



Workforce Training and
Education Coordinating Board

Workplace-Based Digital Learning Programs

Preliminary Report December 2008



Introduction

The 2008 Legislature passed Engrossed Senate Substitute Bill 6295 that directs the Workforce Training and Education Coordinating Board (Workforce Board) to review best practices for workplace-based learning with “electronically distributed learning components,” and to work with the State Board for Community and Technical Colleges (SBCTC) to study and make recommendations on digital learning programs.¹ The Workforce Board is to provide a preliminary report to the Legislature by December 1, 2008 and a final report by December 1, 2009. This is the preliminary report.

Adults Need More Education and Training

The purpose of the studies that the Legislature has requested of the Workforce Board and SBCTC is to identify ways to expand access to education and training for Washington residents, especially adults.

We know that better than one out of three Washington high school graduates do not carry on with their education in the year following graduation. Instead, they go directly to work, relying exclusively on their high school diploma to gain entry into mostly low-wage, low-skill jobs.² Employers who hire these young people report that too many lack basic workplace or employability skills, and the specific job skills that employers are looking for.³

Many adults will continue to postpone their plans for further education because of the need to work and support themselves and their families. Yet, we have evidence that, on average, an individual needs at least one year of postsecondary education and a

¹ There are number of ways to reference the concept of using computer technology and resources to expand the reach of our education system. For this paper, we will use the term digital learning for electronically distributed learning, eLearning, digital textbooks and other related services that support computer-support education.

² OSPI, Washington State Graduate Follow-Up Study: Class of 2005 All Graduates First Year after Graduation, <http://survey.sesrc.wsu.edu/gfs/pdfpapers/class2005y1allgrads.pdf> (2007)

³ *Workforce Board High Skills, High Wages 2008-2018: Washington's Strategic Plan for Workforce Development*. 2008.

credential to have a job that pays enough to support oneself and one's family.⁴ To ensure more working-age adults access education and training, we need to develop more portable and flexible education delivery methods through digital learning, including providing education and training at the workplace.

Progress to Date

- **Evaluation of Workplace-Based Digital Learning Programs.** The Workforce Board contracted with the Social and Economic Science Research Center at Washington State University to review national best practices and key issues in workplace-based digital learning. The review is completed and included in this report.
- **Convened an Executive Advisory Team and key stakeholders.**
 1. The Workforce Board convened key industry and education stakeholders and the Executive Advisory Team as per the authorizing legislation on December 2, 2008 at a facilitated session to scope industry and education needs and develop continuing work for 2009. (See Attachment A)
 2. The Workforce Board created an online workplace-based learning network for stakeholders and Executive Advisors to continue the conversation started in December 2008 (<http://workplacebasedlearning.ning.com/>).
- **Completed a *Strategic Technology Plan* for the community and technical colleges.** SBCTC convened a Technology Transformation Task Force and has completed a Strategic Technology Plan for the Community and Technical College system. This document contains detailed system plans for digital learning and free textbooks.
- **Preparing to convene a digital learning subgroup of the Executive Advisory Team.** SBCTC is in the process of convening a subgroup, as per the authorizing legislation, to:
 1. Review digital learning best practices;
 2. Recommend methods to increase student access as well as identify barriers to participation and completion;
 3. Determine methods to increase the supply of open course materials;
 4. Recommend methods to increase the availability of free, open textbooks; and
 5. Review and report demographic information on digital learning programs including enrollments, retention, and completion.

⁴ Washington State Board for Community and Technical Colleges, Research Report No. 06-2: *Building Pathways to Success for Low-Skill Adult Students: Lessons for Community College Policy and Practice from a Longitudinal Student Tracking Study* (The "Tipping Point" Research). April 2005.

- **Pursuing and contributing to open educational resources.**
 1. SBCTC joined and is actively participating in the Community College Consortium for Open Educational Resources: <http://cccoer.wordpress.com>
 2. SBCTC is participating in the Community College Open Textbook Project: <http://www.collegeopentextbooks.org>
 3. SBCTC contributed to a national, student-run report on Open Textbooks titled: "Course Correction: How Digital Textbooks are Off Track and How to Set Them Straight": http://www.maketextbooksaffordable.org/course_correction.pdf
 4. If funding is available, SBCTC plans to redesign, with open content and open textbooks, 75-100 system shared courses in 2009.
- **Raising faculty and leadership awareness:** SBCTC continues to raise faculty and college leadership awareness through presentations and a blog on open educational resources: <http://blog.oer.sbctc.edu>

What is in this Preliminary Report?

Part 1	Summary: <i>Evaluation of Workplace-Based Education Programs</i>
Part 2	Washington Community and Technical Colleges' Strategic Technology Plan – Executive Summary
Part 3	Next Steps
Attachment A	December 2008 Workplace-Based Learning Forum <ul style="list-style-type: none"> • Event proceedings • Executive Advisory Group Membership and Industry/Education Advisors • Workplace-Based Learning Networking Site
Attachment B	Washington Community and Technical Colleges' <i>Strategic Technology Plan</i>
Attachment C	<i>Evaluation of Workplace-Based Education Programs</i>
Attachment D	ESSB 6295 as passed in Session Law

Part 1: National review of workplace-based digital learning programs - Summary

The Workforce Board contracted with the Social and Economic Sciences Research Center (SESRC) at Washington State University to identify and evaluate current national private employer workplace-based digital learning--programs with electronically distributed learning components--provided by public and private colleges and universities.

In this exploratory assessment, the SESRC identified and reviewed literature and contacted practitioners who are involved with workplace-based education and training programs. The SESRC specifically looked for programs that are connected to a public or private college or university, and have electronically distributed components (including either web based/online and non-web based such as DVD, software, etc.). The Workforce Board provided coordination, consultation, and liaison services to facilitate the exploratory assessment.

In the full report (Attachment C), the SESRC identifies several "key strategies" for program success that emerged from its review of case studies and conversations with program managers. These strategies are part of what might become the "best practices" for workplace-based education programs with a college connection .

Key Strategies for Workplace-Based Education Program Success

1. Strengthen the community college position to reach out to the low wage/lower skilled workers.
2. Integrate remediation, basic skills development and ESL into the postsecondary curriculum.
3. Obtain "buy-in" from the top down at both the college and the employer company or organization.
4. Build a solid partnership between the college and the employer company or organization.
5. Develop workplace-based education programs with a work-based learning approach.
6. Involve college faculty members in the design and implementation of the workplace-based education programs.

7. Incorporate on-site supervisors or “faculty extenders” as instructors in the workplace.
8. Provide academic mentors for low wage/lower skilled workers.
9. Connect low wage/lower skilled workers to community organizations, social services, and public health resources.
10. Provide an incentive hierarchy for the workers progressing through the program.
11. Use E-Learning and other electronic components to enhance or facilitate the learning process for low wage/low skilled worker education programs.
12. Allow ample time at the outset for planning and design phase of workplace-based education programs
13. Accommodate unique aspects of various work settings in program design.

Part 2: WA Community and Technical Colleges' Strategic Technology Plan – Executive Summary

*Our state's most urgent need:
Educate more people to higher levels*

Washington needs more people with higher levels of education and skill to sustain our prosperity, our democracy, and our diverse and innovative culture. To achieve this goal, we can no longer simply wait for people to enroll in our colleges; we must reach out to all those who can benefit from further education, and help them succeed at learning.

Community and technical colleges are at the center of this challenge. Our open door policy meets people wherever they are on their educational journey, whether they are high school dropouts, new immigrants, high school graduates seeking a college degree or job skills, or mid-career professionals retraining for new opportunities.

Fuller use of information technology is key to making education more accessible and user-friendly for every kind of learner. But we are late to recognize the educational impact and potential of the Internet, late to take advantage of the shift to open, student-centered, web-based applications, and late to listen to what our students and faculty are telling us about what they need to thrive in the 21st century.

Even though we are ahead of many other states in our use of online learning, we are far behind the level of technological sophistication of today's workplaces, and far behind in mobilizing technologies that could help increase student learning, provide friendlier, faster student services, and improve administrative efficiency, data analysis, and accountability.

*One, single-minded goal:
To mobilize technology to increase student success*

This plan addresses all of these deficits. But while most strategic plans have many goals, this plan has only one: to mobilize technology to increase student success. It lays out clear principles, strategies, and action steps that will transform our use of technology for the benefit of all learners and the faculty who teach them.

These principles, strategies and action steps are the result of an 18-month analysis conducted by the Technology Transformation Task Force of the State Board for Community and Technical Colleges. The Task Force conducted extensive surveys, focus groups and interviews with students, faculty, staff, and education and information technology experts and educators from across the country and around the world. It also analyzed the community and technical college system's successes and mistakes in the deployment of information technology during the past 25 years. We are now implementing what we can with existing resources and seeking funds for additional needed investment.

The Task Force's work dealt with three major areas of technology deployment: student learning, student services, and administration. In all three areas, the Task Force found a need for greater uniformity across the 34 colleges in the system and with our partners in the broader P-20 education system.

Today's patchwork of programs often requires students to learn multiple online learning programs and use multiple passwords. Not all colleges use WashingtonOnline, the system-wide platform for online learning, because they must pay to do so. The result is a constriction in the number of online courses that are available to students throughout the state. Students also must pay an extra fee to take an online class. This plan proposes to end both fees and to fund online learning not as a special add-on, but part of the baseline of expected service.

This plan also recommends a shift from locally developed software and hosting services. Today, the private sector and public, open source communities have developed applications and hosting services for online learning, student services, and administration that include automatic updates that continue to add functionality. We will not try to do what others can do better, faster, and for less money. We will shift our best and brightest IT staff from software developers to integration experts who tie together best-of-breed applications.

But the biggest shift called for in this plan is cultural. In the end, catching up with today's information technologies is not about technology itself; it is about a new world of open, online sharing where everyone has the power to create and disseminate their ideas, courses and textbooks and to re-mix and use others' work. It is about simultaneous collaboration with peers across the hall and around the world. To be a part of this world – and to help create it – both our students and our faculty need new tools, new competencies, and an education system that is organized to support the fullest possible use of the vast new learning resources available at their fingertips.

Five strategies for transformation

- I. Create a single, system-wide suite of online teaching and learning tools that provides all Washington students with easy access to “anywhere, anytime” learning.**
- II. Create a seamless P-20 system for personalized online student services including: recruitment, retention, advising, course catalogue, transfer, and financial aid management.**
- III. Create a system of lifelong learning and change management for faculty, staff and college leadership.**
- IV. Use data to drive continuous improvement in both student success and administrative efficiency.**

V. Treat information technology as a centrally funded, baseline service in the system budget.

Part 3: Next Steps

Stakeholder Development Event -- Late Spring 2009

In late spring 2009, the Workforce Board, in partnership with the Executive Advisory Team, will convene work groups of industry and education stakeholders to create an implementation plan based on the models for workplace-based learning developed during the December 2008 facilitated sessions (Attachment A).

This event will seek to engage employers and organized labor with educational institutions in both the pedagogical matters and practical, technical and financial requirements of creating viable workplace based learning initiatives. Workforce Board staff will work in consultation with the Executive Advisory Team to prepare recommendations on models that are feasible for implementation.

Initiative Launch -- Second Half of 2009

The current plan is to launch pilot workplace-based digital learning projects in the second half of 2009. While pilot projects were included in the enabling legislation, they were not funded. The need for pilot project "seed funds" will be included in the analysis of barriers to implementation conducted by the Workforce Board in consultation with the Executive Advisory Team.

Attachment A

Executive Advisory Group and Industry/Education Advisors Meeting

December 2, 2008

Seattle, Washington

Introduction

These are notes from a day-long kick-off event for Washington's Digital Workplace-Based Learning initiative.

Leaders from the educational community started the day with a discussion focused on both the strategic and tactical considerations for how to implement digital workplace-based learning programs. Next, industry, labor and business leaders convened to discuss the strategic and practical requirements to make the initiative work for employers and workers. The initiative's Executive Advisory Committee participated through both meetings and then convened to process their learning and devise next steps.

A complete participant list of the Executive Advisory Committee and participants follows at the end of the notes.

Education Leaders' Discussion

- Make use of translation and pronunciation software.
- Use "Universal Design for Learning" (multiple modalities)
- Commitment of all partners to "Partnership as Learning Community"
- Use workplace supervisors and peers as coaches and mentors
- Have incentives for partnerships
- Help employees recognize/understand their metacognition skills

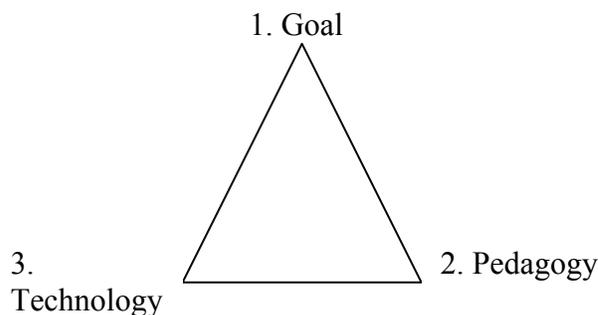
Design a Model Program that:

- Encourages small and large employers
- Includes multiple employer sites
- Requires employer support for worker learning
- Loans laptops and air cards
- Focuses on already recognized career pathways (limited new development)
- Articulates a clear process for partner dialogue and decision-making
- Reward obtainment of credentials for credit
- Commits all partners to new ways of doing business, including support and sustainability of what works
- Includes development of employability, critical thinking, problem-solving, and computer literacy skills
- Operates 24/7 Help Desk
- Customizes to meet employees learning (where they are in their learning)
- Achieves employer buy-in at the top to be successful
- Is culturally competent

- Provides paid release time for employees
- Allows people to learn in languages other than English
- Starts with employer-identified competencies (make it employer-driven)

Other Pilot Considerations

- Digital learning requires digital literacy
- As much as possible, find opportunities to make learning happen on the job
- Be strategic and explicit about the skills – and meta-skill (being a learner), needed (being a facilitative educator)
- Focus on continuous learning (this is about cultural change for employer and college)
- Credit for prior learning
- Economy of scale
- Business identify needs
- Coordinate needs and address course/training to meet needs of many pooled businesses (use internet based needs identification and combine requests)



- Provide certification through work based learning with support from the public sector to validate the certification
- Self-learners who are aware of the learning process are empowered to pursue continued education and become innovative and creative workforce contributors
- Work based learning should teach core skills so as to produce the skilled responsive work force required to be globally competitive
- Incorporate the supervision into the learning process
- Skills must work vertically and horizontally
Transferability across industries and vertically on occupational pathways
- Crisper definition of competitive workforce
Profile: hard working, engaged, self-learning
How to measure?
- Goal → Model → Technology
- Making the system more efficient – e.g. Sharing content

Employer Buy-In

Tactical questions:

- How to ready faculty? Tech and development need time and resources
- The most general the training, the more support from employees
- Assess the extent to which workers provide training is a recruitment tool and retention tool
- Use digital learning to allow multiple sites of same employer to deliver similar training
- Education provider can develop modules that can be deployed again and again

Who are customers, stakeholders, shareholders? (Buy-in – how will they benefit? What will they need to succeed?)

