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Productivity in Colleges: Definitions and Measurements

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Introduction

The 20th century witnessed the expansion of education opportunities in the United States and served as a model for other countries. However, in the 21st century the United States were confronted by disturbing realizations. Despite the fact that great progress was observed, opportunities for education were often limited in high school and were not widespread for most Americans (Callan, 2007). Americans needed to be offered postsecondary education in order to fuel economic growth and promote social mobility and justices, as well as protect nation's democratic ideals. Instead, educational opportunities were narrowing in the face of the growing need for education. The challenge for education was to provide more people opportunities to achieve higher levels of education and to utilize the available resources in the most effective manner (Callan, 2007). This paper would define the productivity in colleges based on the growing need for it and the existing measurement methods for it.

Defining Productivity

Higher education institutions and systems needed to meet the increasing demands to provide quality education in constrained environment. Thus in order to satisfy these demands, they needed to increase their productivity, among other things. Other approaches that addressed the limited resources involved the increase in the revenues for such institution. However, the colleges and universities could not limitlessly increase the tuition because it would displace more students and do more harm than good for society. Instead, productivity improvement was perceived as the long-term response to the problem of constrained sources (Gates & Stone, 1997).

Productivity was a concept of learning to do more with less, thus decreasing the cost while increasing the profits (Gates & Stone, 1997). It was perceived to be fundamental but was often not discussed as a major element in performance-based funding initiatives. There

was no consistent definition for productivity and this has resulted in the poor understanding of the concept when it came to the context of education (Gates & Stone, 1997). At the very least, it was in close association with activities that would increase efficiency and cost-cutting approaches.

Callan (2007) defined productivity as the “achievement of higher outcomes at a lower per-student cost while retaining quality” (p. 27). Productivity could be understood as the measure of output per unit of input. While this was a technical term, this served as the general definition that worked within different contexts. The public’s perception of productivity involved how much society was getting from the education sector (Gates & Stone, 1997). It served as a gauge if the system was becoming wasteful or was it being efficient. It was basically perceived to have two dimensions, which included efficiency and effectiveness. Efficiency was the level and quality of service based on the limited resources provided and effectiveness was associated with the level by which the provider was able to satisfy the needs and demands of the consumers. It was a concept that was more than cost cutting, instead it was a multi-faceted approach to achieving the goals of the institution.

Boyd (1998) related productivity to the determination of what worked in the schools and why they worked. The difficulties in improving productivity in schools was the fact that the knowledge of what worked was still limited and there was an existing gap for the production function in the sector. According to Boyd (1998), productivity was the emphasis on “using what we have to get the schools we need” (p. 4).

Productivity was a term used to explain the level and quality of service that was gathered from an amount of resources. Education providers would be productive if they produced greater quantity and higher quality of services with the same amount of resources (Gates et al., 2001). This concept included the consideration of quality as a significant factor.

It was not merely about saving up or better budgeting of the resources, as quality was an important factor in productivity.

Defining productivity would include indicators for what it was. Zarkesh and Beas (2004) included a list of indicators that painted a picture of what productivity was and the list included quality student goal attainment, persistence high, degree completion rates, high placement rates, positive employer assessment of students among other things. Furthermore, productivity was perceived to occur in the creation of incentives for the education providers to approach instruction in such a way that educational outcomes would be improved, at the same time improving the affordability of colleges (St. John, 1994).

There were observations that tagged colleges to be wasteful and unproductive thus having to raise their prices in order to provide quality service (St. John, 1994). This was viewed as being unproductive because the consumers of education did not have to pay more to get more when the educational institutions were productive in managing their resources. Productivity was also viewed from two vantages. It was technical in terms of its relation to efficiency in the delivery of services and it was also about the effectiveness of different student aid. It involved offering the students and society the best possible education services that the institution could provide given the existing resources that it had.

Thus, productivity involved the implementation of strategies, programs and practices that were perceived to reflect the productivity of the institution. Callan (2007) offered three strategies that reflected the employment of productivity in colleges because they were designed to increase opportunities in higher education, educational effectiveness, as well as cost-effectiveness. Productivity in colleges included programs that would establish a relationship with high schools to help prepare them for college-level learning and the creation of effective transitions for high school to college (Callan, 2007). The streamlining of the educational process in order to reduce course repetition, offer incentives for degree

completion and recognize academic proficiency (Callan, 2007). Finally, the accommodation of enrollment growth should be implemented for institutions that focused on high quality, cost-effective undergraduate education and the increase in their research capacity for productivity improvement. There were different strategies that were implemented to implement productivity in the operations of these institutions, it was important to gauge if they were effective through measurement and evaluation methods.

Measuring Productivity

The importance of productivity in higher education created different methods by which it could be measured and evaluated. While there was no specific formula in doing this, there were numerous literatures in different contexts that could serve as useful guidelines for measuring productivity in higher education. The general approach included the measurement of efficiency and effectiveness separately and together to monitor productivity improvement (Gates & Stone, 1997). The ideal measurement of output and inputs could direct to standard output and input ratios.

