Communicating and Learning from HBCU Successes with Benchmarking Science

Jason Coupet
School of Public and International Affairs
North Carolina State University

Motivations

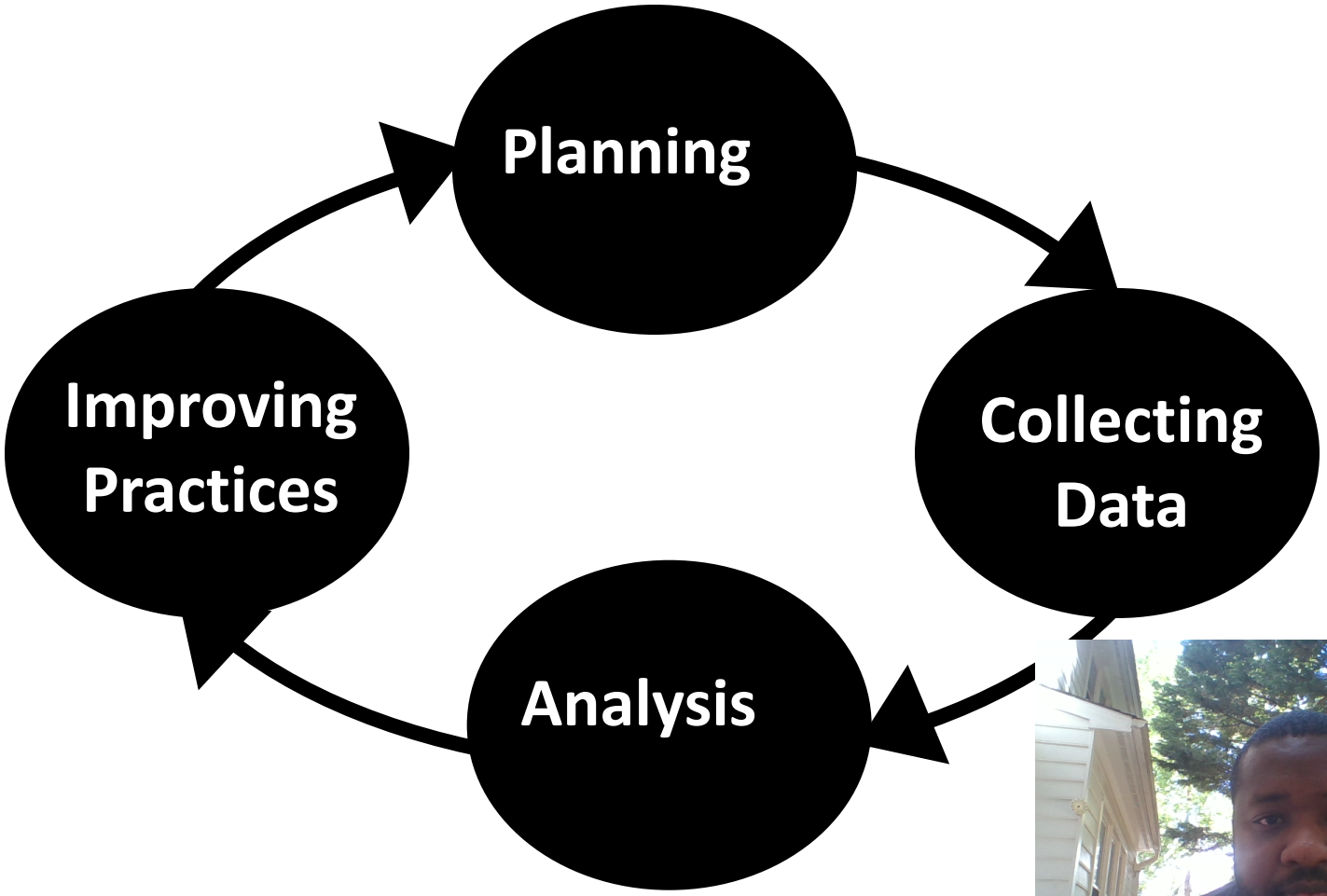
HBCUs

- Literature shows distinct advantages for Black students
- Closure for many, mergers proposed
- Not a homogenous group, HBCUs are different organizations
- Those differences mean HBCUs can learn from each other

Benchmarking HBCUs

- Benchmarking is a method for organizations to identify and import best practices using data from peers
- Organizations collect data from peers and use this data to learn from each other, communications successes and challenges

Benchmarking Process



Data Envelopment Analysis

- DEA uses linear programming to weight and aggregate inputs and outputs in a way that results in a single comprehensive productivity measure for each school

- Performance score of a school is given as a percentage of the productivity of its most productive peers.

