Program Quality Assessment

Duane K. Larick

Senior Vice Provost for Strategic Initiatives and Dean of the Graduate School

Two Approaches to Program Quality Assessment

- External Institutional and Program Rankings
- Internal Assessment of Program "Quality"

# Value of External Rankings

- Shapes perception of the Institution for
  - Prospective students
  - Prospective faculty/staff
  - Other institutions
  - Funding agencies
  - Public at large
- Tool for measuring progress in strategic direction
- Can help inform selection of university metrics and benchmarks
  - Track some of the same metrics

Limitations of External Rankings

- Multiple rankings, with different audiences, methodologies and results

- Not all universities participate

- No agreement in Higher Ed about what to measure and how to rank institutions

- No agreement on definitions for specific metrics

- Metrics (Data) are profoundly Undergraduate
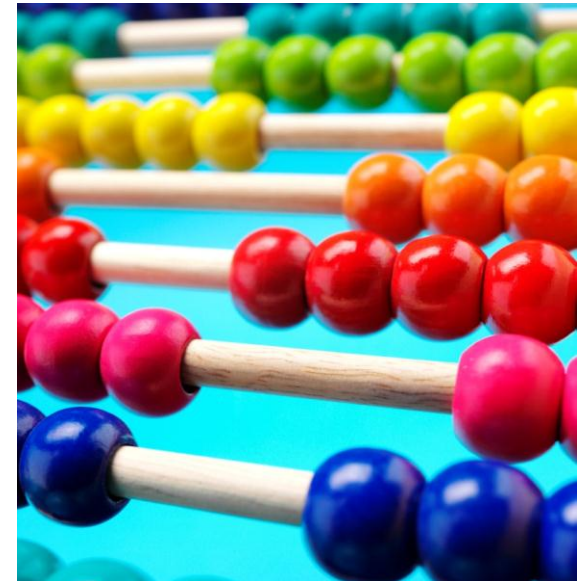
Example of Rankings

- US News and World Report
  - Based on expert opinions and statistical indicators of quality of faculty, research & students
- Center for Measuring University Performance
  - Annual report on top American research universities
- QS World University Rankings
  - Ranks top 400 international universities
- National Science Foundation
  - R&D expenditures
  - STEM fields and sub-fields
- National Research Council
  - Assessment of doctoral programs

The Center for Measuring University Performance

mup.asu.edu/research.html

- **Purpose**: To improve the performance of American research universities

- **Population**: Institutions with more than $20 million in annual federal research expenditures

- **Frequency**: Annual report on *The Top American Research Universities*
    - 2010 report released Fall 2011

The Center for MEASURING UNIVERSITY PERFORMANCE

The Center for Measuring University Performance

2010 Center Measure Categories & Sources

mup.asu.edu/research.html

Category	Data Source
Total research expenditures x $1000 (2008)	NSF/SRS Survey of R&D Expenditures at Universities and Colleges
Federal research expenditures x $1000 (2008)	NSF/SRS Survey of R&D Expenditures at Universities and Colleges
Endowment assets x $1000 (2009)	NACUBO Endowment Study as reported in the *Chronicle of Higher Education*
Annual giving x $1000 (2009)	Council for Aid to Education's Voluntary Support of Education (VSE) Survey
National academy members (2009)	National Academy of Sciences, National Academy of Engineering, and Institute of Medicine membership online directories
Faculty awards (2009)	Directories or web-based listings for multiple agencies or organizations.
Doctorates granted (2009)	NCES IPEDS Completions Survey, doctoral degrees awarded between July 1 and June 30.
Postdoctoral appointees (2008)	NSF/Division of Science Resource Statistics (SRS) Survey of Graduate Students and Postdoctorates in Science and Engineering.
Middle 50% SAT Math & Verbal (2008)	NCES IPEDS Survey, SAT and ACT Scores.

