

# Tennessee Higher Education Funding and Its Initial Impact On An Engineering Technology Department

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**Abstract** - The Complete College Tennessee Act of 2010 is a public policy statement that established expectations for the state's system of higher education. A Five Year Master Plan has been developed to implement that objective and its title is "The Public Agenda for Tennessee Higher Education 2010-2015."

The Master Plan has metrics which include (1) increase the undergraduate degree production based on the national average for undergraduate degree attainment, (2) improve retention rates during specific milestones and graduation rates, (3) increase underserved students, (4) increase undersupplied occupations, (5) enhance research achievements, and (6) fund institutions that obtain these objectives.

The purpose of this paper is to explain/critique The Complete College Tennessee Act of 2010 and document the initial efforts in reviewing the current condition of the department using the new funding formula and the attempts that would improve the support of the university's Master Plan metrics to accomplish the goal of maximizing state funding for The University of Memphis.

*Keywords:* Higher Education Funding Plans, Higher Education Metrics

## NATIONAL LEVEL AND STATE OF TENNESSEE BACKGROUND

The United States is falling behind in the global marketplace with regards to maintaining an educated population, especially in the areas of postsecondary education and certifications. A national push to address the post-secondary issue came from President Obama as well as several foundations and organizations. President Obama called for the states to help make the United States be the leader in college attainment by 2020. The Bill and Melinda Gates Foundation, the Lumina Foundation and the Complete College America organization all established various metrics/goals to make that push possible. [1]

Tennessee, under the previous governor's leadership, competed for and received one of the two grants from the U.S. government's 'Race to the Top' competition. The Tennessee Congress then enacted The Complete College Tennessee Act of 2010 (CCTA) which defined a public policy statement that established expectations for the State's system of higher education. Pursuant to that public policy statute, the Tennessee Higher Education Commission (THEC) was tasked with developing the master plan to hold higher education accountable for increasing educational success in the state of Tennessee. [1]

THEC was implemented in 1967 to oversee the State University and Community College System, governed by the Tennessee Board of Regents (TBR) and the University of Tennessee system. THEC had previously implemented many different five-year plans as federal and state policies changed. THEC, to meet this new mandate, held many meetings of administrators of the affected institutions, state legislators, other state administrative staff, and consultants. From the many meetings the Master Plan was formulated, approved by THEC, and then promulgated to the institutions as the "The Public Agenda for Tennessee Higher Education 2010-2015." [1]

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## **THE COMPLETE COLLEGE TENNESSEE ACT OF 2010**

The Complete College Tennessee Act establishes the directions for the “The Public Agenda for Tennessee Higher Education 2010-2015.” The Act’s major provisions call for:

1. Focusing the Public Agenda on educational attainment and increased degree production.
2. Taking into consideration Tennessee’s economic development, work force development and research needs.
3. Requires attention to the distinctive missions of each of the institutions
4. Revises the public higher education funding formula. THEC is charged with developing a means of fair and equitable distribution and use of public funds but, consistent with the direction of the Public Agenda, the formula will be outcomes based
5. Directs that information such as end of semester enrollment, student retention, and timely progress toward degree completion shall be included in the model, and elements such as student transfer activity, research, and student success may be included.
6. Ensure that unique factors of the community colleges are considered in the funding formula
7. Charges THEC with developing a university parallel program consisting of 60 credit hours that will allow a student to transfer from a community college as a junior. The 60 hours are to consist of 41 hours of general education instruction and 19 hours of pre-major instruction. The intent is that any student who completes the 60 hours and earns an associate of science or associate of arts degree will be admitted to any state public university except for the University of Tennessee Knoxville, which will remain selective while also committed to cooperating with the spirit of this reform
8. Requires that a common course numbering system be developed at the community colleges and directs that any list of course offerings by a community college be listed in a way that clearly identifies courses that will not transfer to a university
9. Directs THEC, in consultation with the governing boards, to develop dual admission policies to allow applicants who meet the admissions requirements of both a community college and a university to be admitted to both institutions simultaneously.
10. Precludes universities from offering remedial and developmental instruction after July 1, 2012. [1]