- Workers
- Employers
- Community college (including post-secondary education and basic education)
- The state

What is a competitive workforce?

- Nimble, flexible, responsive to changing needs of industry
 - Basic skills: reading, writing, math, computer literacy
- Creativity; entrepreneurial thinking
- How to learn

Question is not what technology to use, but what do we want at the end of the day?

- Then how to use hybrid, web-enhanced, online?
 - Where does digital learning make the most sense?
- How would we design this to work with small companies
- Academic credit and certification
- Do we start from employers first?
- Are faculty ready?

End of the day, how do we measure this?

- Value-add for state:
 - For WA to be competitive
 - For WA to live with dignity and economic independence
 - To meet needs of both workers and employers
 - Because of the convenience, access, and flexibility of digital-based learning
 - “Just doing it” has benefits:
 - Synergies
 - Innovations
- Avoiding the “one blend” that will work in every situation

Balance measurable benefits for:

- Employers
 - Immediate skills
 - Productivity
 - Future learning
- Workers
- Portable credentials
- Skills to progress
- Tipping Point (council)
- Plan for backfill of entry-level positions and realities of release time
- Leverage ability to integrate (no sequence)
- Address access to technology and skills to use
- Market to employers and educators
- Flexibility – business reality \longleftrightarrow academic sessions, schedule
- Issues of guidance, planning, counseling (climate of learning) plus low skills (distant learning)
- Work with unions and employers to change double-standards around employee investment/professional development

Industry Leaders' Discussion

- Use industry associations to help identify need (specifically for small business) and do outreach
- What is the delivery model? Is it a "thing," the model? Depends on need
- Contextualizing basic ESL and occupational skills (I-BEST)
- How do we get the information on needs across companies? Can we use this opportunity to create a way?

Worker and employer compatible goals – pathways

- Low-skilled, low-income
 - T.P. and recognize credential (system fixes for credentials and credits)
- Customized delivery recognizing digital potential
- Enhance applied learning using participatory strategic via digital
- Low-hanging fruit/"grab the opportunity."

Pilots lead to learning:

- Leg and government
- Higher education
- Employers
- Workers/unions

Definition of models of success

Identify public-private partnerships

What learn about digital potential (low income workers) – more flexibility, efficiency and low costs; better competition

How?

- Workplace-based with flexibility, paid time off, mutual employee/employer agreements on hours, etc.
- Employer matches
- Support services to reduce barriers to participation
- Bringing instructor to the work place
- Resources for the equipment
 - Ideally taking advantage of actual technologies of the workplace
 - Considering equipment needs of big vs. small business

Identify successful models that can be adapted to other industries

- Identify need

Establish industry/academic/labor/government collaboration to provide input for models
Workforce/professional development for faculty to give them a practical application of theoretical curriculum

Standardization of certification to foster broad acceptance (trans portable)

Course schedules adaptable to the workplace schedules

Establish program management so as to achieve desired outcomes

Value-add for state

- Opportunity to determine best use of this model depending on need: develop a cross-range of industry credential, certificate, customized, degree options.
- For WA to be competitive and adaptable in global economy
- Because existing programs are on “borrowed time”
 - Chance to recognize this as critical window

Opportunities for business

- Impact on bottom line
 - Employees more productive
 - Decrease turn over
 - Safety and related costs down

Identifying and training on core competencies (flexible, adaptable workers)

Getting past time and dollar barriers

- Reducing time and costs is a value added
- Demystifying the “process” and building desire

Recruitment tool

Time is a huge issue for small business – onsite could help with “release time”

Opportunities to upgrade existing training

Opportunities for workers

Getting past time and dollars barriers by integrating into work itself

Opportunities

Using “green” to transition workers and companies
King City – 51,000 kids who speak English as a second language
Making ESL in workplace efficient and effective
Utilizing qualified workers better
Using I-BEST
Making ESL relevant to occupations and careers

Other Models

SEIU – Hosp; Association – State dollars, community colleges – 5 programs funded
Partnerships, pathways, relationships, labor at table to bargain for training dollars, a focused joint project makes big issues manageable, digital is one component
Model: What are we trying to do? How can we get there, including use of digital?

ESL – digital programs for restaurant workers

Questions

Always a community college? University? Legislation calls for inclusion of post-secondary broadly
How to make this work for small business
Help employers without threatening proprietary information and needs
How do we make this not an either/or but serving both workers/employers.

Executive Advisory Team Discussion

Flexible

Easy to access

Design for diversity

- Workers
- Employers
- Access

Colleges/University needs to own product

Need strategy to reach employers who could benefit

Digital is one of the tools

How to make college more accessible to working adult (digital, WBL, other key principles)

Learner readiness to engage – how do we design with learners at multiple levels

What does “competitive workforce” mean to an employer?

Certification versus industry recognized credential and credit

Lot of moving pieces – success is looking at them integratively – align key ones (rubic’s cube)

Know target population

- Low income, immigrant – requires cultural competitive

Partnerships have to be real

Employers



Universities Learning community
Educators

Focus on outcomes/return on investment

Small business focus

Focus on tipping point

E-learning method, not model

Don't re-invest wheel

Help desk/learner supports

- Technical
- Reference librarians

Open – at least with in Washington

Tension – customizing versus open/transferrable

- Common and customize

Faculty extenders

LEGOs image – building blocks of workplace-learning components

I-BEST – learning about strategic chunking

Design for scale from outset

- Avoid funding with marginal money

Do we use “pilot” language or, preferably, “phases” of an initiative

To what extent is this about custom training for workplace versus using workplace for post-secondary education?

What do we have to build into pilots to build political support?

Next Steps

- Summarize results of this session
- Invite all to continue discussion via social network (Ning)
- Reach out to funders to explore alignment
- Create vision paper
- Aggressive data search re: employer needs; talk with associations
- Cross check with legislation

Attachment A

Executive Advisory Group on Workplace-Based Learning and E-Learning

* denotes required member as provided in SB 6295

Organization

Association of Washington Business
Community and Technical College Faculty*
Funders Collaborative
Governor's Executive Policy Office
Greater Spokane, Inc.
Higher Education Coordinating Board*
House Democratic Caucus
House of Representatives Office of Program Research, Higher Education Committee
Microsoft Corporation
Northwest Career Colleges Federation*
Prosperity Partnership*
Seattle-King County Workforce Development Council
Senate Committee Services, Higher Education Committee
State Board for Community and Technical Colleges*
Technology Alliance
The Council of Faculty Representatives*
The Council of Faculty Representatives*
The United Faculty of Washington State*
Washington State Hospital Association
Washington State House of Representatives
Washington State Labor Council, AFL-CIO
Washington State Senate
Washington State University*
Workforce Training and Education Coordinating Board

Work Group to Assess Industry Needs for Workplace-Based Learning (*invited*)

Includes industry (business and labor) members of the Executive Advisory Group

Organization

Association of Washington Business
Washington Economic Development Association
AeA Washington
Greater Spokane
Health Workforce Institute,
Washington State Hospital Association
Local Union #153 (roofers) and Pierce County Building & Construction Trades Council, AFL CIO
Northwest Marine Trade Association
Northwest Food Processors Association
PortJobs
Prosperity Partnership
Renton Chamber of Commerce

SEIU – Service Employees International Union
Small Business Development Center – Western Washington University
Technology Alliance
Thurston County Chamber
Washington Manufacturing Services
Washington Restaurant Association
Washington State Labor Council, AFL-CIO
Washington Technology Industry Association (formerly WSA)

**Work Group to Assess Education Needs for Workplace-Based Learning (*invited*)
Includes education members of the Executive Advisory Group**

Organization

Asian Counseling and Referral Services
Burst for Prosperity
Centralia College
Clark College
Higher Education Coordinating Board
Highline Community College
Independent Colleges
Neighborhood House
Northwest Career Colleges Federation
Olympic College
Pierce College
Seattle Jobs Initiative
Seattle-King County Workforce Development Council
Tacoma Community College
The Council of Faculty Representatives
The United Faculty of Washington State
Washington State University
Whatcom Community College

Attachment A Workplace-Based Learning Networking Site

http://workplacebasedlearning.ning.com/

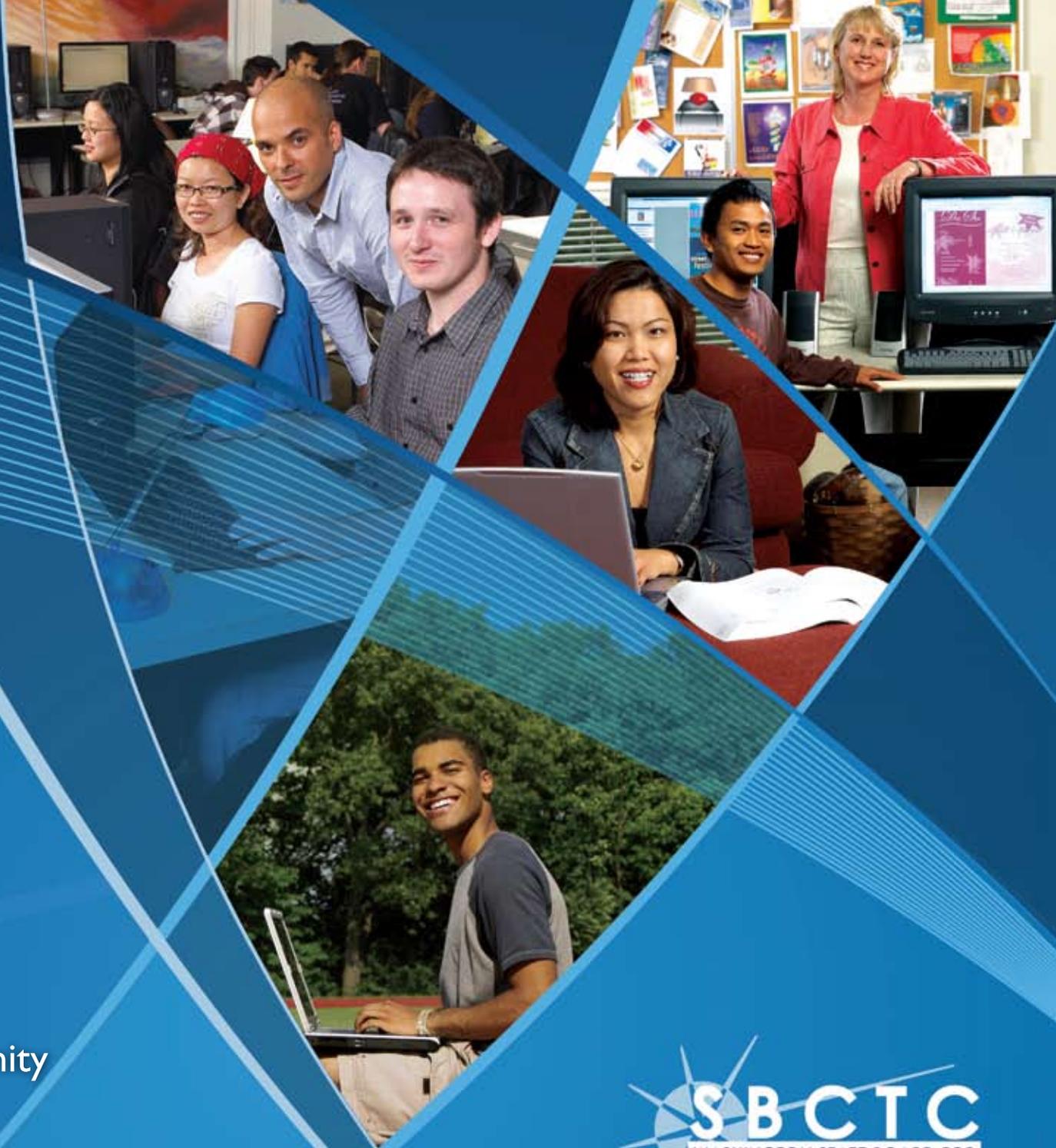
The screenshot displays the Ning website for 'Workplace-Based Learning'. The header includes the Ning logo and the text 'Create Your Own Social Network'. The user 'Carolyn McKinnon' is logged in, with a search bar and a 'Search' button. The main navigation menu includes 'Main', 'Invite', 'My Page', 'Members', 'Forum', 'Blogs', and 'Manage'. The page content is organized into three columns:

- Getting Started:** Provides instructions on how to join the network, including signing up, creating a profile, and uploading a photo. It also addresses a 'birthday question' and encourages users to introduce themselves and join forum discussions.
- Forum:** Lists several discussions:
 - Member Introductions:** 8 Replies, started by Carolyn McKinnon, last reply by Nicole R. Brown on Jan 9.
 - Notes from Kickoff Event (Dec. 2, 2008):** 1 Reply, started by Carolyn McKinnon, last reply by Carolyn McKinnon on Dec. 29, 2008.
 - SB 6295 - Creating workplace-based learning opportunities:** Started by Carolyn McKinnon on Nov. 24, 2008.
 - Best Practices in Workplace-Based eLearning:** Started by Carolyn McKinnon on Nov. 23, 2008.A 'Start Discussion' button and a 'View All' link are also present.
- Blog Posts:** Features an article titled 'E-Learn Magazine Articles' with the text: 'Here are two relevant articles to check out: Is E-Learning Effective in the Workplace? at http://www.eleammag.org/subpage.cfm?section=research&article=2-1 and Surveying the Future of Workplace E-learning: The Rise of Blending, Interactivity, and Authentic Learning at http://www.eleammag.org/subpage.cfm?section=research&article=5-1 Posted by Madeleine Thompson on January 9, 2009 at 2:52pm'.

The right sidebar shows the user profile for Carolyn McKinnon, including options to 'Sign Out', 'Inbox', 'Alerts', 'Friends - Invite', and 'Settings'. It also includes a 'Quick Add...' dropdown and a section titled 'About Workplace-Based Learning' with a photo of Carolyn McKinnon and the text: 'Carolyn McKinnon created this social network on Ning. Create your own social network!'.

Strategic Technology Plan

For Washington State Community
and Technical Colleges



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Preface

This strategic technology plan is the product of an intense 18-month analysis conducted by the Technology Transformation Task Force of the State Board for Community and Technical Colleges.

The Task Force examined the role and impact of web-based learning and the use of information technology in higher education throughout Washington, across the U.S., and around the world. Task Force members also listened carefully to the experiences and opinions of Washington students, faculty, and staff. It quickly became apparent that this was an exercise in measuring the growing distance between what is and what ought to be.

As the Task Force's work progressed, its sense of urgency about the need for change grew. The gulf between what younger "digital generation" students expect – and what the community and technical college system currently provides – is widening with every passing month. A generational, structural change is taking place in how people learn and what online services they expect. The online, interactive world is second nature to more and more of today's students, and colleges that don't recognize the centrality of this shift face impending irrelevance.

