Swiss Apprenticeship Model

An Employer Driven System of Education & Training

BASIC

business and schools in collaboration
Swiss Profile

• 3.2% unemployment
• <4% youth unemployment rate
• 8.2 million population
• 580,000 businesses
• 70% of all students choose apprenticeships, no stigma – most CEO's have been apprentices
• 40% of companies participate in the the program
• About 97% of all students have graduated with a VET Diploma (Vocational Education & Training) or other high school degree
Apprenticeship System

- Similar coursework Kindergarten through 10th grade.

- Practical work experience education starts at age 15 and typically lasts 2-4 years. Hybrid of HS and community college vocational training.

- 3-4 days/week hands on work experience, 1-2 days/week in classroom

- Company nor student are bound to each other after training.

- Permeable system that allows youth to choose a career pathway, change industries and move on to specialized certifications or higher education.
The permeable system allows for all paths to result in whatever degree of education is desired with little to no backtracking, duplicative education, or dead-ends.
The Swiss System - Theory & Practice

- Dual track education of theory (classroom) and practice (on-the-job)
- VET students earn wages while working for host companies
- Companies teach students practical skills related to nationally approved training guidelines
- Intercompany training centers provide the “early practice” for students to learn industry specific skills and knowledge

**Practical skills**

**Theoretical skills**

**In-company training**

*Learning on the job*

3 to 4 days per week

**Intercompany courses**

*Basic skills*

Block courses 40 to 50 days

(1\(^{st}\) and 2\(^{nd}\) year)

**Vocational schools**

*Theoretical knowledge*

1 to 2 days per week
System Elements

• Federal responsibilities: system oversight, apprenticeship accreditation and testing

• Cantons (states): Local governments similar to our School Districts that are responsible for running the classroom curriculum and providing career guidance to students

• Private Companies: Over 230 approved occupations trained in apprenticeships at over 40% of all companies in Switzerland

• Many models for private sector training but most industry clusters belong to an association that provides standardized training approved by both industry and government

• Industry Associations include banking & finance, healthcare, technology, transportation, manufacturing, hospitality, etc.
The Role of Associations

SwissMEM is Switzerland’s Engineering and Manufacturing Association:

- Identify competencies
  - Re-evaluate every 5 years
- Develop training guides and assessments
  - Recognized by Confederation for VET Diploma and Baccalaureate Degrees
- Assist in development of apprenticeships
- Support trainers within companies
- Build and support intercompany training centers and other industry specific schools

Swissmem is responsible for the following VET programs:

- Mechatronic Engineer (4y)
- Electronic Engineer (4y)
- Technical Design Engineer (4y)
- Polymechanical Engineer (4y)
- Apparatus Engineer (4y)
- Commercial employee (3y)
Business ROI

- Savings on recruiting costs
- Training to industry standards = savings on retraining = higher productivity
- Loyalty to company. Typically 30% stay with training company (or return after college)
- Sustainable learning model through paid internships
- Aligned supply and demand of skilled workforce = number of apprenticeships dependent on market demand
- <4% youth unemployment rate
- Costs: depending on industry can be $20,000- $100,000 per apprentice for coaches, curriculum and material/equipment
- Canton pays for classroom training (secondary and upper-secondary school)
BASIC: Adapting the Swiss Model for Colorado

The Problem
- Colorado’s businesses face an ongoing shortage of skilled workers, making it difficult to identify, hire, and train the talent they need
  - Colorado faces ~25,000 unfilled weekly vacancies, resulting in ~$300M annual GDP loss
- Colorado’s current education and training systems are not aligned to the competencies needed by business to close the growing talent gap
  - The traditional secondary and post-secondary systems provide the academic “theory” for job readiness but not the real-world “practice” to develop job skills, business must step up to help with this.

The Solution
- To address this growing problem, Business and Schools in Collaboration (BASIC) facilitates youth apprenticeships that match talent development to the evolving needs of businesses
  - Businesses and industry associations develop apprenticeships for high demand roles
  - In 9th and 10th grade, students undertake a career exploration curriculum
  - In 11th and 12th grade, students pursue a paid, part-time apprenticeship
  - Students may complete a post-high school training year to receive a certified journeyman status, while obtaining higher education credits
  - After program completion, students may continue to work in industry, pursue additional technical training, or continue on to a 4-year degree program
- Apprenticeship programs like BASIC have improved high school graduation rates by 20%+, lowered hiring and training costs for businesses, and increased expected lifetime earnings for participants by 30%+
- By addressing the need for expanded apprenticeships starting in high school, we are also expanding the infrastructure for apprenticeships for all Coloradans.
- BASIC needs substantial funding over the next 3 years to stand up a core staff and establish the next 500 business partnerships across Colorado
Colorado’s businesses struggle to fill key positions, raising the cost of finding and hiring critical talent

