Advanced Career: Jump Start Student Opportunities with New Career Pathways for the 21st Century

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Start with a Quiz:
Why is the cover of a manhole nearly always round?

Scott Warren

- Director of State Initiatives
- Former
  - HS Administrator
  - Math Teacher
- What I believe
  - Purpose
  - More math in isolation has not helped
  - One thing – TOD
  - www.youscience.com

Who is SREB?

- Formed by southern Governor's in 1948. Current Chair is Governor Edwards of Louisiana
- The nations largest and oldest school improvement effort focused on CTE – High Schools That Work (HSTW)
- Over 200 HSTW/MMGW/TCTW sites in LA since 1987
- Has an annual summer conference with 4000-5000 participants
- Currently has multiple grants to improve academic and career technical instruction

Where did AC come from?

- Multi-state effort to fill voids in specific industry areas in that state
- Patterned after other successful CTE Curriculum efforts
- Attempt to blur lines between secondary, postsecondary and workforce learning
- Development involved states' workforce and postsecondary along with secondary

Key Elements

- Ready-to-implement pathways: 16-17 Info\AC Marketing\AC Units\IPT-C1-P1-TV-PW-111914.pdf
- Four course sequence can be implemented in comprehensive HS, CTE HS or Technical College
- At least courses three and four dual credit
- Each course – 4-6 fully developed, authentic project-based learning units of study
- Each project embeds ELA, math, science and industry problem solving process
- Virtual industry mentor provided by Siemens
- http://www.sreb.org/AC

Anatomy of an AC Project

Standards Addressed in Each AC Project

- Technical skills and the use of technology
- Mathematics
- Research
- Reading technical-related documents
- Writing: preparing a written design, work plan and final report

21st-Century Skills

- Imagination and Innovation – Thinking Creatively
- Critical Thinking – Solving Problems
- Communication and Collaboration – Communicating Clearly

The Advanced Career Pathways

- **Informatics (Business) - KY**
- **Innovations in Science and Technology - AR**
- **Global Logistics & Supply Chain Management - NJ**
- **Aerospace Engineering - AL**
- **Clean Energy Technology - SC**
- **Energy and Power - WV**
- **Health Informatics - OH**
- **Integrated Production Technologies (Advanced Manufacturing) - KY**
- Oil & Gas — first course ready fall 2017 – TX
- Automated Materials Joining – first course ready fall 2017 – OH

Does it Work?

- Surveys of students and teachers
- 77% of AC students say that this AC course helped them in determining a career goal after high school
- 67% of AC students say they work in teams on projects
- 88% of AC students find the AC courses rigorous
- 80% of AC students like the blend of hands-on activities, academics and creative thinking in the AC class
- 77% of AC students would recommend this course to a friend
- Over 80% of AC students plan to take all four AC courses

All Available for Adoption

Highlight Three Pathways for Louisiana

Low equipment costs

Aimed at smaller schools

Advanced Career

Global Logistics & Supply Chain Management

Projects Engage Students in Solving Real-World Challenges

EQ. **How can packaging and freight classification affect pricing?**

Course content examples

AC Global Logistics & Supply Chain Management

Prepares Students for Postsecondary Options and Careers

High School Industry Certifications

Manufacturing Skill Standards Council (MSSC): Certified Logistics Technician

Diploma, Certificate, Associate's & Four-Year Degree Options

(Eight Examples)

Diplomas

Logistics Management

Supply Chain Management

Technical Certificates

Certified Warehousing

Distribution Specialist

Associate's Degrees

Logistics & Supply Chain Management

Supply Chain Management

Bachelor's Degree

Supply Chain & Logistics Management

Transportation Management

Global Logistics & Supply Chain Management Jobs & OJT

(Eight Examples)

Capacity Account Manager

CDL-A Driver

Computer Scientist

Diesel Technician

Inventory Control Manager

Maintenance Technician

Scheduler

Supply Chain Planner

Advanced Career
Business Informatics

Projects Engage Students in Solving Real-World Challenges

Course content examples

EQ. **How can we design a system to better track inventory and make purchasing decisions?**

AC Business Informatics

Prepares Students for Postsecondary Options and Careers

High School Industry Certification

Microsoft Office Specialist (MOS)

MOS Expert

MOS Master

Diploma, Certificate, Associate's & Four-Year Degree Options

(Eight Examples)

