

Unbundling the Issue of Productivity

by **Robert C. Dickeson**

Productivity, as a means of assessing effective use of higher education resources, is receiving new attention. In 2011, Rick O'Donnell released a report on faculty productivity using data he analyzed from The University of Texas and Texas A&M University-College Station. In his analysis, O'Donnell (2011) divided faculty into five categories: "Dodgers," "Coasters," "Sherpas," "Pioneers," and "Stars."

In 2012, a special panel of the National Academies published its prescriptions for improving and implementing productivity metrics, a study that holds great promise for what it termed "model enhancement" (Sullivan et al. 2012).

In addition, several states and provinces have undertaken studies or appointed blue ribbon commissions to analyze the productivity issue and make reform proposals, presumably to improve postsecondary outcomes. (For an example of a current report of such activities, see American Association of State Colleges and Universities 2012.)

The issue of better measurement of productivity is certainly important; as the National Academies' report asserts, three audiences need better information: policy makers so as to guide more informed resource allocations, consumers of higher education to whom colleges and universities are accountable, and administrators who need improved methods for assessing institutional performance (Sullivan et al. 2012).

It has long been my belief that the most effective approach to changing institutional behavior is to develop tools for administrators that make sense to them and assist them in achieving goals they already want to achieve. In my books on prioritizing academic programs, one of a suggested 10 criteria for analyzing programs, "size, scope and productivity," addresses several questions institutions can ask and answer that help make relative judgments about program effectiveness, efficiency, and centrality to mission (see, for example, Dickeson 2010).

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As well intentioned as the O'Donnell and National Academies reports are, they are limited. O'Donnell, for example, measures total enrollments divided by faculty resources, notwithstanding level of instruction (there is a significant program difference between student/faculty ratios in a veterinary medicine lab and an introductory course in economics, for example). Further, O'Donnell only accounts for sponsored research dollars generated and ignores the other types, purposes, and outcomes of faculty research. The National Academies' report intentionally focuses its entire efforts on instruction only. Neither study looks at a service component, which is often a faculty responsibility.

From a practitioner's point of view, allocating faculty time (and therefore cost) must include instruction and research and service, the triad of activities that many institutions use in defining who they are and what they do. All three activities are used, typically, in considering faculty tenure and promotion decisions. Many institutions operate on a formula basis,

where proportions of faculty time are to be dedicated to each of these three functions. To be complete, therefore, any valid assessment of productivity must necessarily include instruction, research, and service.

Productivity, in its most basic economic form, is the ratio of production output to what is required to produce it. Thus, for our purposes, the focus will be on examining alternative units of output as well as discrete units of input. Historically, institutions of higher education have used such metrics for outputs as degrees or certificates awarded and credit hours generated. Such approaches have come under recent criticism, however, for being overly simplistic and for concentrating insufficiently on quality improvement.

The following approaches are suggested as ways to measure productivity that are more refined and that can be tailored to institution-specific purposes.

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INSTRUCTION

Instruction is arguably the most important function of postsecondary education. Certainly it predominates in the minds of the many policy makers who tend to focus on this component, often to the exclusion of research and service. And, policy makers tend to assume that “quality” outputs are graduates who get jobs (an assumption shared by many parents). The purposes of higher education instruction, however, are more complex than career preparation alone, as important as that goal is in today’s economy. The best instructional programs also inculcate four other aims: transmitting the civilization, teaching how to think, liberating the individual, and teaching values (Dickeson 2010).

Higher educators, however, have usually measured the things that are easier to measure, and thus job preparation and success have held sway in the public metrics. As the entire accreditation community has shifted toward measuring learning outcomes in addition to inputs, the difficulty of measurement has been demonstrated.

Instruction also occupies the lion’s share of time and attention for most faculty members and, in the case of community colleges and technical schools, may be the sole function to be measured.

An interesting phenomenon has occurred in the recent past: as a proportion of overall institutional budgets, the amount going to instruction has declined in the past decade. The reason for this change is twofold: first, more and more institutions are using part-time or adjunct faculty members to teach, primarily to cut costs (by not having to pay benefits) and to enhance flexibility. The fact that a majority of the instruction in the United States is now conducted by part-time faculty attests to this trend (Desrochers and Wellman 2011; National Center for Education Statistics 2012). Second, we know that the students who are being admitted today are less well prepared academically and thus require remedial and support services in order to be successful. This demographic trend has meant that while instruction as a proportion of budgets has been declining, nationally there has been a corresponding increase in the student services portion of institutional budgets.

As a result, one would be tempted to argue that the costs of instruction have declined. A fuller view would assert, however, that a portion of student support costs have to be factored into producing instructional outputs.

In assessing instruction, the following inputs and outputs are suggested for analysis:

INPUTS:

1. Percentage of faculty time allocated to instruction
 - Full time, fully costed
 - Part time, fully costed
 - Credential-specific personnel costs
2. Other personnel costs related to instruction
3. Other non-personnel costs related to instruction
 - Equipment
 - Materials
 - Supplies
 - Other

OUTPUTS:

1. Number and percent of graduates
 - Degrees awarded
 - Certificates awarded
 - Other milestones or markers of successful completion
2. Credit hours completed
 - Lower division
 - Upper division
 - Grad I
 - Grad II
 - Professional
3. Quality outcomes versus quality expectations (e.g., open admissions versus selective admissions)

4. Percentage of graduates passing nationally normed examinations; percentage of graduates obtaining professional certifications, licensures, admission to selective graduate and professional programs
5. Other measures of student graduate success that are externally validated

RESEARCH

American university research productivity has traditionally been the envy of the world. Advances in multiple fields dominate international understanding and development, and individual researchers garner a disproportionate share of international awards. It is difficult to understand why some policy makers ignore the potential benefits of research activity, preferring instead to focus formula funding on instruction. At both state and federal levels, funding for research is inconsistent and often episodic.