Equally important, online learning has untapped potential to meet educational needs that have gone unmet for generations. The barriers of time, distance, and conventional classrooms prevent far too many working parents, immigrants, high school dropouts, and mid-career professionals from improving their lives and increasing their contribution to our society and economy. And today, rising transportation and energy costs make expanded online learning an even more urgent need.

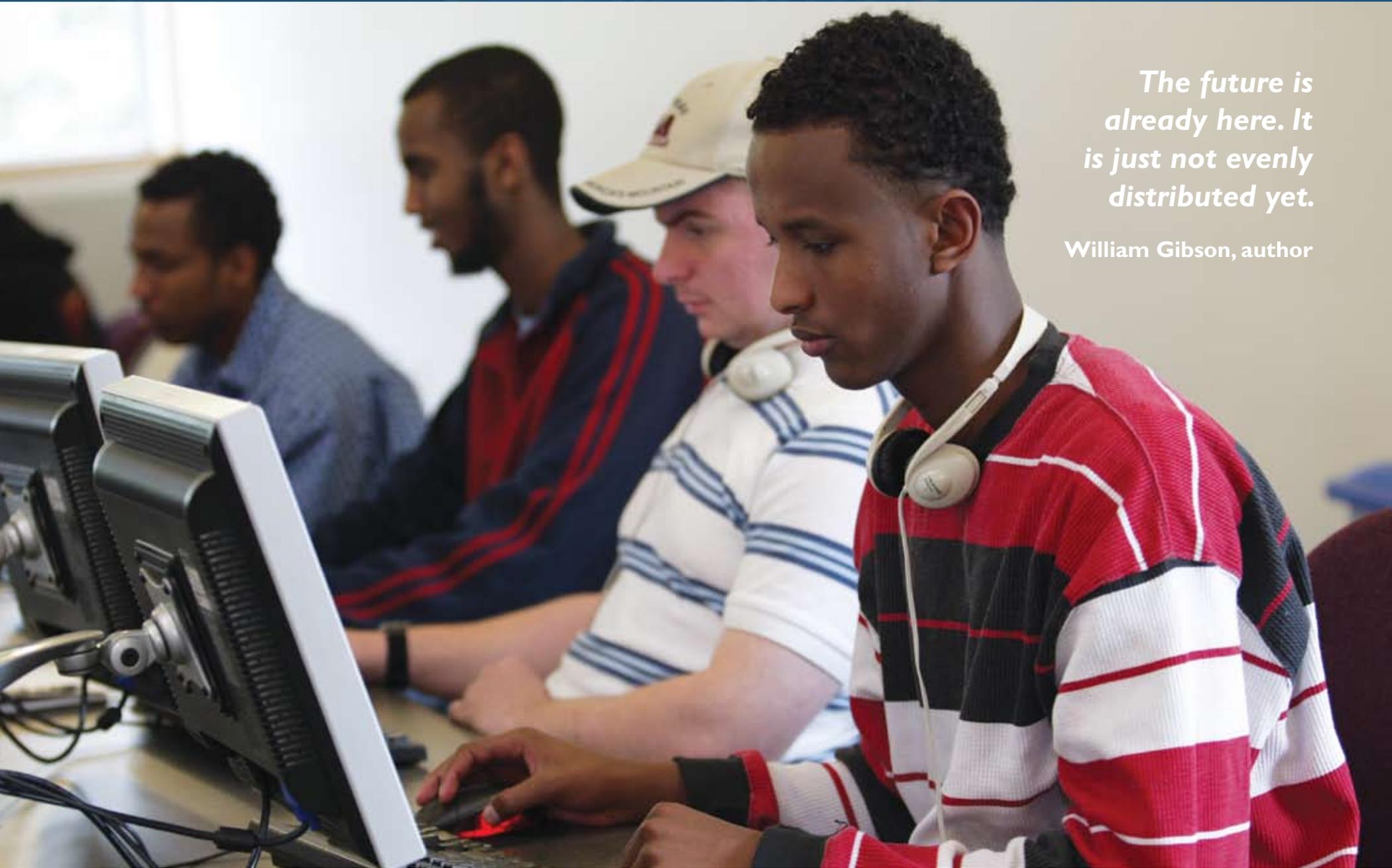
Outdated, inflexible data systems currently prevent the community and technical college system (and its partners in the P-20 education system) from sharing and analyzing information that could help pinpoint and seal the leaks in Washington's education pipeline.

A similarly outdated patchwork of online learning and student services systems fails to provide the seamless, efficient, and transparent 24/7 online services students and prospective students need to find, enter, and complete the education and training programs that can transform their lives and our state's economy.

The Task Force's conclusion is that we clearly do not have a 21st century information technology system. We are late to recognize the educational impact and potential of the Internet, late to take advantage of the shift to open, student-centered, web-based applications, and late to listen to what our students and faculty are telling us about what they need to thrive in this new era.

What emerged from the Task Force's work is a clear vision of how we can confront this growing crisis, close the distance between what is and what ought to be, and transform our use of technology to help meet the urgent educational needs of our citizens and our state.

We recognize that this plan, like the technology it describes, must be frequently updated to remain relevant and useful. We also recognize that meaningful commitments must be followed with meaningful resources, in the form of funding, time for professional development, and thoughtful and sustained leadership.



*The future is
already here. It
is just not evenly
distributed yet.*

William Gibson, author

Introduction

Washington needs more people with higher levels of education, and to meet that goal, there is broad consensus that change and innovation are urgently needed. The principles in the community and technical colleges' System Strategic Direction include a clarion call for policy and investments "centered upon student needs, student diversity, *the impact of new technologies*, and enhancing students' knowledge, skills and educational attainment."

Raising educational attainment is also the overarching goal of *Washington Learns*, Governor Gregoire's groundbreaking 2006 examination of cradle-through-career education in Washington, and *Moving the Blue Arrow*, the Higher Education Coordinating Board's 2008 Master Plan for Higher Education in Washington.

To meet the goal of rising educational attainment, Washington must expand educational opportunity not only for young people, but also for adults who are already in our workforce. We need to actively recruit them and to encourage them to reach higher and complete the education and training programs that can transform their lives and the economy of our state.

Community and technical colleges are at the center of this challenge. Our open door policy meets people wherever they are on their educational journey. We serve high school dropouts, new immigrants, mid-career college graduates seeking new skills, and everyone in between. Our missions include workforce training, college degrees and certificates, adult literacy and basic education, English instruction for immigrants, and continuing education for lifelong learners.

Washington's 34 community and technical colleges are already key to Washington's progress and prosperity and to our students' ability to succeed in today's competitive global economy. Today, over 470,000 people are enrolled in one or more of our programs, and over the years, countless Washington residents have launched their careers from one of our campuses.

Still, we know we are not doing enough to meet the needs of this young century. To raise the levels of skill and knowledge needed to sustain economic prosperity, we cannot wait for students to come to us. Research tells us that not all students learn best in a traditional classroom setting. And we certainly cannot serve the people who need education the most by continuing the practices that have left them behind in the past.

To reach out to today's learners, we must dismantle the barriers of geographic isolation, cost, competing demands of work and family life, and past educational failure and frustration. We must create a system for learning that is welcoming to all, easy to enter and use, and tailored to the needs of each learner. Most important, we must create a system that fosters the personal relationships and support all human beings need to learn and thrive.

Today, technologies that can help us achieve these goals are unevenly distributed and under-used in our society and in our college system. Like other organizations, our community and technical college system struggles to keep up with changing technology. And like most other organizations, our system has made misjudgments about where technology was headed and how we should adapt. But we have also had our share of success with technologies that have provided innovative online learning, improved student services and administrative efficiency. This plan represents all we have learned from our successes, from our mistakes, and from the experiences of our peers across the country and around the world.

This plan also represents our sense of extreme urgency about our need to catch up, keep up, and provide all colleges and all students with the technological tools and support services they need to succeed in the 21st century.



Technology, teaching and learning

Our expectations about how technology can support teaching and learning have changed dramatically in the last decade. Little more than ten years ago, sitting at a computer was an isolating, solitary experience. Internet connections were slow and unreliable. Navigation required experience, patience and skill. And competent, confident users of the Internet tended to be mostly young, relatively affluent people.

Today, computer use has penetrated far more deeply into diverse populations. It is also much more focused on social interaction, with applications ranging from web-based phone and video to social networking sites to lifelong portfolios. The online world is vastly easier to navigate, so even beginners quickly gain confidence and skill in online environments.

As the Internet transforms the way we communicate with one another, do business, and entertain and inform ourselves, it is also profoundly changing how people learn. It presents a vast, borderless new opportunity to extend the reach of our educational institutions, to personalize learning, and to dismantle barriers of time, distance, and discomfort with traditional classrooms.

The learning styles and preferences of young people who have grown up online showcase these changes. Today's high school graduates are less linear and sequential, and more likely to multi-task – to chat online, monitor the news, and listen to music while they study. They expect constant interactivity and collaboration. They both consume and build the Internet by writing their own blogs, by maintaining their own social networking pages, and by contributing to sites like YouTube.

For this generation of learners, there is little tolerance for the traditional “I lecture, you listen” method of instruction. Why should they sit in a lecture hall

when they could listen to a podcast of a lecture while working out or doing their grocery shopping? In fact, why would they listen to a lecture at all? This generation of learners prefers exploration, conversation, inquiry, and active engagement.

But it is not just the millennial generation that can benefit from technology-enhanced learning. Even those who have never touched a keyboard, and who lack home computers, find that learning online eliminates the performance anxiety of traditional classrooms and allows them to make mistakes and learn at their own pace without the fear of disapproval or ridicule. For adult learners who suffered as children from undiagnosed learning disabilities or other causes of classroom failure, this can be a transformative experience.

Accessible design technology and universal web design can also level the playing field for students with disabilities. New technologies offer an expanding array of benefits to students who are blind or visually impaired, to students who are deaf or hard of hearing, and to students with physical disabilities that preclude the use of a mouse or keyboard.

Still, new technologies are no substitute for good teachers. All students – from the tech-savvy to the tech-neophyte – benefit from the guidance of an expert instructor with deep subject knowledge, a wide array of teaching strategies, and the ability to bolster student motivation, interest, and confidence. Learning is and always will be deeply personal. And today, interactive learning technologies provide teachers and their students with new ways to connect with each other and the world through networked learning communities.

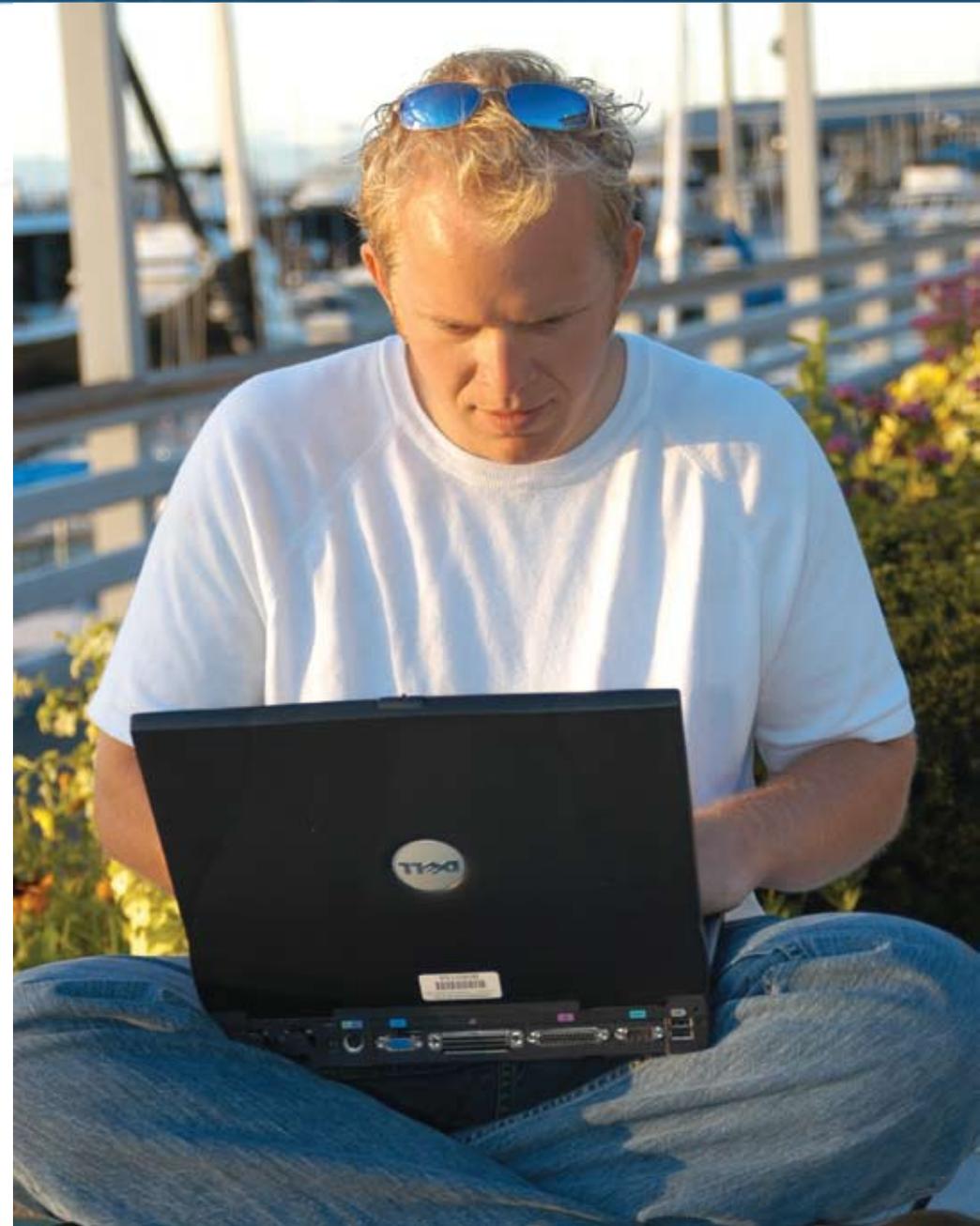
Technology and student services

In recent interviews and focus groups, students asked why they cannot get their financial aid checks electronically deposited. That was a tip-of-the-iceberg question that points to the growing gap between the use of convenient, web-based consumer services in the commercial world and in our colleges.

Student advising requires making appointments, finding a parking place or taking a bus, and sometimes standing in line – all for a transaction that could be handled with online services. For many students, this transaction also requires taking time off work or finding child care.

So providing more convenient, online student services – online advising, online registration, education and career planning, searchable course catalogs, transcripts, library services, tutoring and financial aid management – all through a one-stop student portal – will clearly bolster student recruitment, retention and success. A one-stop portal should serve as a “dashboard” from which students can log in and have access to all their courses, their financial aid accounts, educational plans, and grades.

Online student recruitment and advising can also serve middle and high school students who need to explore their options and plan the education they will need to achieve their dreams. User-friendly online resources can help these students by demystifying college and financial aid, by providing personal e-mail responses to their questions, and by establishing early relationships between students and colleges.