QS World University Rankings

www.topuniversities.com/university-rankings/world-university-rankings

Background:

- 2011/12 edition, published September/October 2011
- Previously Thompson Reuters
- Evaluates over 700 universities and ranks top 400

Methodology:

- 40% academic reputation from global survey
- 10% employer survey
- 20% citations/faculty from Sciverse Scopus
- 20% faculty/student ratio
- 5% proportion of int'l students
- 5% proportion of int'l faculty

National Science Foundation

- FY 2009 Edition (Released July 2011)

- **Population**: Accredited US Universities offering programs in science and engineering.

- **Rankings**:

  - Institutions ranked by FY 2009 R&D Expenditures

  - Institutions ranked by Science & Engineering Fields (06-09); subfields FY 2009

www.nsf.gov/statistics/nsf11313/content.cfm?pub_id=4065&id=2

Key Data Sources

- IPEDS

- Common Data Set

Integrated Postsecondary Education Data System (IPEDS)

- System of interrelated surveys conducted annually by the U.S. Department's National Center for Education Statistics

- Gathers info from every institution that participates in federal student financial aid programs

Data Collected by IPEDS

1. Institutional Characteristics
2. Institutional Prices
3. Enrollment
   - Fall Enrollment
   - Residence of First-Time Students
   - Age Data
   - Unduplicated 12-mo Head Count
   - Instructional Activity
   - Total Entering Class
4. Student Financial Aid

5. Degrees & Certificates Conferred (Completions)
6. Student Persistence & Success
   - First-Year Retention Rates
   - Graduation Rates
7. Institutional Resources
   - Human Resources
   - Finances

IPEDS Data Center   http://nces.ed.gov/ipeds/datacenter/

Common Data Set (CDS) Initiative

- The CDS is a set of standards and definitions of data items

- Collaborative effort among higher education data providers/institutions and publishers
  - Publishers include College Board, Peterson's, and U.S. News & World Report

- Goals
  - Improve the quality and accuracy of information provided to all involved in a student's transition into higher education
  - Reduce the reporting burden on data providers

Common Data Set Sections

A. General Information

B. Enrollment and Persistence

C. First-Time, First-Year (Freshman) Admission

D. Transfer Admission

E. Academic Offerings & Policies

F. Student Life

G. Annual Expenses

H. Financial Aid

I. Instructional Faculty & Class Size

J. Degrees Conferred

Common Data Set Initiative

http://www.commondataset.org/

Academic Program Assessment at NC State (Internal Assessment)