    - 100% assigned to “top performers”

- Most importantly, DEA groups similar organizations by their input and output mixes

    - For instance, HBCUs with a similar student body likely to be compared to each other

Data Envelopment Analysis

Functional Form

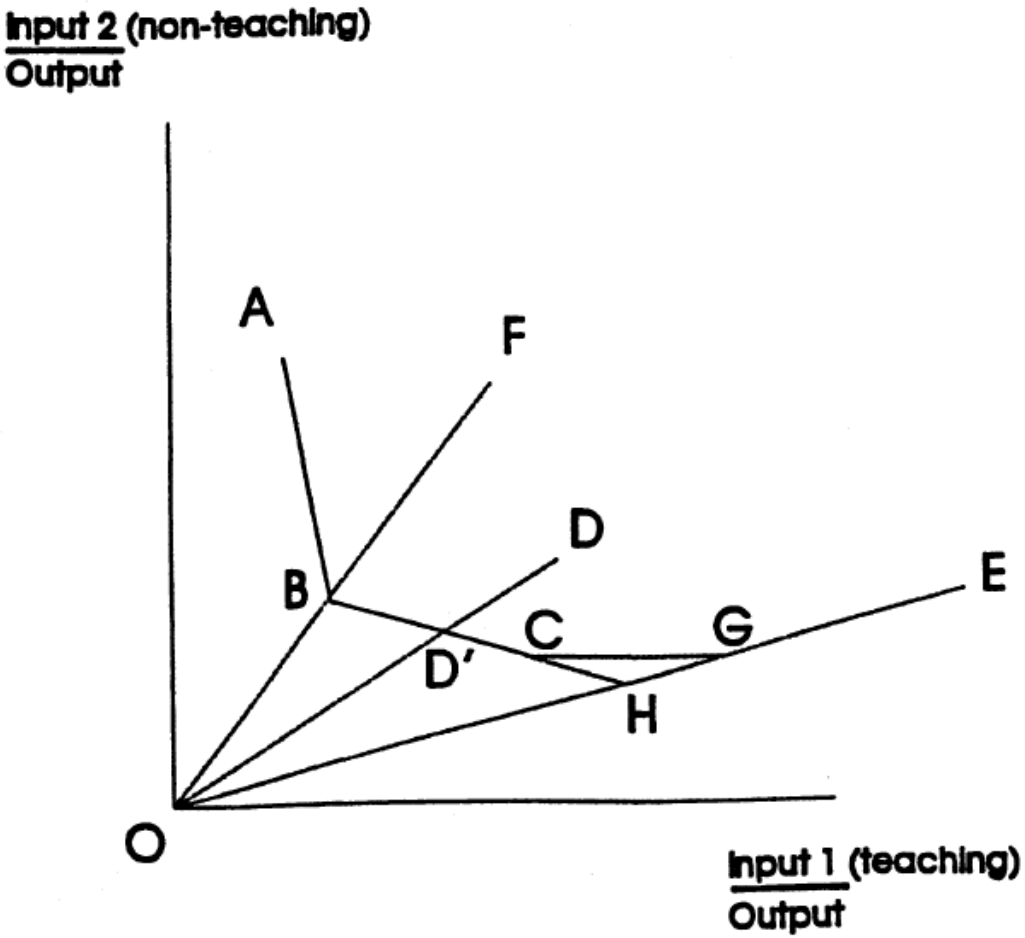
$$\text{Max: } h_k = \frac{\sum_{r=1}^{s} (u_{rk} y_{rk}) \quad r = 1,\ldots,s \text{ (outputs)}}{\sum_{i=1}^{m} (v_{ik} x_{ik}) \quad i = 1,\ldots,m \text{ (inputs)}}$$

$$\text{S. } T. \frac{\sum u_{rk} y_{rj}}{\sum v_{ik} x_{ij}} \leq 1,\ j = 1,\text{K}\ ,n(\text{dmu's})$$

