Presentation to the Pennsylvania Education Committee's Select Subcommittee on Technical Education and Career Readiness

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The Claude Worthington Benedum Foundation is a private grant-making foundation that is based in Pittsburgh but serves a region that includes the State of West Virginia and Southwestern Pennsylvania. As a regional foundation, we are in a position to develop inter-state programs and to promote the exchange of promising ideas across state lines.

A priority area of the Foundation's Education Grants Program is Career and Technical Education (CTE). We look for ways in which CTE can be made more academically rigorous and more aligned to the rapidly changing needs of the workplace. Academic rigor is essential, as technological advancements in the workplace are making post-secondary education the gateway requirement for most high-demand, high-wage occupations. High school students can no longer graduate college *or* career ready. They must be college *and* career ready.

Two West Virginia programs have been nationally recognized for academic rigor and industry relevance, and they have applicability to Pennsylvania's CTE system: Advanced Career Pathways and Simulated Workplaces. Descriptions of these two programs are followed by examples of Southwestern Pennsylvania efforts that reflect the same objective of raising the bar on college and career readiness: the comprehensive technical school model, a recent report on CTE reform by the Education Policy and Leadership Center, and a landmark inter-state workforce initiative undertaken by the Allegheny Conference on Community Development.

Advanced Career Pathways

The Advanced Career Pathway Program (AC) is a college preparatory CTE initiative developed by the Southern Regional Education Board, a 13-state education research, policy, and planning agency. AC was created as a pathway for high school CTE students to prepare for college and a career. Currently, there are eight career pathways:

- Aerospace Engineering,
- Clean Energy Technology,
- Energy & Power,
- Global Logistics & Supply Chain Management,
- Health Informatics,
- Business Informatics,
- Innovations in Science and Technology, and
- Integrated Production Technologies (Advanced Manufacturing)

These pathways are 9th through 12 grade courses of study that were developed by teams of industry experts, teachers, and higher education faculty. The coursework meets Advanced Placement standards, and students are able to earn college credits and industry certifications while in high school. Each educational pathway lays out the courses, industry certifications, and jobs that are available at the Associate, Baccalaureate, and graduate-degree levels. The program relies heavily on industry-related project-based learning activities generated by industry partners.

Individual state departments of education have signed on to adopt one or more AC pathways, and they belong to a national professional learning community, which benefits from ongoing training and technical assistance from the Southern Regional Education Board. To date, AC curricula have been adopted by seventeen states from New York to New Mexico. The West Virginia Department of Education has adopted Energy & Power and Integrated Production Technologies, which are currently being offered at both career & technology centers and high schools. The Benedum Foundation is working with three Western Pennsylvania technical schools interested in piloting AC pathways. The West Virginia Department of Education and individual school directors will serve as technical consultants to the Pennsylvania pilot schools.

For additional information, contact Gene Bottoms, Senior Vice President, Southern Regional Education Board, 404-202-5143, gene.bottoms@sreb.org.

Simulated Workplaces

Simulated Workplaces are replications of work environments located in West Virginia technical centers and high schools. These workplaces are designed by committees of industry partners, CTE experts, and representatives from higher education to model all of the workplace activities, employment processes, and accountability measures of the real world of work. Companies work with partnering schools to establish school-based work settings that include labs, production lines, and human resource procedures, including drug testing and expected workplace behaviors. The simulated work activities are aligned to state educational standards and the requirements for advancement to post-secondary education. High-school teachers have incorporated workplace projects into the curricula and function more as facilitators than instructors; company representatives serve as inspectors who oversee student work product. Simulated workplaces offer authentic work-based learning opportunities. They provide preparation in technical skills as well as the adult behaviors and communication skills expected in the workplace.

Since the program began three years ago, simulated workplaces have been established in 60 schools and engage 13,000 students. There are 150 business representatives who have volunteered to create the simulators and serve as inspectors of student work product. To date, the Simulated Workplace Program has garnered high satisfaction rates from students and teachers; not unexpectedly, student enthusiasm has translated into improved attendance and grades. A related, but not insignificant, benefit of the program is the virtual absence of drug use, evidenced by the drug testing pass rate of 98.4 %. When students are engaged in learning and motivated to pursue a career, they see drug use as a detriment. West Virginia's Simulated Workplace Program has attracted the interest of education policy makers from Alabama, Tennessee, North Carolina, Oklahoma, Missouri, Ohio, Kentucky, and Australia.

For more information, contact Kathy D'Antoni, Director of Career & Technical Education, West Virginia Board of Education, 304-558-2346, Kdantoni@k12.wv.us.