## **THE PUBLIC AGENDA FOR TENNESSEE HIGHER EDUCATION 2010-2015**

The five year plan was immediately given a new name to make clear the intent of the plan, hence the name, Public Agenda. Public Agenda immediately indicated a broad, shared collaboration in the state of Tennessee and the efforts to meet the needs of the U.S. and businesses in the state. The Public Agenda gives clear aims in its intent: (1) Increase undergraduate degree production (associate’s & bachelor’s by 3.5 percent annually, (2) improve efficiency (time to degree, graduation rates) while also increasing overall production (numbers of degrees), (3) Target underserved students and undersupplied occupations, (4) Recognize the Tennessee Technology Centers for student success and efficiency measure characterizing their operations and seek to adopt best features of these practices, (5) Improve the quality of programs and services even as volume increases, (6) Close the gaps in the supply of graduates in high demand fields that require a postsecondary credential, particularly science-technology-engineering-math (STEM), (7) Fund institutions and pursue academic policies in a manner consistent with desired ends, and (8) Enhance the research achievements of institutions in accordance with their individual missions. [1]

The aims listed in the paragraph above can then be used to define the goals of the Public Agenda: (1) Tennessee needs an additional 26,000 undergraduates by 2015, (2) Tennessee needs workforce and economic development, (3) Tennessee needs quality underpinnings to continue given the increased productivity demands, (4) Tennessee needs enhanced competitive research to accomplish non-state funded research to help offset high cost academic degree programs, (5) Tennessee will promote productivity and efficiency through an outcomes-based funding formula, (6) Tennessee will promote quality assurance through revised performance funding standards, (7) Tennessee will promote economic and workforce development through responses from a labor market supply and demand study, (8) Tennessee will promote efficiency and effectiveness through purposely individual as well as roll-up reports, (9) Tennessee will promote efficiencies through inter-institutional collaboration and reduced duplication, and (10) Tennessee will promote efficiencies through incentives for extramural support. [1]

## OUTCOMES BASED FUNDING FORMULA

The funding formula that was developed as a part of the Public Agenda is based on two major elements: the data definitions and the weight of each data definition. Each of these elements has specified increases agreed upon by the representatives to the THEC committee.

The weights vary by institution and are based on the institutional mission. The University of Memphis, with a “Research High” Carnegie classification, has been assigned the following weights: [1]

| <u>Data Definitions</u>            | <u>Weight</u> |
|------------------------------------|---------------|
| • Students Accumulating 24 hrs*    | 2.0%          |
| • Students Accumulating 48 hrs*    | 3.0%          |
| • Students Accumulating 72 hours*  | 5.0%          |
| • Bachelor’s and Associate’s       | 25.0%         |
| • Master’s/Ed Specialist’s Degrees | 15.0%         |
| • Doctoral/Law Degrees             | 10.0%         |
| • Research and Service             | 12.5%         |
| • Transfers Out with 12 hrs        | 5.0%          |
| • Degrees per 100 FTE              | 10.0%         |
| • Six-year Graduation Rate         | 12.5%         |

\* A premium of 40% will be added for Adult and Low-income students

## THE QUALITY COMPONENT

The most striking omission in the five year plan was a quality component. Given that the metrics and funding weights use data much like a manufacturing operation would, one would assume that some quality assessment/measurement data would be included in order to measure the effective result of the student’s education.

Following the implementation of the Act, the quality component was discussed in the summer 2010 meeting of the Tennessee University Faculty Senates (TUFS) with a member of the Tennessee House of Representatives. The simple innocuous statement from the representative was, “it has been implemented and you need to make the Act work”.

A public meeting was held in January 2011 with the new governor of Tennessee to discuss this act with members of THEC and other state officials. The quality component was never directly discussed but a brief comment by the governor suggested that the quality component would lie at the feet of the faculty.