Diplomas

Business Informatics

Computer Information Systems

Technical Certificates

Business Analytics

Data Visualization

Associate's Degrees Data Science

Information Technology

Bachelor's Degrees Business Informatics

Computer Science

Business Informatics-Related Jobs & OJT

(Eight Examples)

Business Consultant

Business & Operations Analyst

Data Analyst

Data Scientist

Operations Research Analyst

Process Improvement Manager

Researcher

Software Developer

Innovations in Science and Technology

Projects Engage Students in Solving Real-World STEM Challenges

EQ. **How can we determine which contaminates impact drinking water quality, and how can we remove them?**

Course content examples

Innovations in Science and Technology

Prepares Students for Postsecondary STEM Options and Careers

Developed by Arkansas as less expensive STEM Pathway for small schools

Multiple HS STEM Certifications Possible

Diploma, Certificate, Associate's & Four-Year Degree Options
(Nine Examples)

Diplomas
Accounting

Textile Design

Technical Certificates
Business

Networking Specialist

Associate's Degrees Design & Media Production Technology

Engineering

Bachelor's Degrees Actuarial Science

Biology

Chemistry

STEM-Related Jobs & OJT (Eight Examples)

Actuary

Biological Technician

Civil Engineer

Computer Information Systems Manager

Industrial Engineer

Sales (Manufacturing, Technology and Scientific)

Security Analyst

Software Developer

Syllabus Review

- Groups of three
- One course syllabus for each of the three pathways is provided
- Wow and wonder to share
  - What is one thing that you like?
  - What is one thing that you wonder about?

Curriculum Costs

- Reduced Costs for participation in the Advanced Career pathway programs of study are based on membership in the HSTW network – One time $2500 for LA Schools
- The participation fee will support ongoing improvement of products and provide support for program-specific technology and other technical assistance and services needed.
- **End-of-Course Assessments -** ($6 per student / 24 students): $144

Summer Teacher Training Institute (STTI)

- STTI Registration: $3,250 per teacher
- SREB has grants to cover 50% of registration
  - Global Logistics – Rutgers, New Jersey
  - Informatics – Northern Kentucky University
  - Innovations in Science and Technology - Arkansas
- Process to earn SREB certification to teach courses
- SREB would offer in a region within the state if at least 5 schools choose to implement

Equipment Costs

Global Logistics & Supply Chain Management

- Course 1: $0 if already have Microsoft Office and a computer lab
- Course 2: $0 if already have Microsoft Office and a computer lab

Informatics

- Course 1: $0 if already have Microsoft Office and a computer lab
- Course 2: $0 if already have Microsoft Office and a computer lab

Innovations in Science and Technology (SREB and NSFY Grants available to assist)

- Course 1: $19,330
- Course 2: $14,884

Yea, but….

- This is great, but we don’t have the funds, don’t have the teacher, lack the facilities…
- How can we implement these?

- Grants to cover costs
- Low material costs (lessons learned from other efforts)
- Creative ideas

Unique Implementation Models

- Partner with Technical College – Clay County, WV
  - Multiple, small rural schools participate together
  - Courses offered in Junior and Senior years
  - Courses offered at Technical College in region
- Fountain Lake High School, Arkansas
  - Innovations in Science and Technology – Use science teachers for low cost effort for STEM in small, rural schools
- Frankfort HS, KY
  - Used math teacher to get trained and teach Informatics
- Berkley County, SC school got business partner to sponsor Aerospace
- Madison HS, FL – Energy and Power with Florida Power as partner
- Best Opportunity in LA: New Skills for Youth (NSFY)

Memorandum of Understanding

- Implement with fidelity
  - Course 1
  - Offer at least two courses by year 3
- Administer EOC to all students
- Academy design
  - Common planning
  - PLC - Science, Literacy and Mathematics
- Enlist Industry and community partners and postsecondary partners
- Teacher attends full STTI

SREB's Other Tools to Support Jump Start

- Authentic PBL Training involving Business/Industry for Current Programs
- Shifting from Counseling for College to Counseling for Careers
- CTE Pathway Reviews
- Support to develop new pathways (KY Health)
- Fast-track Alternative Certification Program
- **Readiness Courses**

Q & A

Thank You

Remember, all schools and all teachers want to improve. However, few want to change. The fact remains that to improve, one must change!

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- #AdvancedCareer