Education technology trends

Online learning growth

Online learning in Washington community and technical colleges has grown 715% in the past eight years.

In fact, the growth of online learning in Washington's community and technical system is outpacing the nation. Nationally, online course-taking has grown by 10%; however, in our system, the rate of growth exceeds 15% per year. Twenty-three of our 34 community and technical colleges offer a total of 86 different degrees and certificates completely online, and 16 colleges offer a completely online AA degree.

Online learning is also becoming a more important part of classroom-based courses. While 11% of community and technical college courses are fully online, an increasing percentage of "hybrid" courses replace some, but not all, classroom or worksite instruction with online learning. "Web-enhanced" courses that use online resources as a supplement to classroom work also continue to grow. Our colleges have done better than many other states in offering online learning, but there is huge untapped potential for growth.

Growth in Online Courses

Fall FTE: 1998-2010



Online learning growth, cont.

Today, students expect their instructors to post the course syllabus, reading list, assignments, and grades online, to respond to e-mailed questions, and to encourage collaborative online discussions. Tech-savvy students want more opportunities to learn online and more ways to collaborate and communicate with each other and with students around the world.

Faculty want to be able to lead – not follow – their students' growing use of these new learning tools, but they often lack the training and support they need to do so. Faculty have clearly expressed their desire to be at the center of technology planning and innovation.

In spite of the almost explosive growth in online learning, there are obstacles to full student and faculty access to its benefits. Students must pay an extra fee for each online course they take. In many colleges, there is no specific preparation program for students who have not used computers or the Internet before, and there is often no assessment to measure students' readiness for success in online classrooms.

Many students who could benefit from online, hybrid, or web-enhanced classes may still be intimidated by the technology, shut out by the extra fees, or discouraged by the difficulty of finding and enrolling in the classes they need.

Colleges also face obstacles and disincentives to improving and expanding online learning. Each college must pay fees to participate in WashingtonOnline (WAOL), the community and technical college system's statewide platform for online learning. There is no statewide system of professional development for college faculty and staff who want to master new technologies and tools. And there are no dedicated funds for technology investments, innovations or training.

As the online environment changes the way students learn, it is also changing the nature of teaching. Faculty are becoming facilitators who plan, orchestrate and guide learning rather than sole source providers of knowledge. Recent surveys make it clear that this is a transition that faculty are eager to embrace, but to do so, they will need training and support, time for collaboration with peers, and a voice in technology choices and deployment.

Online Learning Definitions

Online courses are conducted completely on the web.

Hybrid courses replace some – but not all – classroom time with online learning. For instance, a class that would ordinarily meet five days a week might meet three days a week, and substitute online activities to replace the other two class sessions.

Web-enhanced courses meet in regular class sessions, but use online resources for additional student-teacher and student-to-student interaction, posting of assignments, course materials, and student research.

WashingtonOnline (WAOL)

is a system-wide service provided by the State Board for Community and Technical Colleges. WAOL provides a platform for colleges to share course content, open textbooks, and online course enrollments so that students enrolled in one college can take online classes offered by another. Colleges can also use the WAOL platform to support their own online, hybrid, and web-enhanced classrooms where faculty and students can read assignments, take quizzes, post grades, develop and share ePortfolios, and collaborate through online class discussions and webinars.

WAOL also provides 24/7 technical support, and professional development for faculty and staff and supports the NW eTutoring Consortium.

Open access

In 2001, the Massachusetts Institute of Technology launched an OpenCourseWare Initiative that placed all the course materials for 1,800 MIT courses online, free to anyone in the world. This was a defining moment and an immense change in how higher education thinks about its content. Each month, the MIT site receives about 1.8 million visits. A high school student reported that the website “contributed hundreds of hours to my education in physics as well as biology. Discovering and utilizing MIT’s OpenCourseWare site was like finding \$40,000 sitting on a park bench.” MIT is now one of many higher education institutions that share course content. Others include the Open University’s OpenLearn, Rice University’s Connexions, and collaborations like the Open Educational Resources Commons and the OpenCourseWare Consortium.

All across the world, the trend of sharing resources – curriculum, course materials, textbooks, software, and support services – is growing. This is a vast new frontier for educators and students alike. While many faculty embrace this trend, others fear that posting their work online is somehow giving away the store. After all, if students can learn what they want to know online, what is left for faculty to do? The truth is, of course, that there is plenty for faculty to do to help students learn how to select, analyze, critique and synthesize information from this vast new resource. There is also a continuing need for students to master the age-old skills of clear writing, problem-solving, and logical thinking.

But using open educational resources – and contributing to them – requires significant change in the culture of higher education. It requires thinking about content as a common resource that raises all boats when shared. It requires replacing our “not invented here” attitude with a “proudly borrowed from there” orientation. And it requires a new willingness to share and distribute the best of our own course content and software, and to participate in creating and maintaining open textbooks.

Clearly, MIT’s reputation for excellence has not suffered as a result of sharing its course materials. But one can well imagine that in MIT faculty meetings – as in those in our community and technical colleges – it took some time and conversation to change the way faculty think about their intellectual property and their contribution to learning.

Open educational resources make apparent the truth that our course content is not what distinguishes us from our peers. What faculty provide – and what students need and value -- is synthesis, planning, personal interaction, and guided dialogue among learners.



Where we are now

The first focus of information technology (IT) in the community and technical college system was to improve efficiency in college business practices, finances and human resources. In the late 1970s, the colleges established a shared IT organization whose purpose was to “establish service levels and provide for computing resources.” The statewide Center for Information Services (CIS) hosted basic administrative applications that all community and technical colleges use for administrative functions. These tools – and the precedent of statewide, shared IT infrastructure – are important assets that continue to serve the system well, but their promise has not been fully realized.

Originally, the primary customers of IT were administrators. While faculty and students benefited from technology-driven increases in administrative efficiency, they were secondary customers.

The advent of online learning in 1997 was a significant turning point in the direct use of technology to benefit students. That use has grown, but it has not been fully integrated with the administrative and student services applications that could – but don't yet – provide a seamless, customer-friendly environment for recruitment, registration, student advising, and financial aid management.

The culture of sharing teaching and learning resources across all 34 community and technical colleges has been nurtured by the growth of WAOL, which now manages 30% of online enrollments from the 34 colleges in the system. But the shift towards sharing is not yet fully realized. Only twelve of the 34 colleges currently use WAOL for all of their online, hybrid, and web-enhanced courses; and many online courses are still offered only to students enrolled in the college that offers them, even though those courses might be needed by students in other parts of the state. This go-it-alone approach is fostered by the requirement that colleges pay to use WAOL.

The lack of a single universally used statewide platform for all online courses means that students often have to learn multiple online course management systems, and use different logins and passwords for each of them. And even now, not all faculty have access to the course management, webinar and ePortfolio software and training they need to offer online, hybrid and web-enhanced courses.



Where we begin: lessons learned

The tension between system-wide vs. college-based technology applications is central to the limitations of the current system.

Originally, developing our own administrative software was a good solution, and CIS provided very successful services. But when the first generation of software and servers became obsolete, our system had a choice: It could purchase software and hosting services from outside vendors, or rewrite software in a newer computer language and expand our own hosting capacity. The system chose to rewrite and re-host our own software, which proved to be an overwhelming, labor-intensive, multi-year task. While that work was underway, individual colleges began to customize or invent more of their own solutions to meet emerging student and faculty needs. And while all this was going on, the IT world changed dramatically.

Today, the IT industry offers packaged, hosted systems for most of the administrative, student services, and teaching and learning needs of community and technical colleges. The total cost of ownership of these systems is often lower than the cost of system-developed and locally hosted solutions. These purchased systems, like most home computer software packages, are sold with automatic updates that continue to add functionality.

Both the community and technical college system's successes and its failures clearly point in the direction of migrating to centrally purchased software solutions and hosting services that provide all colleges with integrated teaching and learning, student services, and administrative systems.

Equitable access to these common, baseline resources will require providing these services to all colleges and all students without extra fees. These technological tools have moved from being "extras" to being a basic part of how colleges do business and how teaching and learning take place.

Colleges' natural desire to preserve their distinct identities will not be compromised by sharing common administrative tools, data analysis systems, teaching and learning tools and online student services. And whatever the colleges may lose in technological autonomy will be more than equaled by what students gain in seamless student services and improved access to the courses they need, when they need them.

The community and technical college system's experiences – along with extensive surveys, conversations and consultations with faculty, students and staff – have led us to seven simple principles that guide where we will go from here.





Guiding principles

1. Our IT solutions will be aligned and funded to meet the learning and service needs of all students and faculty at all 34 community and technical colleges.
2. We will use IT to help both colleges and the State Board make better use of data to drive decision-making and to improve both student success and administrative efficiency.
3. We will pursue a strategy of implementing system-wide software and hosting services that are cost effective, easily integrated, user-friendly, and constantly improving.
4. We will work to integrate our information technology efforts with our partners in public schools and four-year colleges and universities in order to create a seamless P-20 online learning environment for students and services that promote seamless transitions between institutions.
5. We will provide comprehensive professional development for faculty and staff in the use of evolving technologies. Faculty and staff will be involved in directing these efforts.
6. We will create an accountable, open, system-wide governance structure to guide IT strategy and investments.
7. We will cultivate the culture and practice of using and contributing to open educational resources.



Open textbooks are complete texts written by academics that can be used online for free and printed for a small cost. Open textbooks are already used at University of Puget Sound, Caltech, and in many other colleges and universities. Textbooks cost students close to \$1,000 a year. Textbook prices are rising faster than inflation, as publishers constantly release new versions, and “bundle” books with supplemental materials such as DVDs that students don’t want or need.

Goal and strategies

Most strategic plans have many goals; this plan has only one: to mobilize technology to increase student success.

The value of every investment in technology will be measured by its contribution to achieving this single, fundamental goal. This sounds perfectly obvious, of course, but given the history of technology use in community and technical colleges (and in most other education systems), it represents a new orientation, a new commitment, and the intentional creation of a new culture.

In this new culture, students and prospective students will be the center of the universe, and the entire system will be organized to meet their learning needs. To the greatest extent possible, online learning resources will be open, free, and widely shared. Information technology will be regarded – like electricity in college buildings – as a utility that students, faculty and staff use every day and take for granted.

This shift is consonant with the 2005 Washington Learns Committee report, which calls for a “world class, learner-focused, seamless” education system.

Clearly, creating such a system requires far more than changing the way we use technology. But technology can and must play a central role in the way we pursue that overarching policy direction because web-based technology has the potential to deliver the world to every learner; to help customize and personalize learning for every student, and to erase the seams between disparate parts of our education system.

We will support innovation wherever it occurs. Students, faculty, staff, and global partners are all sources of creative ideas for meeting local community needs and creating pioneering technology solutions. So although this plan clearly calls for centrally provided, system-wide solutions, we also aim to nurture an open, system-wide testing environment and support for local experimentation. We will always need a place to experiment and test new ideas to drive innovation. We will allow people to take risks and develop a culture of support for “idea entrepreneurs” no matter where they are in the system.



Strategy I: Create a single, system-wide suite of online teaching and learning tools that provides all Washington students with easy access to “anywhere, anytime” learning.

We cannot realize the full value of teaching and learning technologies with today’s patchwork of programs. A single, consistent, system-wide set of teaching and learning tools and resources is the first and most essential step toward the seamless, student-centric and customized education system we need.

Action 1: eLearning. Assemble a system-wide suite of online teaching and learning tools, support services, and a central 24/7 help desk through WashingtonOnline to accommodate online, hybrid, and web-enhanced classes in all colleges.

Action 2: Free Textbooks. Wherever possible, eliminate published textbooks in favor of free, open, online materials.

Action 3: Library Resources. Create a rich, easily accessible online library system that includes both global and local learning resources and tutorials on how to use them. Buy statewide licenses for online journals and library reference services rather than individual licenses at each college. Provide a common, robust integrated library operating system through which students can find and check out books and other library resources from libraries across the state and the world. This library system will support seamless sharing of book collections, document delivery and information literacy instruction across the community and technical colleges and with the university system.

Action 4: ePortfolio. Provide a statewide platform that allows students to create lifetime online portfolios of their academic work, from first essays to PhD theses and professional work products. Students’ digital portfolios will show what they know and what they’ve built, and can be used as an online resume to help them get a job.

Action 5: Online Tutoring. Collaborate with other higher education institutions to support the Northwest eTutoring Consortium, a statewide system for online tutoring.

Action 6: Technology Proficiency. Create an assessment that measures students’ proficiency in using online technology. Create easy-to-use tutorials and provide personal support to bring those unfamiliar with the online environment up to speed.

Action 7: Access. Investigate the feasibility of providing laptops to students who cannot afford them. Support Washington broadband initiatives to bring high-speed Internet access to every Washington student’s home.

Action 8: Universal Design. Ensure that all online, hybrid and enhanced courses and college web sites are fully accessible to students with disabilities. Provide faculty and staff professional development on universal design best practices.



Strategy II: Create a seamless P-20 system for personalized online student services including recruitment, retention, advising, course catalog, transfer, and financial aid management.

It is not enough to simply provide classes for those who enroll in our colleges. We need to reach out to those who have never considered attending a college – to the half million adults in our state who lack a high school diploma, to the working parents stuck in low-wage jobs, to immigrants who need both language and job skills, and to the middle and high school students who think college is beyond their reach.

We also need to increase retention and completion rates among those who do enroll. We lose far too many students before they reach their educational goals, and we must do more to dismantle the barriers to their success.

This will require changes that go beyond the ways we use technology, but technology offers powerful new tools for managing and personalizing the relationships between students and colleges. When anyone makes even the most tentative inquiry about a college, these new tools create a way for colleges to latch on to them, follow up with encouragement, information, and personal responses, and even to remind them periodically that the door to educational opportunity is open to them. Once students enroll, these systems alert college personnel when students are struggling, so they can offer help such as online advising. And if students leave, this system has the capacity to find out why, to encourage them to return, and to analyze data to pinpoint and seal the cracks in the educational pipeline.

Action 1: Online Advising. In partnership with the Higher Education Coordinating Board, provide statewide access to a single online advising and educational planning resource that is simple to use and appealing to people of all ages and education levels.

Action 2: Student Relationship Management. Purchase a single statewide package of student relationship management software that tailors responses to student inquiries and helps college personnel systematically respond via e-mail, phone or in person. Train staff to use this system, and analyze the results to track improved student success.

Action 3: Course Catalog. Create a statewide, online, searchable course catalog and quarterly schedule so students can plan their academic futures and colleges can make in-demand courses available.

Action 4: Electronic Deposit. Purchase software that allows electronic deposit of financial aid checks to students' bank accounts and allows student online tracking and management of financial aid and scholarships.

Strategy III: Create a system of lifelong learning and change management for faculty, staff and college leadership.