- Tied to New Strategic Planning Initiative
  - Review Summer Education
  - Review Distance Education
  - Review Academic Science/Life Science Programs
  - Modify Academic Planning Process (prioritization)
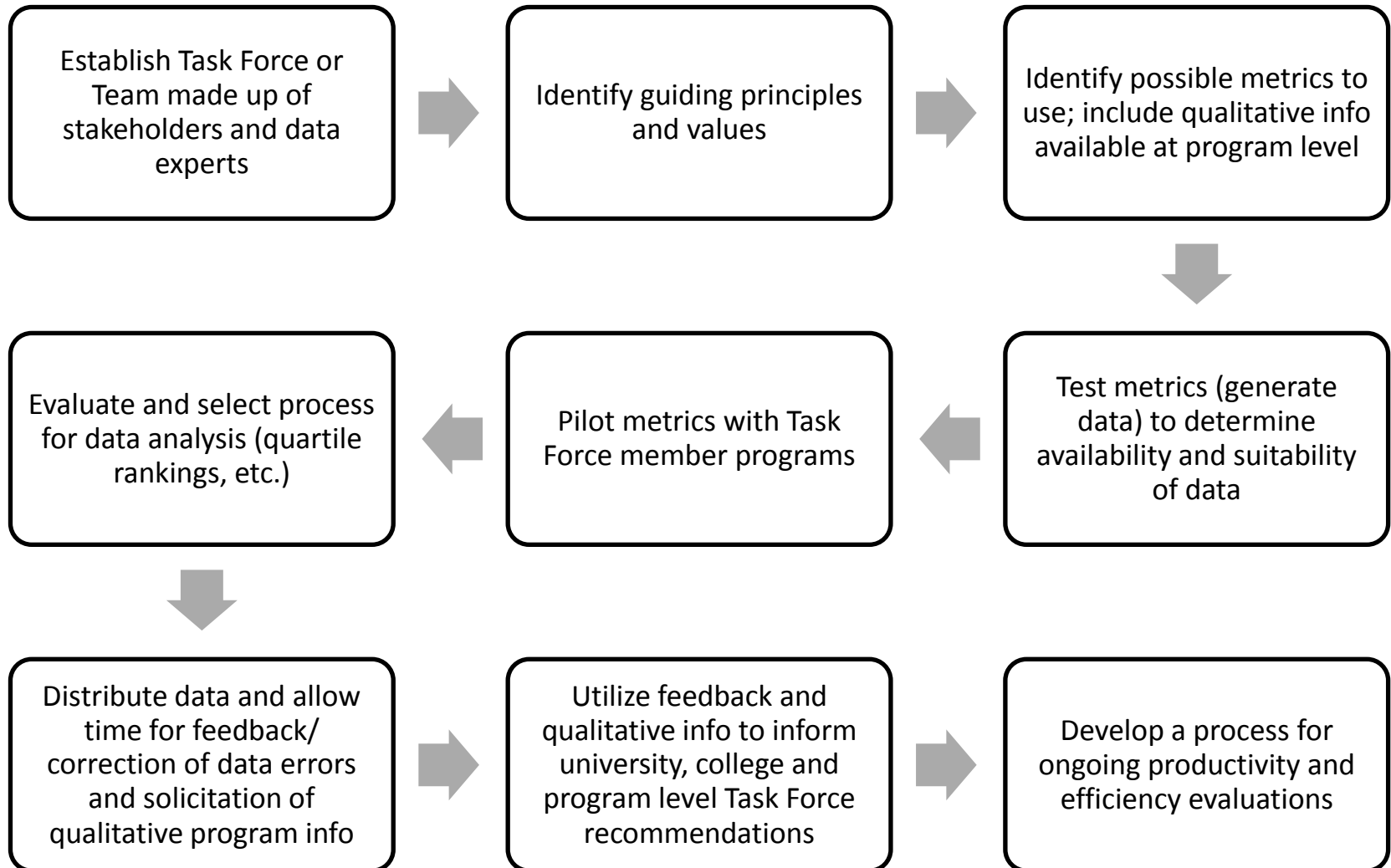 - Review Academic Program Efficiency and Effectiveness of Existing Programs

More info:
**go.ncsu.edu/
academic-program-review**

Academic Program Review Process

| Establish Task Force or Team made up of stakeholders and data experts | → | Identify guiding principles and values | → | Identify possible metrics to use; include qualitative info available at program level |

| Evaluate and select process for data analysis (quartile rankings, etc.) | ← | Pilot metrics with Task Force member programs | ← | Test metrics (generate data) to determine availability and suitability of data |

| Distribute data and allow time for feedback/ correction of data errors and solicitation of qualitative program info | → | Utilize feedback and qualitative info to inform university, college and program level Task Force recommendations | → | Develop a process for ongoing productivity and efficiency evaluations |

Assessment of Academic Programs

Guiding principles

- The process must be open and effectively communicated to stakeholders

- Since no data set is perfect, not all departments and programs are measured equally well by each metric

- All metrics must be clearly defined and the TF should help stakeholders understand the data

- The choice of metrics will likely influence future behaviors

- The need for transparency must be balanced with the need to avoid putting programs in jeopardy

- Both quantitative and qualitative data should be used - no single or group of metrics can be used to identify actions to be taken, TF should add judgment in recommending actions

Questions to Answer

- Which programs are the most and least productive?