These could be in the form of technical efficiency ratios that measured the physical output per unit input or economic efficiency, by which outcomes to input were compared in a general manner (Gates & Stone, 1997). When measuring either the input or output was not possible, indirect measures were used in terms of the amount of resources that were used by the organization along with the outcome and services quality of data.

The community or client conditions were also used as measure for productivity. The measures were compared to standards or benchmarks that were used by the organization's historical experience or the conditions that existed for other institutions of higher education (Gates & Stone, 1997). This would highlight the areas wherein the institution was doing better than its counterparts or doing worse. In terms of measuring effectiveness, service accomplishment was measured. They were observed to capture the actual output of the

organization and were not influenced by exogenous conditions (Gates & Stone, 1997).

Measuring the unintended adverse impacts of a service on the community was also an approach to measurement. This provided recognition to the impact of the education system in the community that were not expected or controlled by the provider (Gates & Stone, 1997).

In the states of Florida, Missouri, Ohio, Oklahoma, North Carolina, South Carolina, Texas, Tennessee and Wyoming performance-based funding reflected the level of productivity for the colleges (Zarkesh & Beas, 2004). There were numerous indicators by which their productivity was measured, which included graduation rates, employment rates, transfer rates, retention-persistence rates, and performance after transfer. These were the indicators that were viewed to be the easiest to quantify and they also reflected the institutions' response for the accountability and responsibility that they were given for college outcomes.

In Washington State, the Higher Education Coordinating Board (HECB) were given the roles to establish accountability monitoring and reporting systems that determined the performance, which included the productivity, in colleges and set targets for achievements (Colin et al., 2006). There were different areas by which the colleges' productivity was evaluated. Transfer was the leading area of concern. Students usually transfer to Washington to get a degree in this state after they have completed a two-year course from another institution. Washington was observed to have met the challenge of providing initial access to postsecondary education through the development of community and technical college systems (Colin et al., 2006). Aside from the number of transfer into the state, which was viewed to exemplify the state's colleges' excellence, they also record the intent for transferring into and out of the state to gain feedback from the students.

The bachelor degrees also served as a gauge for the performance of the colleges and universities in this state. According to Colin and his colleagues (2006), the degree production

in relation to the size of the student population was also used as a measure for the colleges and universities' level of productivity. In the same manner, graduation rates were also closely monitored. Wellman (2008) described the California State University at Long Beach to have gauged their productivity through the increase in their graduation rates despite the growth in the remedial needs for new students. They were able to do this through the close monitoring of their goals attainment for access and degree attainment, as well as investing time and attention to improving their productivity strategies.

The decrease in the inefficiencies in the educational production also served as a valuable measure of productivity, The University of Wisconsin decreased credits that were accumulated in their bachelor's degree and opened up additional 12, 000 seats in the university (Wellman, 2008). This was the approach that focused more time in efficient credit accumulation and time to the degree as a manner of increasing productivity through providing degree goals that were achieved in less time and costs for the students and the institutions. Kelly (2008) further pointed out that the volume of teaching activity, which was measured by student credit hours, was a major expense factor. Thus, when inefficiencies were decreased, the costs were also cut. This provided a rationale for including the decrease in certain areas in the operations and its impact as a measure for productivity.

State governors have come together to promote productivity in the colleges and universities in their respective states. In California, student academic progress and experiences, in terms of attendance credit accumulation patterns and academic performance served as the measure for instructional productivity (Lumina Foundation, 2008). Maryland and Wisconsin implemented measures that would gauge the quality of transitions and transfers from the state education institutions, especially for the support of underserved students (Lumina Foundation, 2008). Arizona and Montana used productivity measures that focused in the new models of delivery that served more students through the provision of

lower-cost education such as cost-effective pathways to attain a bachelor's degree and networked consortium of technical and community colleges to service students living far from the campuses (Lumina Foundation, 2008).

Meritosis (2009) promoted the target of Lumina Foundation called the "Big Goal" and explained that they have placed a 60 percent degree attainment as a standard for the increase in degree holders in the states of America. This reflected their goal of providing education to a greater share of the U.S. population without costing more money, The 60 percent degree attainment served as the measure for the productivity of the colleges and universities across the states.

Results in the statewide assessments that were done regularly in the states of Colorado, New Mexico, Virginia, Washington and South Carolina also served as measures for the colleges and universities' performance (Callan, 2007). Furthermore, it was also important to expand the measurement into the workplaces in order to measure the actual success outcome of the productivity of these education providers. Earnings of college graduates by program, unemployment rates and employer feedback systems were constructed statewide to measure the productivity of these high education institutions.

Conclusion

Productivity was understood for the efficient and effective use of limited resources to provide the best quality of education for the students and service to society. Accountability policies included measurements for the productivity of education providers through the increase of access, the provision of affordable degrees, degree completion and positive learning outcomes.

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