To fully execute Strategies I and II, community and technical college faculty, staff and leaders need time to build new skills and collaborate in new ways. They need to learn to use new teaching tools and pedagogies, to explore what it means to truly become student-centered, and to understand the many ways in which web-based technologies are changing our classrooms, our economy and our workplaces. We recognize that the cultural shift this plan calls for will take time, money, and sustained commitment.

Action 1: Professional Development. Strengthen and expand professional development programs and create the expectation that all faculty, staff and college leaders will continue to learn, collaborate, share knowledge and resources, and work together to make the best use of new technologies to improve student learning. Use new methods such as webinars, multi-disciplinary faculty learning communities, and social networking software to extend the reach of professional development.

Action 2: Time to Learn. Make learning to use new technologies an explicit part of job descriptions and duties, and organize time to include professional development and collaboration within regular work schedules.

Action 3: Learning Opportunities. Aggregate the colleges' purchasing power for professional development. Create a statewide fund to support faculty participation in cutting edge conferences (both in person and online) and ask participants to share what they learn with their colleagues with social networking and webinar software. Buy a statewide membership in leading national professional development consortia, and extend benefits to all faculty and staff. Advertise these opportunities to faculty and staff throughout the system.

Action 4: Course Redesign. Develop faculty capacity to continually improve the quality of online courses through collaborative, iterative design. Develop a peer review methodology for evaluating and redesigning existing and new online courses.

Action 5: IT Staff. Create a statewide structure that provides consistent opportunities for IT staff in both colleges and at the State Board to learn, collaborate, and share best practices as they make the transition from software developers to integration experts who tie together best-of-breed applications. Create a process to support career advancement and leadership development.

Action 6: Support Innovation. Establish and fund system-wide innovation and testing projects to pilot emerging technologies. Create a rapid response team that can take innovative ideas and implement them promptly. Partner with corporations and other higher education institutions to seek new ways to make learning more accessible to all Washington residents.



Strategy IV: Use data to drive continuous improvement in both student success and administrative efficiency.

A statewide, integrated set of administrative tools can help make administrative functions simpler, less expensive, and more focused on supporting student success. In addition, there is a need for greater capacity to collect and analyze data, and for more sophisticated use of data to drive improvements in student learning, administrative efficiency, and accountability to the Governor, the Legislature and the public.

Action 1: Administrative Software. Purchase system-wide, centrally supported administrative software that saves money, supports teaching and learning and online student services, and simplifies staff training. Explore using state or vendor hosted systems to minimize or eliminate the need for customized, locally developed software.

Action 2: Business Intelligence. Invest in business intelligence software to analyze data to track student recruitment, retention and success rates, and other metrics of efficiency and effectiveness. Invest in ongoing training to maximize use of data.

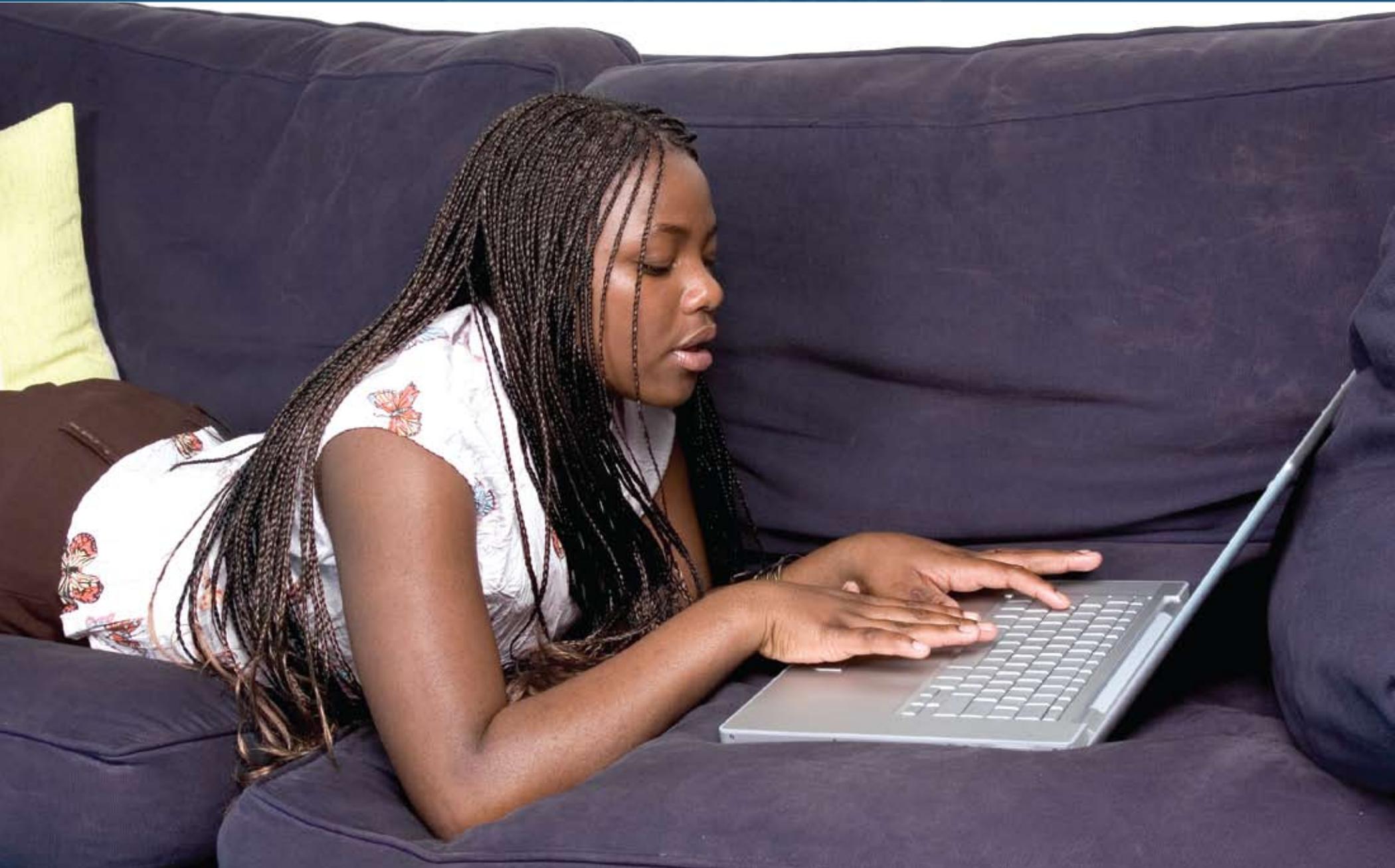
Strategy V: Treat information technology as a centrally funded, baseline service in the system budget.

IT is an integral part of the cost of education, and so it must become an integral part of the education system's budget. The investments we make in IT are key policy choices that express our state's values, aspirations, and priorities. These choices should be open to public discussion and legislative debate, so that the opportunities, costs, and savings are clearly understood.

Action 1: Line Item Funding. Make system IT investments a line item in the State Board's budget request to the legislature.

Action 2: Technical Infrastructure. Invest in college infrastructure such as rewiring to provide additional outlets for student laptops and mobile devices. Provide easy to use, 100% wireless coverage on all college campuses.

Action 3: P-20 Integration. Convene a P-20 technology group to explore whether common platforms, software and services could be shared by early learning providers, public schools, community and technical colleges, and four-year public and private colleges and universities in ways that improve system seamlessness and data analysis and save money.



The ultimate interdependence: global knowledge creation and exchange

Matthew Henson and Robert Peary first reached the North Pole in 1909. It was a heroic feat that required months of arduous travel and hardship. Today, anyone with Internet access can see the North Pole (and the South Pole, too) on a live webcam.

In fact, if Henson and Peary were traveling to the North Pole right now, it's likely that there would be live web coverage of their journey and open sharing of the new knowledge they created along the way. People in every country in the world would be tracking their progress in real time, swapping blog postings and commentary, and making connections between the expedition's discoveries and their own work. There would be a global storm of knowledge creation and sharing – and probably a flurry of pop culture production and art inspired by their ordeal and their ultimate triumph.

That is exactly what is happening now, thousands of times over, on topics ranging from photoelectric engineering to plant genetics.

Today there is a global intellectual commons online. We can be a part of it – and teach the skills needed to participate in it – or we can retreat to the frozen past of Henson and Peary, when time and distance were enormous barriers that required heroic effort to overcome.

The value of information technology investments is, very simply, that they allow us to be active participants in the 21st century. They give our students and faculty access to the global intellectual commons, to the interactive world of knowledge creation and sharing, and to the vast wealth of online human creativity and connection.

The prosaic, practical return on our investment in information technology will be better jobs for our graduates and a stronger economy for our state. But the real value of information technology will be measured on a larger map – the map of the interdependent world today's students and faculty will learn to navigate, and will help to chart.





Technology Task Force Members

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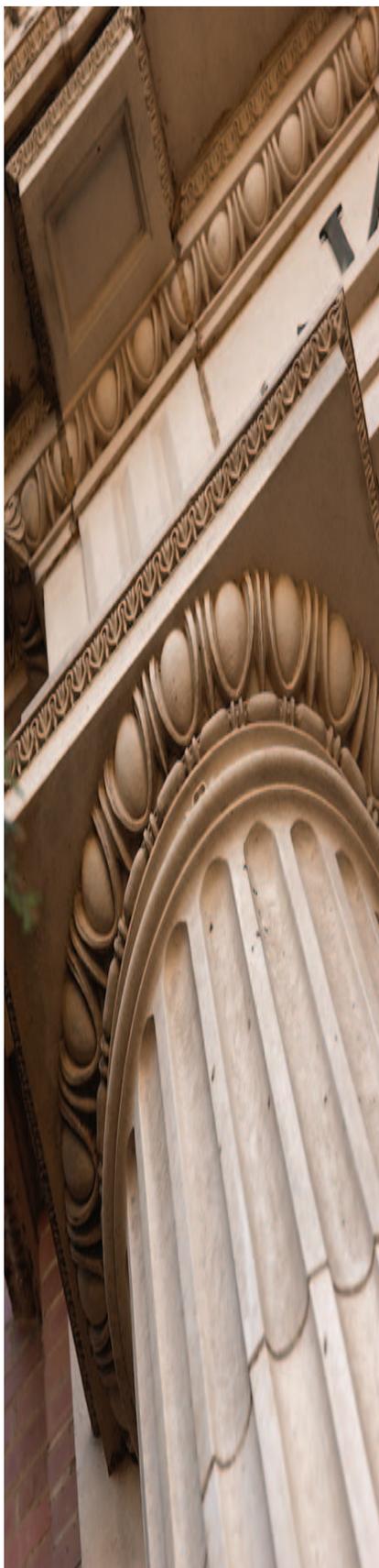


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Attachment C: Evaluation of Workplace-Based Education Programs



EVALUATION OF WORKPLACE-BASED EDUCATION PROGRAMS

REPORT 08-067

January 2009

Prepared for

Workforce Training and Education Coordinating Board
State of Washington
Olympia, Washington

Submitted by

Rose Krebill-Prather, Ph.D.
On behalf of SESRC

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Work-Based Learning Programs

**RESEARCH REPORT
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Workforce Training and Education Coordinating Board
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Olympia, Washington

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- Title:** **Evaluating Workplace-Based Educational Programs**
- Abstract:** The WTECB collaborated with the Social and Economic Sciences Research Center (SESRC) at Washington State University to conduct the exploratory assessment to identify and evaluate current national private employer workplace-based educational programs with electronically distributed learning components provided by public and private colleges and universities.
- Method:** In this exploratory assessment, the SESRC identified and reviewed relevant literature and searched for programs that are connected to a public or private college or university and have electronically distributed components. The SESRC contacted leads for information on workplace-based education and training programs that fit the criteria of interest. The WTECB provided coordination, consultation, and liaison services in order to facilitate the exploratory assessment. The SESRC focused efforts on locating programs that fit the study criteria. Then through telephone interviews and email exchanges, collected information about various programs from perspective of program directors. Program contacts were asked about their impressions of what seems to be working well and what contributes to success of workplace-based programs. The timeframe for this exploratory evaluation was October through November 2008.
- Results:** The SESRC summarized of results from the literature search and interviews with project contacts. The SESRC developed a set of key strategies for workplace-based program success that can be used for making recommendations.
- Contract with:** Workforce Training and Education Coordinating Board
State of Washington
Olympia, Washington
- Principal Investigator:** Rose Krebill-Prather, Ph.D.
- Timeframe:** October through December 2008

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Parameters for Program Design

Bring postsecondary education opportunities to the low wage/lower skilled workers in the workplace.

Develop programs with the college/university connection.

Use electronic or digital learning components in the delivery of workplace-based education programs.

Key Strategies for Workplace-Based Education Program Success

- Strengthen the community college position to reach out to the low wage/lower skilled workers.
- Integrate remediation, basic skills development and ESL into the postsecondary curriculum.
- Obtain “buy-in” from the top down at both the college and the employer company or organization.
- Build a solid partnership between the college and the employer company or organization.
- Develop workplace-based education programs with a work-based learning approach.
- Involve college faculty members in the design and implementation of the workplace-based education programs.
- Incorporate on-site supervisors or “faculty extenders” as instructors in the workplace.
- Provide academic mentors for low wage/lower skilled workers
- Connect low wage/lower skilled workers to community organizations, social services, and public health resources.
- Provide an incentive hierarchy for the workers progressing through the program.
- Use E-Learning and other electronic components to enhance or facilitate the learning process for low wage/low skilled worker education programs.
- Allow ample time at the outset for planning and design phase of workplace-based education programs
 - Accommodate unique aspects of various work settings in program design.

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INTRODUCTION AND BACKGROUND

Purpose of Exploratory Assessment

Washington State Legislators through the Washington Workforce Training and Education Coordinating Board (WTECB) have an interest in learning more about the potential for workplace-based training and education opportunities for low wage/lower skilled workers in the state. Through an **exploratory assessment** the WTECB wanted to learn more about promising practices and outcomes of workplace-based educational programs with a college or university connection that are currently in place in the United States and to then provide useful information to state legislators.

The WTECB collaborated with the Social and Economic Sciences Research Center (SESRC) at Washington State University to conduct the exploratory assessment. Specifically, the aim of the assessment was *to identify and evaluate current national private employer workplace-based educational programs with electronically distributed learning components provided by public and private colleges and universities.*

Key questions addressed in this exploratory assessment are:

- What is the basic design or structure of workplace-based programs with a public / private college or university connection?
- Who is served by these programs?
- What role do college and the college faculty have in the design and implementation of the programs?
- What is the relationship between colleges and employers are using these programs?

- Are these programs in the workplace offered for college credit and is there a demand for degree programs that are offered for credit?
- What electronic components are most often used in the workplace-based programs?
- How are these programs funded?
- What are the main benefits to employees who complete the program?
- What are the main benefits to employers who have these programs in their workplace?