Comprehensive Career & Technology Centers

Both of the West Virginia initiatives cited above strive to raise academic rigor and deepen the alignment of CTE with workplace demand. Both rely on college preparatory coursework and deep industry partnerships. West Virginia is well-positioned, however, to integrate academic and career education because school districts are consolidated along county lines and most public education funding comes through the West Virginia Department of Education. In Pennsylvania, too many career & technical centers are supported by clusters of school districts which send students and funds to separate technical schools. Students spend part of the school day at a home high school for academics, part of the day at a technical center for career training, and part of the day in transit. This separation of academic from career education, not to mention the learning time lost in bus transit, impedes the kind of integration evidenced by Advanced Career Pathways.

There are, however, examples of comprehensive technology schools such as Lenape Career & Technical Center in Armstrong County, where students spend the whole day, and academics and work-related learning are well-integrated. Lenape also recently added a post-secondary partnership with Butler County Community College, which operates a satellite at the school. In the spirit of integrated learning, students can begin their college education while in high school, earn college credits, and master technical training in a variety of career options. Lenape is not the only comprehensive technical school in Pennsylvania, but it is one model of career *and* college readiness.

For more information, contact: Dawn Kocher-Taylor, Director, Lenape Tech, 724-763-7116 x310, kochdaw@lenape.k12.pa.us.

Education Policy and Leadership Center Report on Career & Technical Education

Comprehensive career & technical high schools represent an important step toward integrated CTE, and is one model examined in a recent study on CTE in Pennsylvania. The Education Policy and Leadership Center (EPLC) has undertaken a major CTE reform agenda that takes a close look at integrated academics, governance, funding, and closer alignment of business and education.

EPLC President Ron Cowell convened a CTE project study group made up of representatives from community colleges, the Pennsylvania Department of Education, the Pennsylvania State System of Higher Education, the Pennsylvania Business Council, Chambers of Commerce, the Pennsylvania Department of Labor, the Allegheny Conference on Community Development, and several associations of school administrators and school board members. This group consulted experts and made site visits to several exemplary programs across the Commonwealth. EPLC issued a report in February 2016 that lays out a set of 43 recommendations that fall under six categories:

- Leadership and Governance
- Building student and parent awareness about CTE
- Relevance and rigor of programming
- Assuring CTE opportunities for all students
- Accountability for effectiveness
- Funding
- Regional and local coordination

Admittedly, 43 recommendations make for a long list, but the report is structured in a way that lays out options for local, regional, and state-level action. The suggested improvements center on closer relationships among secondary technical schools, post-secondary educational systems, regional workforce boards, and most importantly, the business community. Regional coordination is critical to working with businesses, as employment trends rarely follow geopolitical jurisdictions, whether they are school districts, counties, or states. Live-work patterns and labor sheds are defined by economic and employment opportunities, regardless of these boundaries.

For more information, contact: Ron Cowell, President of EPLC, 717-260-9900, cowell@eplc.org.

Tri-State Energy and Manufacturing Collaborative

The EPLC report stresses regional coordination and the AC pilot schools in Southwestern Pennsylvania represent interstate exchange of promising programs. However, regional coordination was taken to a new level last fall when the Governors of Pennsylvania, Ohio and West Virginia entered into an economic and workforce development compact, recognizing that the energy sector, especially the manufacturing opportunities related to natural gas, operates in a single tri-state region of Southwestern Pennsylvania, Eastern Ohio, and Northern West Virginia. The Allegheny Conference on Community Development has taken the lead, along with sister organizations in West Virginia and Ohio, to look at the workforce opportunities of the tri-state region. This region is a single and unified labor shed, and many energy and manufacturing companies hire from technical schools, community colleges, and baccalaureate institutions from Steubenville, Ohio to Wheeling, West Virginia to Greensburg, Pennsylvania.

Because employment opportunities cross state lines, it is more important than ever for technical schools to share common standards and for graduates to have access to employment opportunities regardless of residence. Laura Fisher, Senior Vice President, Allegheny Conference on Community Development, convened the Energy and Manufacturing Workforce Collaborative, made up of labor agencies, educational institutions, and businesses from all three states. The Collaborative's objectives are:

- Formation of a single tri-state database of current and projected occupational demand and the competencies required by regional industries;
- Industry-vetted curricula and competency-based training pathways that are shared by companies across the region; and
- Inter-state articulation agreements among high schools, community colleges, and four-year colleges within the tri-state area.

For more information, contact: Laura Fisher, Senior Vice President, Allegheny Conference on Community Development, 412-281-4783 x3130, lfisher@alleghenyconference.org.

Conclusion

The public education system has always had many paths for students to pursue: employment after high school, college, or trade school. For too long, however, technical education and academic study were separate; students either went to work or went to college. The changing landscape of workplace technology means that these tracks must be integrated. New employees need to be proficient in specific technical skills, hold post-secondary academic and industry credentials, and they need to be critical thinkers, analysts, and planners. School leaders are not always aware of workplace innovations,

nor do they have the resources to respond in a timely fashion. Continuous school/business partnerships and shared public/private resources are essential if students are adequately prepared for the future.

Hopefully, the cases presented above offer some guidance in breaking out of the silos that separate technical education from academic education, secondary from post-secondary education, and education from business.