## IMPLICATIONS

Perhaps the most troublesome issue is that it is not known how the institutional funding will “trickle down” to each of the colleges and schools at the university. Will funding to the College of Engineering and the departments within the college be in alignment with their support of the institutional mission in meeting the imposed metrics?

Secondary to that is the question of the future of programs at the university. If a program is productive but not necessarily at the imposed levels, could the program be a target for elimination?

Because of these serious issues the Department of Engineering Technology has started to review and attempt to analyze where we can support those metrics that the University is attempting to meet.

The University of Memphis Engineering Technology department has a long history of providing educational opportunities to traditional and non-traditional students by offering both day and night rotations for all courses. We are the only Engineering Technology baccalaureate program in the Mid-South and The University of Memphis is a major metropolitan university. The traditional student takes 4-5 years to complete a degree and the non-traditional student 7 years. Additionally, the Engineering Technology program has a strong connection to the local two year institutions so that a typical associate's degree individual can finish a bachelor's in two years.

The Engineering Technology underwent a major revision in 2009 due to declining enrollment and at that same time a 'gateway' set of courses (science and core technology) was implemented.

Our alignment with the data definitions serve us well for supporting the funding plan for the University of Memphis in the future but our declining enrollment will make it difficult to achieve the improvement percentages.

### **CONCERNS**

As previously stated, we have low enrollments which must be addressed. Additionally our Office of Institutional Research, OIR, is just now starting the process of generating reports on the data definitions which means that we will manually estimate our results scheduled for the end of the fall semester. As of this time, January, no data has been forthcoming from OIR.

Beyond the metrics concern, the department is very concerned about the quality results. Engineering Technology does not have a standardized statewide/national test as does Engineering via the Fundamentals of Engineering, FE, exam. Engineering Technology graduates are not permitted to sit for the exam in Tennessee. We have started the development of a 'Senior Exam' but the process takes several semesters using student scores to validate the exam.

### **ACTIONS**

Within our control are the actions to improve enrollment: (1) We have been lax in working with our local two year institutions, so we have invited the three local institutions to be a part of our Industrial Advisory Committee, the last meeting of which was held in November, (2) Starting the spring semester Engineering Technology faculty will be calling on the local industries to get with their Human Resource departments so that we can promote our program, and (3) We are using our faculty as mentors in the local U.S. First Robotics competitions to place ourselves into the public high schools to encourage and recruit future students.

### **REFERENCES**

[1] "The Public Agenda for Tennessee Higher Education 2010-2015",  
<http://www.tennessee.gov/the/Divisions/Commission/commissionmeetings/Archives/2010/summer/I.A.1.%20Attachment%20-%20Master%20Plan.pdf>

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The author earned an AAS Degree with a concentration in Computer Engineering Technology from State Technical Institute at Memphis, a BS Degree with a concentration in Industrial Technology from Southern Illinois University, and an MS Degree with a concentration in Computer Engineering Technology from The University of Memphis. His electronics experience includes 8 years of U.S. Navy service, as an instructor in U.S. Navy AV'B' school, 10 years of design and maintenance as an Electrical engineer for FedEx, 14 years of management in Facility Management for FedEx, 20 years as an adjunct professor for The University of Memphis and Southern Illinois University. He joined the faculty of The University of Memphis full-time in the summer of 2006 and is now an Assistant Professor for the Engineering Technology program at the University of Memphis.

**Scott C. Southall**

Scott Southall earned a BSET Degree with a concentration in Computer Systems Technology from Memphis State University in 1987 and an MS Degree with a Manufacturing Engineering Technology concentration in 1991, also from Memphis State University. His industrial experience covers a broad range of functions involving industrial automation and control systems design and implementation, machinery design, facilities planning and material handling systems design. He served as an adjunct faculty member for three years before joining the faculty full-time in the fall of 1994. Currently Associate Professor and Interim Chairman of the Department of Engineering Technology, he previously served for 10 years as Program Coordinator for the Electronics Engineering Technology program at The University of Memphis.