In this exploratory assessment, the SESRC identified and reviewed relevant literature and searched for programs that are connected to a public or private college or university and have electronically distributed components (including web based/online and non-web based such as DVD, software, etc.). The SESRC contacted leads for information on workplace-based education and training programs that fit the criteria of interest. The WTECB provided coordination, consultation, and liaison services in order to facilitate the exploratory assessment. The timeframe for this exploratory evaluation was October through November 2008.

Parameters for Program Design

Bring postsecondary education opportunities to the low wage/lower skilled workers into the workplace.

Bringing the opportunities for education to the workplace is desirable and even essential for programs designed for low wage/lower skilled workers, rather than requiring workers to come to the college campus or some other centralized location. Postsecondary education opportunities are made accessible to workers who would otherwise not have those opportunities.

While workplace-based learning brings the coursework to the worker in the workplace, what is even more desirable is a model for **work-based learning** which incorporates the course delivery and assessment into what workers are doing on the job (Rebecca Starr, Jobs to Careers, 2008). By using this approach, programs capitalize on the *experiential knowledge the workers* have as well as address other aspects of adult learning such as relevancy, practicality. *Work-based learning* thereby becomes more than just bringing the coursework to the workplace. The mere process of incorporating the coursework delivery and assessment into the job will improve educational outcomes. For example, using work situations and cases that are drawn from circumstances the worker face in their everyday jobs speak louder than hypothetical examples or exercises that are used in textbooks.

Under the **work-based learning model**, the employer becomes a learning organization; learning is a partnership shared between the employee and the employer. Another aspect of this learning model is that the college and the employer share control of the curriculum, and teaching is a joint effort between the college and the employer. In this model the learning process is embedded in the work. (Begay, et al. 2008).

Educating working adults is ***more than just allowing workers to earn degrees in the workplace from “existing programs.”*** As discussed, workers often have developed skills “on the job” that fulfill specific learning objectives within the course requirements. The student learning objectives defined in a course are translated into job competencies. Overall, the work-based programs are paced differently and eliminate redundancies in what workers can and may have already learned on the job versus what is in the “textbook” or other more traditional course material. Strategies need to be identified for translating and equating specific learning objectives with specific industry competencies (this is already occurring in the Jobs to Careers Initiative which will be discussed later).

Workplace-based education (including work-based learning models) reduces employer costs associated with “sending” employees out for educational pursuits and costs associated with high employee turnover. Basing the program in the workplace may also reduce costs for colleges by reducing overhead costs at the college or university. Instead these programs capitalize on space and other resources that already exist in the workplace. Furthermore, by providing education in the workplace the intention is to create a path of economic mobility for low-wage/lower skilled workers, which in turn should lead to higher retention and increased productivity for employers.

Workplace-based training and education is difficult to do, but it has to be part of the portfolio for higher education in the future if we want to keep college accessible to the public. Even at the community college, the growing cost of tuition and the high levels of state funding required, is increasingly making traditional modes of college inaccessible” (*Michael Tagawa, Leeward Community College, 2008*).

While the ideal is to develop “work-based learning” programs, this report casts the net a little more broadly so that key aspects of other types of workplace-based education will be reviewed and evaluated.

Develop programs with the college/university connection.

There are numerous organizations, agencies, and companies that offer workforce training options. Many of these vendors aim to address skill development in many areas and/or on demand. However, the Washington State Workforce Training and Education Coordinating Board (WTECB) is focusing its effort on education and training programs that have a connection to public or private colleges or universities. Because the specialized skills needed for many of high demand jobs are at a postsecondary level, it follows that colleges and universities would be integrally connected to the programs. Furthermore, some

of the skill development needed is highly regulated (e.g. many of the jobs in the health sector) and already mechanisms in place that oversee the degree requirements at postsecondary institutions. Furthermore, colleges and universities are an existing structure or network that facilitates the implementation of program initiatives or recommendations and directives at the state level. If states hope to invest in work-based learning programs, there is an existing network within which to work. Furthermore, publically funded community colleges and universities are accountable to state.

College/university involvement in workforce education in these high demand areas means that the low wage/lower skilled workers in the program can acquire credentials and degrees that help them advancement along a career path. For example, by completing an associate's degree, a person can advance in a four year degree program. By creating opportunities for advancement, these programs promote a more educated population which have positive implications for the overall economy. The degrees earned are also portable so that workers have the flexibility of "taking" the degree with them when they are finished; it is not dependent on staying in their current location and/or place of work (even though the hope is that employers will retain workers who have completed these programs). A connection to a college or university also gives the education or training programs greater credibility. "Companies use the community college because of cost, quality of instructors and quality of programs" (Yeager, 2006).

Electronic or digital learning components are useful in the delivery of workplace-based education programs.

The assumption is that electronic learning, or "e-learning" and digital components, are the way of the "future" for the working adult training and education programs.

E-learning is a groundbreaking paradigm shift in the field of learning that provides high-speed access to knowledge and information. (PrimeLearning, Inc. 2001)

Specifically, e-learning can be defined as the “delivery of a learning, training or education program by electronic means and involves the use of a computer or other electronic devices in some way to provide training, educational or learning material” (Stockley, 2003). “E-learning” makes use of computer network technology, primarily over an intranet or through the Internet, to deliver information and instruction to individuals (Welsh, et al., 2003). It is “Internet-enabled learning” that uses network technologies to create, foster, deliver, and facilitate learning, anytime and anywhere (The Ageless Learner, 2008). Other types of electronic learning components do not rely on Internet access.

Some examples of non-web based electronic learning are:

- DVD
- CD-ROMs
- Software applications
- Software based simulators

Some examples of web-based electronic/digital learning components are:

- Streaming audio or video content or video conferencing?
- Text/chat for real-time student feedback/questions
- Open source books/courses
- Shared instructional design (shared course templates)
- Content repositories (shared learning modules)
- Blogging (alternative communication channels for students)
- Wikis (collaborative teams working on projects)
- ePortfolios (portable transcripts)
- Webinars (reusable lectures/fishbowl seminars)
- Blackboard.com (online means for course management, content authoring, collaborative discussions, virtual classrooms, as well as testing and grading).

Some of the advantages of e-learning are the flexibility in terms of schedule and timing, the “just in time” aspect or the ability to provide up-to-date information, the continuity in delivery, the broad reach or scalability, and cost savings once the initial investment is made (Chang, 2003; Kapp and McKeague, 2003; Huffaker, 2004). In the work setting, employees often already have access to the IT infrastructure that would support the learning. E-learning allows distance learning (no travel needed, no time restrictions) and allows learning at one’s own pace (Kapp and McKeague, 2003). Another advantage is that online learning can take advantage of an expert’s limited time by capturing her or her knowledge in an e-learning module. Experts can present the instruction and provide a high level of instructional credibility (Kapp and McKeague, 2003). The use of e-learning can also improve tracking of student progress; their activities and mastery of material. Tracking and storing information about individual students is automated which is particularly useful when training is required for compliance (Welsh et al., 2003). The initial costs required for developing a highly interactive e-learning courses or other electronic formats can be high, so savings are not automatic (Welsh et al., 2003).

The flexibility in scheduling and providing greater access at a lower cost are two of the biggest reasons for using electronic learning components with workers in their workplace.

Electronic components are a more cost effective way to deliver training to employees. Many expenses, booking training facilities, travel costs for employees or trainers, plus employee time away from the job are all greatly reduced (Strother, 2002).

Most e-learning is asynchronous, or available to employees at any time of the day, potentially from any location (e.g. slides on the web, learning simulations). Synchronous e-learning involves learning sessions that are live and requires all learner to be in front of their computers at the same time (e.g. webinars, chat

sessions) (Huffaker, 2004; Welsh et al., 2003). Synchronous e-learning encourages the social side of learning and creates less isolated learning (Huffaker, 2004). Interactive Learning (IL)—a particular type of e-learning. It offers both face-to-face and online communications, thus providing more opportunities and options for communications between learners and with instructors (Chang, 2003).

Many companies use a mix of delivery options for their classes. Some have found that both basic information provision through electronic means as well as complex simulations done electronically are useful. This suggests there may be roles for both simple and complex asynchronous learning experiences in organizations (Welsh et al., 2003). Synchronous e-learning involves real time “chat” sessions where employees log on at the same time to discuss training topics. Or there may be a training sessions where learners from diverse locations log into the training at a set time and an instructor facilitates a discussion while showing slides or writing on a “whiteboard” that appears on the computer screens of the learners. During these sessions learners can ask questions, sometimes verbally, of the instructors.

While many of our organizations began with less sophisticated e-learning applications, they quickly learned that employees typically want more interactivity than that provided by slides on the Web. Additionally, as technology limitations decrease, more complex training can be offered. (Welsh, et al., 2003).

Blended learning uses some combination of technology and classroom-based learning and is becoming a popular form of training.

In today's environment, it is not enough to merely have an on-line library of compliance training programs, nor is it enough to have only instructor-led compliance training. Smart organizations understand that one type of training is not the answer to all the training needs they face. (Kapp and McKeague, 2003).

Blended learning has many different forms with various mixes of asynchronous, synchronous, and classroom learning (Welsh et al., 2003). An advantage of blended learning is a reduction in information overload. E-learning can more effectively manage the amount of information that employees need to learn. The growth in the amount of information that is being conveyed can often lead to information overload during training, resulting in ineffective training when learners cannot retain all of the information presented. By using a blended approach, learners can learn some of it asynchronously—at another time/at their own pace. This is thought to improve retention (Welsh et al., 2003).

Ultimately, the goal for investigating workplace-based programs with a college or university connection is to better understand their potential for **workforce career advancement**. Therefore the focus of this study is on programs with a career pathway, or pathway to a credential in a particular career or an academic degree, instead of merely programs that train workers to boost specific skills. With workforce career advancement, the WTECB hopes to address the larger economic and societal concerns for maintaining and strengthening a globally competitive workforce in the United States.

EVALUATION METHODOLOGY

The original objective for this exploratory evaluation was to interview and collect data from companies and organizations that have implemented education programs in the work place that have a connection to a college or university. By focusing on companies and organization, the SESRC planned to review program “outcomes” by quantifying the numbers and demographics of those participating in programs, measuring observable changes/improvements in the workplace for employees as well as employers because of participating in these types of programs. The SESRC made numerous calls and sent emails to leads in order to locate and develop a list of companies with workplace-based programs. However, this approach turned out to be unsuccessful, because the bigger challenge was locating programs that fit the study criteria.

After our initial effort to develop a list of companies to survey, the SESRC focused our efforts to locating programs that fit the study criteria. Then through telephone interview and email exchanges, we learned more about the profiles of various programs from perspective of program directors. We asked these contacts about their impressions of what seems to be working well and what contributes to success of workplace-based programs.

FINDINGS

Prevalence of Workplace-Based Education Programs

Many education or training programs that we contacted did not fit the specific criteria for our study. Some programs were not employer “sponsored” or workplace-based efforts; sometimes the programs were online or campus based courses at a community college that anyone can take. Other programs were not a career advancement effort, but rather training on a variety of very specific skill

areas (e.g. using excel, or other software packages). Others we contacted turned out to be programs not directly linked to a college or university.

Some programs target low wage/lower skilled workers but do not actually deliver or assess competencies in the workplace. Throughout our data collection phase, we found that the various “programs of interest” were not truly based in the workplace and therefore did not fit the study criteria. For example, we contacted the project director of the Skills in Manufacturing and Related Technologies (SMART) Initiative in which Connecticut Community Colleges were awarded a \$2.19 million grant from the US Department of Labor, the grant funding will be used to “build capacity of the Connecticut Community College System to develop and provide students with the educational programs and skills needed to enter and advance in manufacturing and related technology-focused careers” (<http://www.mcc.comnet.edu/>). In talking with the director of the SMART Initiative, we determined that while their efforts are directed at low wage/lower skilled workers and in building skill sets for high demand jobs in manufacturing, the program is not based in the workplace.

The Bellingham Technical College has a several programs that start with campus based classes and labs and then moves students into the workplace for an internship as they complete their degree requirements. Specifically their programs for Radiologic Technology, Automotive Technology and Diesel Equipment Technology are structured with a strong face to face component in the program through the internships. During the internship, the college faculty make regular site visits in the workplace to monitor activities. In the workplace, there are preceptors that are responsible for mentoring student in their work responsibilities.

Through the SESRC’s effort to locate and contact programs, it appears that workplace-based education programs that actually fit the study criteria are not

very prevalent. Clearly there is interest out there for workplace-based education programs for low wage/lower skilled workers with a connection to a college or university. People recognize the need for preparing workers in specific high demand jobs. It is less clear whether there are very many programs that use this approach thus far, specifically ones that *aim to create career pathways for low wage/lower skilled workers*. In consulting with one of our contacts in customized training programs, there may be more “talk” or hype and less of these types of programs actually happening thus far.

Several reports that were reviewed describe the challenges and what is needed for these types of programs. In one study that we reviewed pertaining to immigrant workforce in the manufacturing sector, the researchers found:

In spite of the compelling need, few partnerships strategically connect working Hispanic immigrants with college level opportunities. . . . Far fewer programs are making the connections that link working immigrants with the English skills, the job skills, and the academic credentials needed to compete in today’s labor market. (Gershwin, 2008).

Despite the promise of a career pathways approach, few community colleges have actually implemented programs according to its principles. Often the programs are small scale with funding from grants or other sources of limited duration. (Jenkins, 2003).

So far, no best practices have yet been established for workplace-based programs with a college/university connection. Most of the programs of this type that we contacted are new or are still in their formative stage. Nonetheless, through the data collection phase, the SESRC was able to begin to get a picture of the potential for work-based learning programs by interviewing directors of some key programs that are being implemented, as well as in talking with other contacts or programs that are similar, but may be defined by slightly different parameters.

College and University Context for Working Adult Learners

One of the missions of community colleges and four year educational institutions is to prepare people for the workforce. The community colleges in particular strive to provide greater accessibility for incoming students and have already laid the groundwork for working specifically with working adults. The mission of community colleges also includes addressing workforce needs of employers. To that end, community colleges have a strong record for building and maintaining strong partnerships with employers. It is less clear whether community colleges as well as four year institutions are adequately prepared to meet the specific needs of low wage/lower skill workers.

Many customized contract training programs and continuing education classes are being offered in the workplace. Most of the time these opportunities are noncredit options, but sometimes credit is offered. Academic courses for credit are being offered through distance degree and online education programs.

Customized Contract Training Programs and Distance Degree Education

In this exploratory assessment, the SESRC “interviewed” several contacts involved with customized workforce training in the workplace conducted by colleges, often by community colleges. These customized trainings do not represent career or educational pathways but instead represent very specific training in specialized areas. Employers contract with colleges to provide worker training in very specific, targeted areas. From these contacts, the SESRC was able to get a perspective of how colleges currently work with companies and organizations and how that may be similar in some ways, yet different from the relationship that is established between employers and the college for workplace-based education programs—and more specifically those programs with the intention of providing career advancement for low wage/lower skilled workers.