- Which programs are the most and least effective in graduating students in a timely manner?

- Which programs have the most and least demand?

- Which programs were the most and least efficient in the use of faculty resources?

- Course Review

  – Eliminate inactivate courses

  – Re-establish minimum class sizes

Metrics for Evaluation

Metric	Level
Headcount enrollment	Degree Program
Headcount enrollment/Faculty number	Degree Program
Degrees awarded	Degree Program
Degrees awarded/Faculty number	Degree Program
Time to degree	Degree Program
4-year graduation (MR); 6-year (DR)	Degree Program
Applications received	Degree Program
Applications/Faculty number	Degree Program
Selectivity (admitted/application)	Degree Program
Yield (enrolled/admit)	Degree Program
Graduate SCH's offered	Degree Program
Graduate SCH's/Faculty number	Degree Program

Additional Information

Background Metrics	Level
Enrollment by ethnicity	Program
Enrollment by gender	Program
Outside graduate committee service	Department
Student credit-hours taken outside the department	Department
Expenditure Data (Delaware Study Data)	Level
Instruction expenditures/SCH	Department
Instructional expenditures indexed to State funding formula	Department
Instructional expenditures 25th%ile national norm	Department
Instructional expenditures 75th%ile national norm	Department
Sponsored program expenditures/FTE faculty	Department

Doctoral Programs Sample Data

Metric	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13
Description	Enrollment	Enrollment / Faculty	Degrees Awarded	Degrees Awarded / Faculty	Mean Time to Degree	6-year Completion Rate	Applications	Applications / Faculty	Selectivity	Yield	Student Credit Hours	SCHs / Faculty	Graduate Faculty Count
Units	Headcount	Ratio	Headcount	Ratio	Years	Percent	Headcount	Ratio	Percent	Percent	Count	Ratio	Headcount
University	**48.2**	**2.6**	**6.5**	**0.3**	**5.9**	**43.5%**	**67.8**	**3.0**	**39.6%**	**58.1%**	**677.4**	**33.1**	**28.0**
College of Transformation	**49.9**	**6.8**	**4.4**	**0.7**	**6.9**	**34.9%**	**22.9**	**3.0**	**56.1%**	**79.8%**	**492.4**	**66.6**	**8.9**
Program A	101.0	20.3	11.7	2.3	7.9	18.4%	42.3	8.5	58.3%	85.1%	683.5	137.2	5.0
Program B	39.3	6.6	1.8	0.3	5.6	73.3%	23.3	3.9	48.6%	82.4%	828.5	138.1	6.0
Program C	43.0	2.2	0.9	0.0	5.5	25.0%	27.0	1.4	60.5%	73.5%	879.5	44.8	19.7
Program D	37.7	3.1	4.0	0.3	6.7	40.0%	20.7	1.7	43.5%	81.5%	215.0	17.9	12.0
Program E	110.0	8.6	4.7	0.4	9.7	10.4%	41.3	3.2	62.1%	83.1%	495.0	38.7	12.8
Program F	47.3	6.8	6.7	1.0	8.7	25.9%	22.3	3.2	49.3%	78.8%	605.0	86.4	7.0
Program G	26.0	4.3	3.0	0.5	6.2	26.7%	13.7	2.3	53.7%	68.2%	320.5	53.4	6.0

Top quartile   Bottom quartile

Departmental/Program Survey

Request for additional information

- Placement rates for MR and DR graduates in jobs, graduate school, or as postdocs
- Description of program's synergy with NC State mission
- Any special circumstances that make the department unique and is not captured in the university-level data
- Any additional narrative info about the program that should be taken into consideration

Anticipated Outcomes

- **Program Level:** Recommendations including changes in focus, consolidation or elimination of specific programs

- **College Level:** Recommendations resulting from number and size of programs (opportunities for consolidation)

- **University Level:** Recommendations in areas such as retention, 4-year (MR) and 6-year (DR) graduation rates

Questions and Comments