Colorado currently has 25,000+ unfilled jobs a week

<table>
<thead>
<tr>
<th>Sector</th>
<th>2016</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td>5.4</td>
<td>3.1</td>
<td>2.4</td>
<td>3.9</td>
</tr>
<tr>
<td>Hospitality/Tourism</td>
<td>3.1</td>
<td>7.3</td>
<td>3.7</td>
<td>3.9</td>
</tr>
<tr>
<td>Manufacturing</td>
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<td>7.3</td>
<td>3.7</td>
<td>3.9</td>
</tr>
<tr>
<td>Banking/Finance</td>
<td>2.4</td>
<td>3.7</td>
<td>3.7</td>
<td>3.9</td>
</tr>
<tr>
<td>Information Technology</td>
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<td>3.7</td>
<td>3.9</td>
<td>3.9</td>
</tr>
<tr>
<td>Commercial Services</td>
<td>3.9</td>
<td>3.9</td>
<td>3.9</td>
<td>3.9</td>
</tr>
<tr>
<td>Total</td>
<td>25.8</td>
<td>25.8</td>
<td>25.8</td>
<td>25.8</td>
</tr>
</tbody>
</table>

The inability to fill key positions costs Colorado ~$300M in annual GDP

<table>
<thead>
<tr>
<th>Year</th>
<th>Colorado GDP</th>
<th>Projected hiring and training costs for skilled-roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>-300</td>
<td>24, 25, 26, 28, 29 (in $,000s)</td>
</tr>
</tbody>
</table>

Source: CO Dept. of Labor; Center for American Progress Jobs Training Report; Team Analysis
Colorado’s traditional education systems leaves some students without a clear and integrated path to a career.

100 9th graders begin high school

- 77 students reach graduation
- 44 enroll in college
- 35 Students return for a second year
- 23 Students receive a post secondary degree within 150% of allotted time (Certificate, associates or bachelors)
- 18 immediately enter employment in Colorado

23 do not graduate
33 do not enroll
9 do not return
12 do not

Colorado’s traditional talent pipeline falls short of preparing the talent needed by business to be globally competitive.

Works for only 18% - 23% of students

this looks much better....
Ryan Gensler, 3/28/2016
An example of a BASIC Model for High Schools

Example BASIC approach, Grades 9-12 + post-secondary

Freshman Expose

- Tier 1 Courses: Intro and Survey

Sophomore Navigate

- Tier 2 Courses: Specialized

Junior Connect to Apprenticeship

- Tier 3 Courses: Specialized

Year 12 (Community College)

- Tier 4 Courses: High School Diploma

Year 13 (Community College)

- Tier 5 Courses: Completion

Career Explorations Group Job Shadow Program

Career Coach Mentoring

Pre-Apprenticeship Program

Apprenticeship Program

Ongoing mentorship and support

BASIC aspires for students to complete apprenticeship with the option to:
- Earn industry certifications and college credit
- Pursue an associate’s degree
- Gain preferential transfer admissions into competitive 4-year programs
- Secure industry certifications where applicable
- Directly enter a sustainable high skill career
BASIC gives Colorado businesses the tools they need to develop a highly skilled workforce

<table>
<thead>
<tr>
<th>What BASIC does</th>
<th>Why BASIC works</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Turn Colorado’s companies into Centers of Learning, allowing students to convert theory into practice through career exploration and apprenticeships</td>
<td>Reduces all-in employee hiring and training cost by 20%+1</td>
</tr>
<tr>
<td>2 Creates industry-specific talent pipelines by defining the competency standards and curriculum needed to prepare for high-demand jobs</td>
<td>Remains ROI neutral for participating businesses due to student productivity2</td>
</tr>
<tr>
<td>3 Connects businesses and schools, linking talent development with an ever-changing labor market</td>
<td>Delivers 23X lifetime return3 on taxpayer dollars invested in education and workforce training</td>
</tr>
<tr>
<td></td>
<td>Provides program graduates with a median annual wage of ~$50,0004,5</td>
</tr>
<tr>
<td></td>
<td>Increases participants’ high school graduation rate from 77% to 93%6,7,8</td>
</tr>
</tbody>
</table>

1 Boushey and Glynn “There are Significant Business Costs to Replacing Employees” 2012. 2 Canadian Apprenticeship Forum, “It Pays to Hire an Apprentice: Calculating the Return on Training Investment for Skilled Trades Employers in Canada” 2009. 3 Hollenbeck 2012 Washington workforce training results by program. 4 US Department of Labor Employment and Training Administration. 5 Washington State Workforce Training and Education Coordinating Board: Significant variation in median wages for apprentices exists; apprenticeship participants’ median wage is $28.61 while the lowest quartile earns $17.85 and highest above $38.40. 6 CO Dept of Education. 7 US Dept of Education. 8 Civic Enterprises et al., Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic: Annual Update, 2015
**BASIC improves Colorado’s talent pipeline by building an aligned, compatible system of skills-based certifications, credentials & degrees**

**Government:**
- Provide legislative support, incentives, and funding; support the standardization of BASIC across Colorado
- High-level vision and coordination from BEL Commission
- Develop and expand sector partnerships
- Build on existing models