The SESRC was also able to gain insights about continuing and distance education options offered through colleges and universities as being distinct from the workplace-based programs that are the focus of this study.

Most colleges and universities offer some type of continuing education (CE) and/or customized contract training programs that are often “housed” within “Business and Industry Services,” “Distance or Professional Education,” or “Workforce Development” or within a Continuing Education Program. CE courses are offered to help various professional groups fulfill required number of CE units each year. These courses are offered to individuals who need to fulfill their professional requirements.

In addition to the CE courses, a variety of more applied training programs are also offered through colleges and universities. The contract training programs can be highly customized to meet specific training needs employers have for their employees and in other cases these training programs may be offered periodically (e.g. How to start your own business). While some of the classes offered may count toward a degree, most often these training programs are non-credited. Sometimes the training program may count towards continuing education requirements in specific fields (e.g. teaching profession) or may lead toward completion of various certificate programs (e.g. nursing profession).

Often times the customized training programs are offered in the workplace or they can be offered in a centralized location, depending on the client’s preference. Trainings can be in a variety of areas and may tend to focus on more applied skills such as use of various software packages, supervisor training, communication skills, customer service, conflict management, accounting, electronics, welding, use of specialized equipment, and safety training, etc. In some cases employers may need help or expertise in converting their current training programs into online or computer based programs.

These contract workforce programs offered through the colleges and universities are likely to be self-sustaining entities within the college or university structure (not FTE bearing). The employer is the client who purchases the training from the college or university. Through a contract arrangement, the fees cover the cost of designing and implementing the programs and the applicable college/university overhead.

Most often, the employers do not want to pay for college credits for their employees, but they desire the college or university “backing” to the training being offered to their employees. The college/university involvement contributes to the credentials or prestige of the trainings offered to the employees. Furthermore, the college/university has the responsibility of locating the instructors who have the expertise in areas needed, thus relieving the employer from having to identify and locate that expertise. Also, the college/university handles the accounting or logistics of implementing the course which also frees up the employer from those duties.

Contract training programs have a marketing side in order to sustain themselves. In order to market their capabilities to organizations and companies, these programs make a point of getting out in the communities and developing an understanding of current issues in the business and industry. This awareness helps them to be responsive to the employer needs.

The main purpose for customized contract training is to help boost skills in specific areas within the workforce, often in the more applied, practical areas. Companies benefit through the increased skill sets and increased productivity of their employees, which in turn can boost overall morale within a company. Individually, employees may benefit from the training program by choosing to further their career by enrolling in additional courses. However, the aim of these

customized training programs is to build skill sets, not develop “career pathways” or integrate into a curriculum towards a particular degree. Employers are generally not interested in financing the career/academic advancement of their employees.

How well would the customized contract training model work for implementing workplace-based programs targeting low wage/lower skilled workers? Boosting skills sets and offering training within the workplace are certainly key aspects of helping low wage/lower skilled workers to advance their careers. Furthermore, the customized contract training programs have a strong record of getting out and developing a working relationship with employers in order to work out the details of specific programs. However the customized contract trainings are not usually part of a curriculum that relates to specific degree programs. It is that academic piece that will ultimately create the career pathway for the low wage/lower skilled workers. *So while aspects of the customized contract training model mesh well with what is needed, one of the key elements--to provide a means for academic advancement of low wage/low skill workers—is missing.* Furthermore, customized contract training will not work well in many health care occupations, especially those in highest demand by employers because the government regulates the education required for clinical jobs and in most cases ties the training to recognized academic credentials or degrees.

Customized contract training programs have done well and continue to do well at establishing and maintaining strong partnerships with employers and in doing so provide a useful backdrop to the kinds of partnerships needed in workplace-based education programs.

Distance degree programs and Online Course Offerings. In an effort to broaden their geographic reach many community colleges and universities offer

distance degree programs and courses online. The distance degree programs are a way to offer the same degree programs and courses that are based at the campus to students who otherwise cannot come to the campus to learn, usually because of economic and/or geographic limitations. In general, distance education means there is a separation of teacher and learner in space and/or time, more control of learning by the student rather than the distant instructor, and the noncontiguous communication between student and teacher, mediated by print or some form of technology (Sherry, 1996). The distance degree approach is useful because it provides opportunities for students to link into existing degree programs from a distance. In order to accomplish this, the existing degree program curriculum is adapted to an electronic learning environment rather than relying on face to face, classroom interactions.

While providing academic opportunities that are more accessible across space and time is certainly one of the key aspects of helping low wage/lower skilled workers to advance their careers, how well would the distance degree model work for low wage/lower skilled workers? Distance degree programs tend to reach students who are similar to those who enroll in the traditional campus-based courses in terms of academic demographics. On the other hand, low wage/lower skilled workers are dissimilar to the traditional students enrolled at colleges and universities and represent a population previously not considered within the reach of college or university programs. Therefore, the distance degree model may be less likely to fit the educational needs of low wage/lower skilled workers.

Learning in the Workplace versus Work-Based Learning

The challenge will be to create programs that can integrate the strengths of the customized contract training programs in terms of their successful partnerships with employers and the academic aspects of the distance degree programs that

allow for coursework away from the main campus. ***A work-based education program has an academic track where aspects of the curriculum are adapted for delivery and assessment in the workplace and builds from a working relationship established between the employer and the postsecondary institution. Programs should also be adapted to the needs of adult learners.***

Adult learning must be embedded in real opportunities to demonstrate knowledge and skill at work, to climb the ladder of learning, and to reap the rewards for doing both. (D'Amico, 2003).

The ***Jobs to Careers Initiative*** is one national initiative that focuses specifically on the development of work-based learning programs with a connection to a college or university for frontline health care workers. This is a national program funded by the Robert Wood Johnson Foundation in collaboration with the Hitachi Foundation and the United States Department of Labor, Employment and Training Administration and with technical assistance provided by Jobs for the Future. The ***Jobs to Careers Initiative*** seeks to advance and reward the skill and career development of the low-wage incumbent workers who provide care and services on the front lines of our health and health care systems. The Jobs to Careers Initiative supports partnerships of employers, educational institutions, and other organizations working to expand and redesign systems to create lasting improvement in the way that institutions train and advance their frontline workers and to test new models of education and training that incorporate work-based learning. The initiative has funded projects at various sites set around the country with the goal of providing skill and career development for low-wage incumbents who are front line health care workers (Jobs to Careers website, 2008). Frontline workers are the ones with the most contact with patients, yet these workers represent the most 'at risk' component of health employment and encompasses occupations with the least amount of visibility" (Jobs to Careers website, 2008). These workers have lower median wages with little to no job

advancement opportunities once they have entered into the workforce. They also have less access to benefits and generally have high turnover rates.

During the data collection phase of this study, the SESRC interviewed the Deputy Director of the Jobs to Careers Initiative, Rebecca Starr; the Program Director for the Health Work Force Institute which is overseeing several of the Jobs to Careers sites, Ed Phippen; and project contacts at two of the Jobs to Career sites. Through these interviews, valuable information was obtained about what is happening out in the field and for developing an initial “picture” of what are likely to be the best practices for these programs. It is important to recognize that the Jobs to Careers Initiative is fairly new, still in its formative stage.

Recognizing the role employment plays in the development of work-based learning programs is critical.

The workplace is the new gateway to basic skills and higher education. Our policies should recognize this. (Gershwin, 2008).

Most low-skill workers will need some job-connected training to advance to jobs offering family-supporting wages and opportunities for advancement. . . . Career Pathways or “career ladders” are an effort to help students overcome barriers to success in college and careers, by building connections between remedial, occupational and academic transfer programs to create an integrated series of “stepping stones” by which students can advance over time to successively higher levels of education and employment. (Jenkins, 2003).

The Effectiveness of E-Learning and Other Electronic Components

Many have raised the question, does electronic learning work better than learning through the traditional classroom setting? Literature suggests that “electronic learning” can be just as effective as traditional class-based learning (Moyer, 2008). Studies have shown that even with no instructor and no face to

face interaction, there are no significant differences in the amount of content learned. While some studies show greater benefit in favor of face to face learning, other studies demonstrate the benefits of e-learning in general because there may be increased time available per task, higher levels of motivation for learning, and reduced test anxiety for many learners. One study found that e-learning programs had positive outcomes based on student preference, improved grades, higher cost effectiveness and higher percentage of homework completion (Strother, 2002). Research is still needed to confirm that learners are actually acquiring and using the skills that are being taught online, and that e-learning is the best way to achieve the outcomes in a corporate environment. To date, much of the support for this view is qualitative feedback from corporations (Strother, 2002).

In one study conducted in the Netherlands, the effect of e-learning on knowledge on mental health issues was compared to lecture-based learning in a continuing medical education (CME) program for occupational physicians (OPs). The study was a randomized controlled trial where OP's were randomly assigned to four different groups, two groups which received the lecture-based teaching and the other two groups received individual e-learning in a classroom. All four groups the same course content. "The results of this study show that for OPs, e-learning is just as effective in enhancing knowledge as lecture-based learning" (Hugenholtz, et al., 2008). In this study the OPs lack of computer skills were identified as a major barrier preventing their use of computer-based learning methods, rather than their lack of preference for new technologies.

In another survey of companies in Singapore, UK, and Australia, respondents expressed the need for a centralized administration of the electronic learning program rather than decentralized or fragmented across departments (Chang, 2003). Several other factors for effectiveness were also identified by these companies as well as other factors that made e-learning ineffective.

Factors influencing effective e-learning implementations from the Industrialist perspective:

- Systems that speed up and simplify processes
- Systems that assist the organization to reach its targets
- Strong support and cooperation between colleagues
- Supportive and flexible organization cultures and management
- Cost-effectiveness (saves training costs and/or ongoing operational costs)

Factors influencing ineffective e-learning implementations from the Industrialist perspective:

- Systems that are too difficult to set up and use
- Systems that add extra unnecessary work to the employees
- Not user friendly
- Disagreement or conflicts with teams or management
- Abusing/misusing e-learning system (unrelated work/activities/games).

(Chang, 2003)

The success of using e-learning as well as other electronic components depends on significant planning and effort. The upfront costs of electronic learning components can require considerable investment in both information technology and staff. There are costs to design and convert or transfer courses over to electronic means as well as costs for the hardware and software costs that allow users to access the course material.

Successful e-learning requires significant effort and planning. If sufficient attention is not given to implementation, e-learning will not be successful. In fact, while many companies have experienced success with their e-learning efforts, others have aborted their efforts (Welsh, et al. 2003)

One drawback of e-learning is the lack of interaction among course participants and a lack of peer-to-peer networking. In some contexts, the interaction within the cohort of students is critical to the success of the program. In these situations electronic learning may be less attractive to learners and potentially

less useful. Furthermore, the use of static and non-interactive e-learning may create a mindset that electronically-encoded information is training.

To what extent does empirical research support the use of e-learning, or technology-delivered training? In Welch et al.'s review of the literature (2003) they found that people can and do learn from technology-delivered instruction based results of various studies of manufacturing employees, US Maritime Officers and other military personnel, truck and bus drivers, and teachers. Other research shows that learning style and gender do not make a difference in the effectiveness of electronic learning. The literature available suggests that technology-delivered instruction can be slightly more effective than the classroom setting.

Meta-analyses of the literature support the conclusion that technology is, on average, slightly more effective than the classroom. (Welsh, et al. 2003).

Some research shows that in those cases where learners have lower computer skills or have anxiety regarding computers, they may not learn as well when using technology. Also, there may be differences in effectiveness depending on the level of the course.

E-learning may be most useful when the training emphasizes cognitive learning outcomes, particularly less complex knowledge and intellectual skill. . . . However, there is concern that more advanced classes or those that require soft skills (e.g., conducting a feedback session) may not be as effective with e-learning. (Welsh, et al. 2003).

Other studies have mixed results and still others found that e-learning was not that effective. More research is needed to increase understanding as to when one technology is more appropriate over others, research to examine potential individual differences, instructional design, and situational moderators of effective e-learning outcomes.

Case Studies of Workplace-Based Education Programs

In this next section, we present examples of workplace-based education programs that are currently being implemented. In some of the examples, the profiles include detailed information and in other cases, only partial or general information was obtained. Overall, the profiles give a sampling of what is out there “in the field.” Several of the main profiles are from the Jobs to Careers Initiative, the effort that actually “models” the **work-based learning** education programs. The other examples in this section are for programs that incorporate aspects of workplace-based education but are not exactly **work-based learning**.

Stanley Street Treatment and Resources (SSTAR)
College Connection: Bristol Community College
Jobs to Careers Initiative Site
Fall River, MA; North Kingston, RI; Cranston, RI

Certification in Addictions Counseling (CAC)

SSTAR is a non-profit health care and social service agency that provides a wide range of mental health and substance abuse treatment services to people throughout the communities of Southeastern Massachusetts and Rhode Island.

Traditional staff training approaches were not that effective in creating changes in performance (either employee or organizational). SSTAR is required to have inpatient counselors have a CAC, however, there is a shortage of clinicians which is causing waits for services and lost revenue. Meanwhile, front Line workers are under-utilized yet may be very committed to staying with the company. Frontline workers need increased wages and need additional credentials

The CAC training involved onsite classes led by faculty of the Trundy Institute for Addictions Counseling and partial release time and flexible work schedules for workers. The learning objectives derived from skill requirements. Learning teams and journaling techniques were used as well as developmental relationships involving a coach, peers, and supervisors.

As a result of the program, employees who participated had increased incomes (as much as 12%), promotions to different positions, and received 15 academic credits through Bristol Community College. Employees also changed their views of themselves. They saw themselves as successful learners and they acknowledged they now had career goals (and some have even taken steps towards achieving those goals).

There is also a course on group therapy that was jointly developed and taught by the employer site and Bristol Community College.

Owensboro Medical Health System

College Connection: Owensboro Community College

Jobs to Careers Site

Owensboro, Kentucky

Associates Degree for Registered Nurses

The education program offered is a hybrid course that uses both web enhanced features and non web based learning. In-class lectures are used as well as DVDs, software applications, software based simulators, and a simulation mannequin. The web enhanced features include: streaming audio or video content or video conferencing; text/chat for real-time student feedback and questions; webinars; and virtual clinical.

The community college was involved with developing the materials to use in program, delivering instruction for the training program, and overseeing the administration of program. Participants receive academic credit through Owensboro Community College.

Because of the high amount of regulation pertaining to Associates Degree Nursing programs, it was difficult to adapt the curriculum delivery and assessment into workplace-based learning so in some respects was “unsuccessful” in becoming truly work-based learning.

One of the interesting benefits of the program is that the on-site supervisors who are teaching and working with those enrolled in the program have actually moved up the career ladder as well. They have become adjunct faculty at the community college which has given them more prestige and status.

Waianae Coast Comprehensive Health Center
College Connection: Leeward Community College
Jobs to Careers Site
Pearl City, HI

Medical Receptionist Certificate Program

Leeward Community College is currently developing a pilot workplace-based learning program for frontline medical office workers as part of its Business Technology (Office Administration) program. Development has occurred in partnership with the Waianae Coast Comprehensive Health Center.

