Tuning in Texas

A New Approach to Learning Outcomes in the Engineering Disciplines

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Tuning, a brief definition …

In the Tuning process, faculty members from different sectors – community colleges and four-year institutions – that offer coursework contributing to degrees in specific disciplines agree on:

- 1) subject-specific descriptors and learning outcomes, by degree level, and
- 2) general competencies that students must demonstrate to earn degrees in each specific discipline. (You'll hear it referred to later as "vertical alignment.")

Similar processes exist in US higher education …

Learning outcomes have been defined to:

- Meet regional accrediting standards and as part of state- and system-level academic reviews.
- Comply with discipline-specific accreditation. (ABET)
- Respond to efforts by national higher education associations. (AAC&U)

The United States has not developed a comprehensive, easily understood approach for defining the learning that college degrees represent. … Nor has there been an effort in this country to widely engage students, graduates and employers in defining critical skills outcomes.

Lumina's Big Goal

Like the state of Texas, Lumina Foundation for Education is committed to getting more students into and through college, especially 21st Century students:

1. students of color and minorities
2. students from low-income families
3. first-generation college-going students
4. working-age adults in need of further education

The Foundation's goal is to increase the share of Americans who hold high-quality degrees and credentials from 39 percent to 60 percent by 2025.

Why "tune"?

- **Faculty define academic quality as "learning" using language transparent to higher-ed stakeholders.**

1. **Responds to external demands for accountability from higher education and establishes an alternative to rankings and "reputation."**
2. **Encourages innovation by defining what students must know, understand and be able to do to earn degrees in specific disciplines.**
3. **Shifts the focus from "what is taught" to "what students must learn."**
4. **Moves beyond defining degrees primarily in terms of credit hours, course catalogs and minimum GPAs.**

Why "tune"?

- **Faculty accelerate discussions about aligning curriculum, giving students clearer pathways and smoother transfers.**

1. Demystifies learning expectations for students, especially those from families with no prior college experience.

2. Increases degree comparability by defining the "essence" of a discipline using a process that's gaining international acceptance in science and the humanities.

Why "tune"?

- **Incorporates stakeholder feedback to make degrees relevant to the needs of individuals, society and the workforce.**

1. Other faculty in the discipline
2. Students
3. Graduates
4. Employers

- **Elevates discussion of competencies and transferable skills graduates must possesses.**

- What's expected of degree holders at each level beyond technical mastery?

What Tuning is about …

- Standards, not standardizing: After the "core" of learning for the discipline is defined at each degree level, there will be plenty of room for program differentiation.
- Faculty control of the discipline: Faculty consult stakeholders, which builds credibility with policymakers and the public. Ultimately, faculty define the discipline.
- Fostering academic autonomy and flexibility: Faculty are free to develop student learning through whatever curricula they believe work best.

Step 1: Define the discipline "core"

- Builds on learning outcomes work: SACS, ABET, BoK.
- Focuses on "meaning of degrees:" What should students know, understand and be able to do?... How will knowledge, skills and abilities be assessed?
- Ratchets expectations higher as students progress.

1. Knowledge/Understanding
2. Knowledge Application
3. Independent Judgment
4. Communication Skills
5. Learning Autonomy

Step 2: Map employability

- Who employs your graduates, and in what occupations?

Step 3: Survey Stakeholders

THECB will administer two survey instruments, with faculty input and advice:

- Survey to rank important general competencies:

1. Faculty in the discipline
2. Students
3. Graduates
4. Employers

- Survey to test discipline committee's degree-level descriptors and active learning outcomes

1. Faculty only

Step 4: Hone "core" discipline

- Incorporate findings from surveys of general competencies / transferable skills.

- Incorporate feedback from other faculty in the discipline into thinking about degree-level descriptors and discipline-specific learning outcomes.

- Ensure competencies are written so they ratchet up expectations and can be assessed.

Step 5: Draft degree profiles

- Using the discipline “core” as a foundation, write a statement differentiating your program from others nationally and across Texas.
- The statement should be grounded in learning outcomes that can be clearly defined and measured.

Summary of Tuning Steps

1. Define the discipline “core”
2. Map employability
3. Survey stakeholders
4. Hone “core” discipline
5. Draft degree profiles

Next step: Horizontal alignment

- Use the agreed-upon learning outcomes for lower-division coursework to align learning expectations for a set of foundational courses so students pursuing engineering can easily transfer between or among institutions
- Texas' work in the area of mechanical engineering is a model for how this can be done

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