$$u_{rk} \geq \epsilon > 0,\quad r = 1,\text{K}\ ,s$$

$$v_{ik} \geq \epsilon > 0,\quad i = 1,\text{K}\ ,m$$

Data Envelopment Analysis



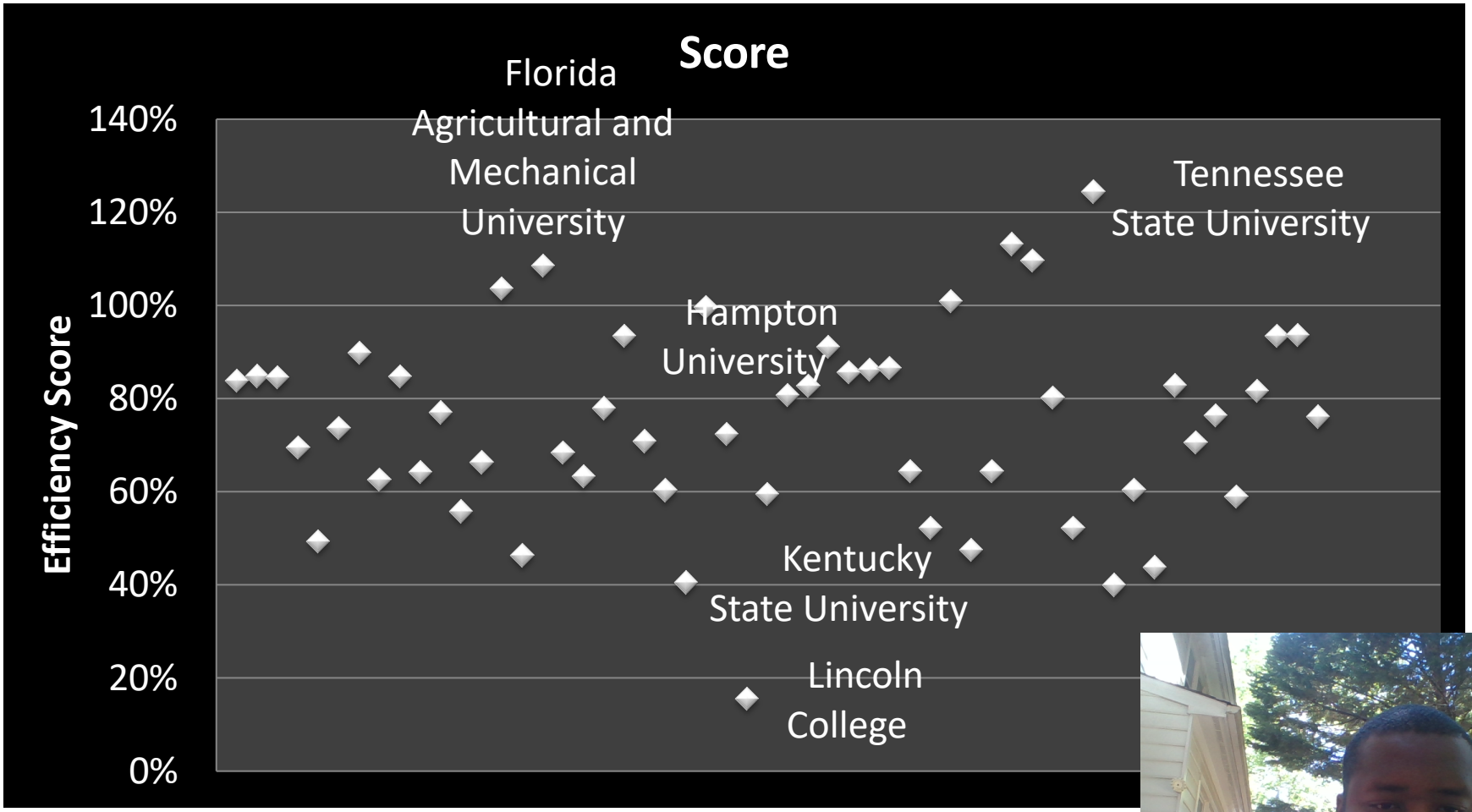
Inputs/Outputs

Inputs	Output
• SAT Median Scores • Academic Support Expenditures • Instructional Support Expenditures(Faculty) • Student Services Expenditures • Operational Expenditures	• Graduation Rate •Retention Rate

Peers

	DMU	Score	SAT	TE	ACA	INS	SS	OP	BA	E
78	Fisk University	46.35%	0.3	0.56	0	0	0.14	0	0.46	
80	FAMU	108.59%	0.42	0	0	0	0.08	0.5	1.09	1
81	Florida Memorial University	68.40%	0.52	0.27	0.11	0.1	0	0	0.68	
83	Fort Valley State University	63.37%	0.49	0.4	0	0	0.11	0	0.63	
88	Grambling State University	77.93%	0.52	0.13	0.05	0.15	0.04	0.11	0.78	
96	Hampton University	93.44%	0.48	0.43	0.05	0	0.05	0	0.93	
108	Jackson State University	70.86%	0.35	0	0.02	0.11				
110	Johnson C Smith University	60.34%	0.32	0.54	0	0.13				
115	Kentucky State University	40.55%	0.48	0.37	0.03	0.02				

Efficiency Scores



DEA Usefulness for HBCUs

- Existing Data allows HBCUs to learn from each other
  - Peer groupings are based on DEA weights, not on reputation or norms
  - Peer groupings likely have a similar resource structure
- Communicate successes to policy makers
  - Ex: Paul Quinn College
- Caution: Context still quite important
  - Lower performance scores not indicative necessarily of wrongdoing or mismanagement
  - Other constraints might be present

Past Lessons from Benchmarking with HBCUs

- HBCUs are typically outproduce their peers given the institutional resource constraints. The “doing more with less” axiom seems true

- Federal funding helps HBCU performance

- Reputational claims can be spurious

What now?

- Can HBCUs (and their departments) work with each other to lean from benchmarking and management science?
- DEA doesn’t open black box, but can suggest which black boxes to open
- DEA, and other management science techniques, might aid in HBCU planning and organizational learning