The role of research in faculty allocation of time varies widely across institutional type. Although slightly less than 10 percent of institutions (450 institutions out of a total of 4,635) are classified as “doctoral/research” institutions through the Carnegie Classification system (Carnegie Foundation for the Advancement of Teaching 2012), many other colleges and universities include research in their stated purposes. Still other institutions include research in their qualifications for faculty tenure and promotion. It may be that non-research institutions cling to the notion that by allocating faculty resources to research they can somehow aspire to research status. It may also be true that faculty members, trained at doctoral/research universities, bring with them expectations that are inconsistent with the scopes and missions of the institutions in which they are employed. The PhD, after all, is the degree that certifies the individual’s ability to conduct independent research.

What passes for research outputs at many institutions, notwithstanding their missions, is sometimes scant and occasionally laughable. I know of one institution where a faculty member was given credit for research output for writing a letter to the local newspaper. As with all of higher education’s outputs, there is room for quality improvement and certainly the need for more valid measures of relevance and success.

Finally, “research” itself should be disaggregated into its component parts. I see four of them:

- **DEPARTMENTAL OR INDIVIDUAL RESEARCH.** Research undertaken by an individual on time allocated for that purpose.
- **ORGANIZED RESEARCH.** Research conducted through institutional centers and institutes created for that purpose. Faculty may be assigned time for research to such entities.
- **SPONSORED RESEARCH.** Research conducted pursuant to special funding such as governmental grants or through support from foundations and corporations.
- **INSTITUTIONAL RESEARCH.** Research requested or required for institutional purposes, such as completing government reports or undertaking studies to assist the management of the institution.

In assessing research, the following inputs and outputs are suggested for analysis:

INPUTS:

1. Percentage of faculty time allocated to research by type (departmental, organized, sponsored, institutional)
 - Full time, fully costed
 - Part time, fully costed
 - Credential-specific personnel costs
2. Other personnel costs related to research
3. Other non-personnel costs related to research
 - Equipment
 - Materials
 - Supplies
 - Other

OUTPUTS:

1. Discoveries that advance the fund of knowledge
2. Discoveries that improve human or societal understanding
3. Discoveries that improve teaching and learning
4. Discoveries that improve public policy
5. Discoveries that enhance economic development
6. Creative works that improve quality of life

QUALITY MEASURES:

1. Articles in peer-reviewed journals
2. Books, programs, or other works published either traditionally or online
3. Presentations at regional/national/international professional meetings
4. Exhibitions at juried shows
5. Applications that earn external acceptance, approbation, and/or validation

6. Patents, licenses, and other validations of exclusivity
7. Successful preparation of doctoral-qualified researchers

SERVICE

The concept of service as a faculty role can probably trace its origins to the Morrill Acts of 1862 and 1890, which established land-grant colleges, and the Hatch Act of 1887, which enabled colleges to set up agricultural extension services. The concept has grown over the past 150 years to include more institutions than the current land-, sea-, and space-grant universities and to involve other fields of study beyond agriculture and the mechanical arts. Common to all of these is a focus on practical applications of knowledge so as to serve the people and their various interests.

As with research, institutions may or may not include “service” as mission critical. Service can also be proffered in an individual faculty member’s application for tenure or promotion. And, time for service may be allocated as a part of a faculty load.

It has been my experience that colleges and universities give credit to three types of faculty service:

- **PROFESSIONAL SERVICE.** Time expended on behalf of one’s profession: serving on professional academic tribunals, assisting with accreditation visits, testifying as an expert witness.
- **COMMUNITY SERVICE.** Time expended outside the institution: providing expert advice to a government agency, conducting the search for a school district superintendent, testifying as an expert before Congress.
- **INSTITUTIONAL SERVICE.** All manner of activities are included here, including serving on the inordinate number of committees allowed to grow and calcify in institutional life. This category probably ought to be allocated as administrative, rather than faculty, costs.

In assessing service, the following inputs and outputs are suggested for analysis:

INPUTS:

1. Percentage of faculty time allocated to service by type (professional, community, institutional)
 - Full time, fully costed
 - Part time, fully costed
 - Credential-specific personnel costs
2. Other personnel costs related to service

3. Other non-personnel costs related to service

- Equipment
- Materials
- Supplies
- Other

OUTPUTS:

1. Service that advances the profession
2. Service that improves human or societal understanding
3. Service that improves teaching and learning
4. Service that improves public policy
5. Service that enhances economic development
6. Service that improves quality of life

QUALITY OUTCOMES:

1. Recognition of service accomplishments
2. Service applications that earn external acceptance, approbation, and/or validation
3. Reports of service projects and outcomes achieved

CONCLUSION

How faculty spend their time is a key driver of higher education purpose, institutional intent, and cost. It deserves to be unbundled into its component parts, so that a complex subject is not oversimplified to meet the demands of uninformed policy. As the issue of improving productivity heats up in tough economic times, it is important for colleges and universities to engage this matter effectively. Such an engagement will require a focus on relevant data, a concentration on what is actually produced, and an accounting of costs that is more purposeful. As often happens, institutions that fail to tackle this issue may have productivity measures applied to them, and such measures may not be to their liking.

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