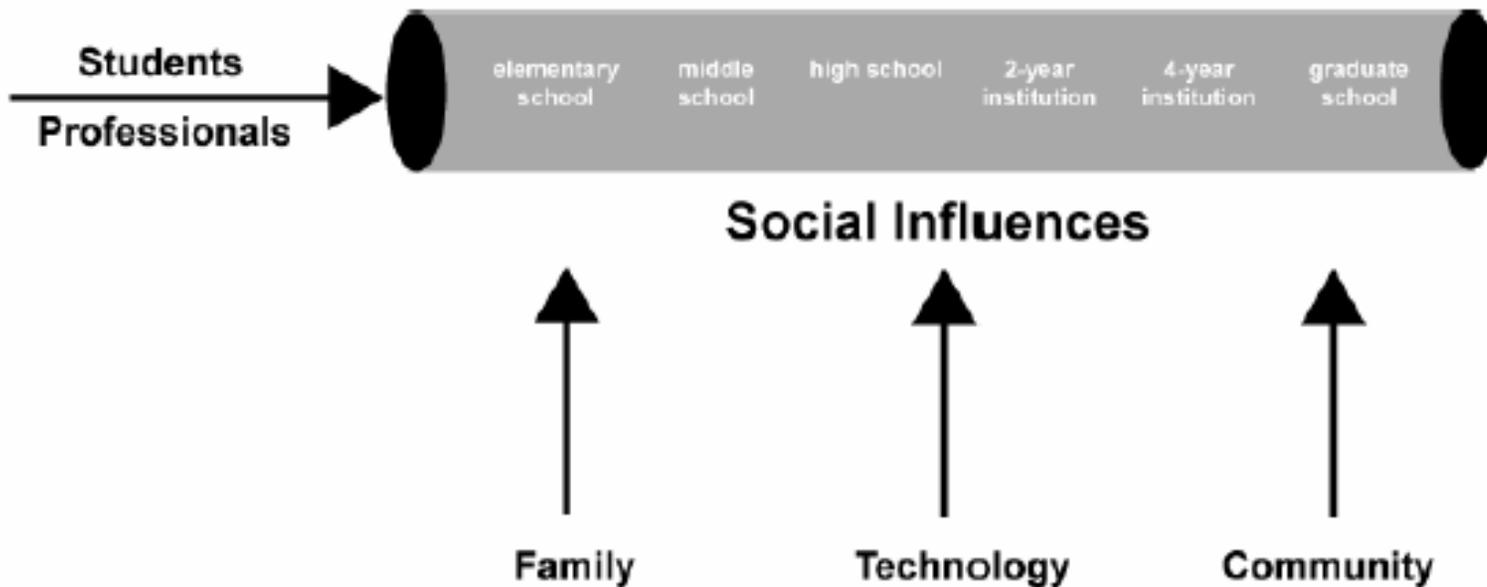
Figure 3. Common African American Educational Pipeline Problems and Repairs Chart

Problem	Symptom	Repair	Solution
Clogged Pipe	Stages within the educational pipeline where African Americans are stopped from forward progress (e.g., two-year institutions and doctoral studies).	Perform evaluation to determine factors, both institutional and individual, that lead to marginal academic performance at identified stage of the educational pipeline.	Implement educational intervention based on the findings of the evaluation.
Cracked Pipe	Stages within the educational pipeline where African American students may become damaged in the learning process (e.g., being told that they are not smart and being placed in low ability groups without appropriate opportunity to perform).		
Leaky Pipe	Stages within the educational pipeline where African Americans frequently exit prematurely (e.g., high school and college drop out).		
Noisy Pipe	Stages within the educational pipeline where African Americans start to experience significant problems and are slowed down (e.g., proficiency concerns in reading and math classes).		
Frozen Pipe	Stages within the educational pipeline when African Americans experience challenges (e.g., chilly climate) related to institutional culture and/or climate (predominantly White college or university).		

Closing Thoughts

- An increasingly **competitive global market** and the health of the United States' **workplace demand** that the education system **fully develop** all available **human talents**.
- A **systemic effort** between PK-12, higher education, and social influences (e.g., community and family) need to be developed **to address America's competitiveness** in the global market; thus, **repairing** our educational pipeline framework.

Figure 1. African American Educational Pipeline Framework



Closing Thoughts

- John W. Gardner once noted
“The society which scorns excellence in plumbing as a humble activity and tolerates shoddiness in philosophy because it is an exalted activity will have neither good plumbing nor good philosophy: neither its pipes nor its theories will hold water.”

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