Applied Baccalaureate Degrees in STEM and Technician Education

Broadening Impact Conference
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Overview

- Lumina Applied Baccalaureate (AB) project
- AB/technical career pathways
- ATE research project:
  - Phase One – Survey
  - Phase Two – Field Study
  - Dissemination – continual
- Broadening impact lessons
Applied Baccalaureate

“…a bachelor’s degree designed to incorporate applied associate courses and degrees once considered as “terminal” or non-baccalaureate level while providing students with the higher-order thinking skills and advanced technical knowledge and skills so desired in today’s job market.”

Townsend, Bragg, & Ruud (2008, p. 4)
Terminal Associate Degree

Transfer Associate Degree

Applied Baccalaureate Degree
Applied Baccalaureate

- Traditional Associate-degree Granting Institutions
- Traditional Baccalaureate-degree Granting Institutions
50-State Inventory

Methods:
- Literature review
- Web searches, including Lexis-Nexis
- E-mails and interviews (50 states - 100% response)
- Follow-up interviews with large-scale AB policy states
- Inventory validation
Decade: 1970s
- 2-year only
- 4-year only

Map showing states with different education options in 1970s.
Decade: 1980s

- 2-year only
- 4-year only
Decade: 1990s
- 4-year only
- 2-year & 4-year
Decade: 2000s

- **4-year only**
- **2-year & 4-year**
Decade: 2000s

- **4-year only**
- **2-year & 4-year**
- **New developments**
Case Studies

- Arizona
- Florida
- Kentucky
- Oklahoma
- Texas
- Washington

For more info:  http://occrl.illinois.edu/lumina
The Models

Model of Applied Baccalaureate Degree Curricula

- Applied Baccalaureate Degree
  - Career Pathway or Ladder
    - Advanced Technical Education
  - Management
    - Supervisory and managerial coursework
  - Inverse or Upside-down
    - General education requirements
  - Hybrid
    - Combination of Career, Managerial or Inverse

- Applied Associate Degree
Oklahoma State University
Institute of Technology – Information Assurance and Forensics

- 1 credit “cornerstone”
- 53 credits general education
- 33 credits IT (lower level)
- 37 credits IT (upper level)
- Total 124 credits
- Associate degree required and “re-apply” to Bachelor’s of Technology (BT) degree
South Texas College
Computer and Information Technologies

- Associate of Applied Science (AAS) level
  - AAS degree or 60 semester credits
  - Complete general education (~34-40 semester credits)
  - AAS-level technical (~24 technical/STEM credits)

- Bachelor’s in Applied Technology (BAT) level
  - 36 credits upper division technical requirements
  - 21 credits technology specialty
  - 3 credit “capstone”
Phase One – Online Survey

Link:

https://tfsu.qualtrics.com/SE/?SID=SV_3wpKG18sprWDZal

Preliminary results:
- 100 responses - 20+ Applied Baccalaureate!
- All areas:
  - Biotech
  - Electronics
  - Energy
  - Manufacturing
  - Nanotech
Phase Two – Field Study

- Select 6-8 sites
- Researcher & expert teams visit sites
  - Education and employer partners, students, etc.
- Collect student outcomes data
- Report results: Program cases and cross-case
Dissemination

- Press Release -
  http://news.illinois.edu/news/11/0209degrees_DebraBragg.html
- 1st Webinar - May 2011
  http://occrl.illinois.edu/projects/nsf_applied_baccalaureate
- 2nd Webinar – Sept 2011
- PI Conference – Oct 2011
  - Advisory meeting
  - Year-1 results presentation
Broadening Impact

- Extend from Lumina to NSF
- Connect ATE-issues to policy:
  - STEM pipeline
  - Outcomes & equity
  - College completion
- Document lessons for policy, practice and research
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