**Businesses:**
- Provide apprenticeship opportunities for students to blend theory and practice
- Gain certification as Centers of Learning (C-COLs) to host and hire apprentices
- Fill talent pipelines through engaging career exploration and apprenticeship training
- Support student recruitment/outreach in region
- Develop industry competency standards and curricula based on talent needs

**Schools:**
- Teach the theory that underpins industry practice
- Provide career guidance and exploration
- Facilitate entry into apprenticeship programs
- Assist in the development of and evolution of competency-based curriculum

**Parents and Students:**
- Actively participate in career exploration
- Learn about all opportunities for educational and career planning
- Proactively seek opportunities
- Fulfill commitments to educational, and work-based learning experiences

**Post-Secondary Education:**
- Partner to help determine appropriate higher education pathway for each student
- Facilitate stackability of work-based and classroom-based credits
- Adjust content focus to reflect evolving industry competency standards and curricula

**Industry Associations:**
- Develop competency standards and curricula
- Leverage sector partnerships to deepen involvement and connections in all regions
- Provide C-COLs with training protocol and guidelines

**Community-Based Organizations and Workforce Centers:**
- Provide complementary services and programs to support students
BASIC is positioned to play a key role in Colorado's emerging workforce development ecosystem

- Network of businesses and schools for K-12 workplace learning
- Statewide infrastructure for industry engagement
- Governor's platform to champion workplace learning
- Supports career training for opportunity youth (age 16-24, out of school and work)

BASIC will build on Colorado's emerging workforce development infrastructure

- Regional, industry led sector specific, public-private partnerships
- Address common, critical issues, and implement solutions

- A series of connected education and training programs, work experiences, and student support services, driven by industry.

- Career and technical programming in schools

- Concurrent Enrollment; ASCENT; Grad Guidelines tools to help high school students begin college credits up to an Associate's Degree in High School
Do we need to add Skillful?
Ryan Gensler, 3/28/2016
Leading businesses across the state have partnered with BASIC

<table>
<thead>
<tr>
<th>BASIC sectors</th>
<th>Partners</th>
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<tbody>
<tr>
<td>Business</td>
<td>INTERTECH Plastics, PINNACOL ASSURANCE, EKS&amp;H, rk, KAEIS PERMANENTE,</td>
</tr>
<tr>
<td></td>
<td>PINNACOL, 1-TBANK</td>
</tr>
<tr>
<td>Industry Intermediaries</td>
<td>CAMA, Colorado Advanced Manufacturing Alliance, COLOREADO TECHNOLOGY</td>
</tr>
<tr>
<td></td>
<td>ASSOCIATION, COLORADO BANKERS ASSOCIATION, Sector Partnerships</td>
</tr>
<tr>
<td>Education</td>
<td>DENVER PUBLIC SCHOOLS CAREERCONNECT, Cherry Creek Schools, COLORADO</td>
</tr>
<tr>
<td></td>
<td>COMMUNITY COLLEGE SYSTEM</td>
</tr>
<tr>
<td>Community</td>
<td>Mile High United Way, I HAVE A DREAM FOUNDATION, Bloomberg Philanthropies</td>
</tr>
<tr>
<td></td>
<td>Daniels Fund, DENVER METRO CHAMBER OF COMMERCE, CDOT, CDDE, CDLE, CDME</td>
</tr>
<tr>
<td>Government</td>
<td>Colorado Workforce Development Council, COEDIT, CO, CDE, CDLE, CDME</td>
</tr>
</tbody>
</table>

1 Partnership in progress

As a business-led initiative, designed to respond to an ever-changing economy and labor market, BASIC operates independently of Colorado’s political and economic cycle.
Over the next 10 years, BASIC will evolve from the pilot phase to national leadership in talent development

Stage 1 Design (2015)
- Identify initial business partners
- Build pathways from business to students
- Define initial sectors and required competencies
- Build initial organization model and start-up team

Stage 2 Pilot (2016)
- Engage 6000+ students in DPS CTE programs
- Continue building Skillful, the competency-based labor market
- Recruit and on-board industry associations, sector partnerships and business partners
- Begin measuring to evaluate the impact of apprenticeship system

Stage 3 Initial Implementation (2017-2020)
- Certify 500 business partners in 6 sectors as centers of learning
- Grow apprenticeships and sectors as economy evolves
- Creation of an apprenticeship marketplace

Stage 4 Scale Statewide (2020-2024)
- Move toward industry-funded, sustainable model
- Fill 20,000+ apprentice positions across Colorado
- Refine, test and share competencies at the national level

Stage 5 Sustain (2024-)
- Continue to facilitate business community leadership in workforce training
- Respond to a changing economy and labor markets by updating and adjusting training annually
- Support efforts to build a national apprenticeship model by sharing lessons learned across the U.S.

To move from Stage 2 to Stage 3, BASIC must stand-up a full time organization with strong program and relationship management capabilities

BASIC is ready to move from the design and pilot phase to broader implementation across the State of Colorado
The business community will provide increasing financial support to BASIC as the program grows.

As BASIC grows, state, federal and foundation funding will be replaced by support from the business community.