A certificate of completion program (15 credits or less) for a Medical Receptionist has been developed, which will evolve into something more generic like Office Administration Support, since they believe that the program can be readily adapted to frontline office workers in the tourism/hotel industry at some later date.

Employees earn college credit for work performed and promotions in the workplace are tied to progress in the program. As part of the overall strategy, students who complete the work-based certificate of completion will be able to continue on to the Associate Degree (Business Technology) which will articulate to a Bachelors Degree at a 4-year university (Health Care Administration). The AS degree will be available for completion entirely online and is currently being completely adapted for online delivery. At present, the certificate is being delivered to the Waianae Coast Comprehensive Health Center. Once the pilot model and procedures are finalized, it will be desirable to expand the model to other health clinics and possibly the hospitality industry.

Employers noted immediate increases in employee engagement as a result of this program.

Indian Health Services and Navajo Reservation
College Connection: Northern Arizona University
Jobs to Careers Site
Flagstaff, Arizona

Learning Circles for Health Technicians

Learning Circles for Health Technicians provides learning and career development opportunities for American Indians serving as health technicians in health facilities located on the Navajo reservation. Specifically, a Certified Nursing Assistant (CNA) program is offered where workers can move through the program on one of two ladders:

1. Moving up in their current job description, creating additional levels within the frontline position.
2. Moving into an academic track where workers move beyond the CNA position into other health technician programs in health education, pre-nursing, sanitation, etc.

Their approach to work-based learning includes employer-approved projects, critical incident/task review, and a learner portfolio with a learning contract. In their portfolios, workers document their competencies that translate into courses requirements. At certain points in the program, students present their portfolios. The program has a *college liaison* that breaks down the competencies in the curriculum to see what will translate on the job. This process can only be applied to certain courses. Not all course can be translated to “on the job.” In this program there are supervisors who are involved with the learning that takes place in the workplace and there are *worksites coaches* that help with advising and mentoring on how navigate the postsecondary requirements. They also have a strong need for a case manager who helps to students deal with many day to day life problems and setbacks related to the culture of poverty. Also, they have need for tutors in science and math.

Electronic components are used for remediation. They are also developing some online courses for competencies in Public Health. The hope is that by using online courses in this program, will help to prepare the students that go to pursue online postsecondary degree offered at the colleges and university.

This project is a partnership consisting of: Northern Arizona University; Navajo Area Office Indian Health Service, Chinle Service Unit (*an Indian Health Service health care employer*); Winslow Indian Health Care Center (a tribal-run health care employer); and Pathways Into Health (*an educational consortium dedicated to improving the health of Native American communities*).

Community Health Care

College Connection: Tacoma Community College

Tacoma, Washington

Supervisory Training

This is a hybrid course that uses both web enhance features as well as non web-based approaches. This course uses in class lecture, small group face to face discussions and self study through textbooks/manuals. Streaming audio or video is used, but it is not interactive. Shared learning modules and webinars are also used. The community college trains the supervisors to do the training in the workplace. Aspects of the program that were customized were the content, scheduling, style of instruction, and the length and location of the program. The course was all done during work time.

As a result of the program, the employer has seen moderate improvements in the employees skills and competencies, their productivity and efficiency, and in their morale and cooperation in the workplace. There have been no improvements in wage gain or promotion and advancement.

The USB Program at Olympic College

A non web-based application of electronic learning.

Olympic College in Bremerton serves a large navy population with its proximity to the Naval Base Kitsap between the Puget Sound Naval Ship Yard and the Bangor Submarine Base. Ben Meredith, the Distance Learning Coordinator at Olympic College indicated that the challenge for his program has been to service the education needs for the navy, despite the obstacles of navy life. The solution needed to be flexible in idelivery and scheduling; compact enough to fit into onboard storage (sailors do not have a lot of room for books, VHS tapes, etc); and easily used on boats with as little extra equipment as possible. In the recent past, CD-ROMs were thought to be the best means for course delivery. However, the student inability to manipulate and interact with the materials on the CD-ROM suffered in comparison to other methods of web-based instruction. In addition, the CD-ROM had to be installed on the host computers or have access to additional software (which the navy scowls at, appropriately). Therefore, other options for electronic course delivery were explored and developed.

The new application was based upon USB technology. After an intensive development and programming effort, a proprietary platform was developed that is Flash(r) based and it is self-contained so that all software is within the USB drive. The USB drive takes nothing from the host computer and puts nothing on it. The USB drive is fully interactive without Internet connectivity, holds test modules that can randomly generate tests from a pool of questions, contains all of the student's work so they only need to return the USB drive, and contains video that does not lose quality as you blow it up from a YouTube sized box to a full computer monitor or larger.

The USB Program was originally designed for the Navy and cleared by naval intelligence for use on the nuclear subs. The USB program allows delivery of course content to students without Internet connectivity. Olympic College's Distance program now has 30 USB based courses at this point and a full Electronics degree in USB.

[The USB Program] is literally the Millennial Generation child of tele-courses. What we have found is that while the USB was designed for the Navy, it is attracting a base of constituents we never anticipated. We are attracting the attention of the Alaska education system for it to be used in place of Ham Radio for their distance students (Bush Students), by homemakers locally who are using it on their laptops while they wait at dance and soccer (Feedback comments), and anyone else who needs to learn but does not have Internet or the availability to come into a regularly scheduled class. (Ben P. Meredith, Distance Learning Coordinator, Olympic College, 2008).

The Distance Learning Program at Olympic College is currently finishing the first USB course with the Washington State Fire Marshall's office. This application of the USB Program is part of a grant to provide three initial courses for firefighters.

Manufacturing Companies Alcoa Apprenticeship Program

College Connection: Bellingham Technical College
Bellingham, Washington

Electro Mechanical Technician Program

This is a hybrid course which uses in-class lecture and labs and some streaming of audio or video content. The program is administered primarily through the college. The employers provide release time and flexible work schedules. The program has been in place since 2006 and it is offered quarterly. The courses include both electrical and mechanical options with core courses in hydraulics, electrical, welding, and general education. Each course is three months and the program takes seven quarters. Workers spend approximately nine hours per week. The employer bears the total cost, but they have also had some grant money.

The improvements employers have seen for employees are wage gain, promotion and advancement, occupational credentials, and college credits. The aspects of the program most valuable to the employer have been the hands-on use of equipment, the opportunity to do things in-class that the employees cannot do at work, on the job, and employees are starting to ask the “why” questions which implies a deeper understanding of the work. The program would be improved if they had classroom space or a permanent lab. They also need more training stations, used parts and models.

The instructor used to work at Intalco/Alcoa many years ago as an apprentice. As he reflects: Journeyman level workers do not have time or interest to train apprentices; they just tell them what to do and never explain “why”. The instructor then went to BTC to get additional training, then quit work at Intal to become an instructor. Now he teaches apprentices (Intalco pays their tuition) and he focuses on the “why”.

There are around thirty-five courses in the program including some remedial math and English. All courses use Coastal video-streaming and he is trying to add more online components. More money is needed for this program as there is no permanent classroom or lab and they are always looking for parts and machinery to use as models for his labs. It would also help if they could get some standardization and there needs to be interactions with the community and an advisory board to interact with industry.

Redwind Casino

College Connection: Tacoma Community College

Application of course modules delivered in the workplace
Olympia, Washington

Tribal Enterprise and Gaming Management Certificate Program

This course is forty-nine weeks long and participants earn fourteen college credits. There are seven 7-week modules. Employees spent about three hours a week during work time and 5-6 hours outside work time. The Tribe pays for the program.

The content ranges from casino operations to probability and statistics to state gambling commission regulations. The majority of the courses do not use web based features other than Blackboard. Courses are primarily in-class lecture, small group face to face discussion and self study through text book or manual.

The college developed the materials to use in the program and delivers the instruction of the program. The college also trains on-site supervisors who also conducting the training in the workplace. The college also provides tutoring and other assistants to those enrolled in the program. In general the college oversees the administration of the program. The program was customized in terms of content, scheduling, style of instruction, length and location of the program. The instruction style became much more hands-on and visual and less of a lecture approach.

Employees receive academic credit through the college and some have even continued working towards a degree. The employer has observed improvements in skills, competencies, specialization and productivity. There has also been great improvement in morale and cooperation in the workplace. Aspects of the program that have been most valuable to the employer are the depth and breadth of knowledge gained and much more openness to training possibilities.

The Casino acknowledges that the Tacoma Community College is most responsible for the program success. Their dedication and hard work made it happen. This workplace-based program has been a wonderful opportunity for low wage/lower skilled casino workers. One student said it was life changing for her.

Key Strategies for Workplace-Based Education Program Success

In reviewing the cases included in this study and in talking with key program contacts including those working in college based customized contract training programs, several key strategies for program success emerge. These strategies are part of what might become the “best practices” for workplace-based education programs with a college connection.

- **Strengthen the community college position to reach out to the low wage/lower skilled workers.**

Because the low wage/lower skilled workers have been previously out of reach from the academic community, easing them into the “college” environment is key to making workplace-based education programs successful. While four year colleges or universities may be amenable in some situations, by and large the mission of the community college is more suited to education programs that target low wage/lower skilled workers.

Community colleges are more likely than four year colleges to be involved in the workplace-based programs. The “academic rungs” of the educational ladder [at four year schools] are too far apart. A community college partner helps create more rungs and makes the timeline a little more appealing to the workers (*Ed Phippen*, Health Work Force Institute, 2008).

Currently four-year schools/universities are geared more toward offering continuing education, contract training and distance learning to *professional level workers*, or those that already have postsecondary degrees.

The universities in particular, do not want to be in competition with community colleges, especially when the community colleges are already more prepared to work at the pace and level that these low wage/lower skilled workers need (Washington State University Distance and Professional Education, 2008).

Furthermore, what is happening at the community college level complements what is happening in the four year colleges and universities. The community colleges can promote the connection between their own associate's degrees and the continuation with a bachelor's degree through the four year schools; this connection is particularly well suited to workers when a bachelor's degree is accessible through the online or distance degree programs through the universities.

In some situations because of geographic or structural factors, four year schools or universities may need to be involved in the workplace-based programs offered to low wage/lower skilled workers. In the Jobs to Careers Initiative, two of the current sites are connected to universities: Northern Arizona University is the most accessible postsecondary institution to work with the Navajo Reservation and University of Alaska is the most accessible to a geographic area that is not served by a community college system. One project site in Alaska has a training program for Behavioral Health Technicians in the remote Native Alaskan villages along the Bering Sea. Also, the Norton Sound Health Corporation (the employer) works closely with the University of Alaska/Fairbanks to deliver training remotely (i.e. by video conferencing and telemedicine techniques). The remaining Jobs to Careers sites are with community colleges or technical/vocational schools. In Hawaii, the Leeward Community College is part of the University of Hawaii system.

Community colleges can build on their existing strengths of having a strong base of customized training programs, strong community connections, and outreach to underserved populations. "Community college innovation is important, but 'reinventing' the college is not required." (Gershwin, 2008). However, while most community colleges have long served disadvantaged students, community colleges have not always fully realized their bridging potential for the disadvantaged according to Jenkins (2003). The potential for serving

disadvantaged students may require additional funding or a re-prioritizing current funding levels so that the specific needs of disadvantaged students are properly served.

First, many community colleges find it difficult to make the connections between remedial and college-credit programs, between academic and occupational degree programs, and between degree programs and jobs that are necessary for creating pathways of advancement for disadvantaged students. **Second**, it is obviously expensive to serve disadvantaged students and yet community colleges tend to be poorly funded. In the hierarchy of community college programs, those that serve disadvantaged students are the least well funded. As a result, many community colleges opt to focus their limited resources on serving more advantaged students in programs popular with employers and policy makers, rather than to risk serving students whose success is by no means assured. (Jenkins, 2003).

We need to rethink the role of the community colleges. We don't want the program to be just the college coming to run the class in the Hospital. It becomes "how to deliver work-based curriculum in the workplace which then becomes "**work-based learning.**" A partnership is formed with the employers too. (*Rebecca Starr, Jobs to Careers, 2008*).

Remedial or "developmental" education is one area in which community colleges could make a major impact in serving disadvantaged students while at the same time improving their institutional performance and image (Jenkins, 2003).

- **Integrate remediation, ESL and basic skills development into the postsecondary curriculum.**

Remediation is a critical and essential part of a "best practices" model for workplace-based education programs for low wage/lower skilled workers. There is no doubt that programs targeting low wage/lower skilled workers will have to address their deficiencies in basic skills before they can move on to those courses that lead to their career advancement. This would include ESL issues as well.

Thus far, programs that were consulted for this report admitted they were a little slow in recognizing that remediation as a key aspect of program success. Providing access to and allowing time for remediation has to be integrated into the overall program.

Work based learning programs are complicated by the lack of basic skills among workers. A certain level of preparation in basic skills is needed in order to ensure the programs are successful. Remediation has to be dealt with in order for workplace-based learning to work. Across the board this is a problem. (*Ed Phippen, Health Work Force Institute, 2008*)

Remediation as part of implementing the workplace-based programs is very common. There have been times I have proposed an ESL component of the program. And it was like I was proposing brain surgery; it was a big revelation. There's no sense of ignoring the reality. If they're good employees but ESL isn't a component, you're not going to get where you want to go. (*Business and Industry Services, Manchester Community College, 2008*).

Remediation is currently handled in a variety of ways. Some programs use computer based approaches such as "Work-keys"—an online skills evaluation tool—while others handle remediation through existing entities that are in the community and through curriculum based at the community college.

Colleges have been creative in how to handle this. For example at Owensboro, KY they have developed a new basic math curriculum aimed at health workers: "Math RX." (*Rebecca Starr, Jobs to Careers, 2008*)

Remediation is currently built in, but not directly aligned with the college's developmental/remedial curricula. We are using Workkeys/Keytrain as an alternative and 'quicker and more directly vocational' path to bring students up to speed in some basic skill areas. (*Michael Tagawa, Leeward Community College, 2008*)

But is this the most effective model for remediation?

Simply to pass through a remediation program or set of activities does not necessarily ensure that the student has gained the appropriate knowledge, skills and attitudes. (Education Commission of the States, 2000).

Currently, there is a disconnection between remediation and the postsecondary degree requirements (Gershwin, 2008). “In general, the more remedial courses students are required to take, the less likely they are to earn a degree” (Jenkins, 2003). There needs to be a link between remediation and basic skill development and ESL with the broader education goals and linked with earning postsecondary credentials. Remediation, basic skills development and ESL need to be contextualized as much as possible—boosting skills while in the workplace, in the course of working (*Nancy Williams*, Northern Arizona University, 2008).

Basic skills learning has to be connected to something meaningful to inspire persistence and participation by adults, especially adults who feel shortchanged by schools. (D’Amico, 2003).

Central to the career pathways model is the development of clear connections, or bridges, between basic skills development and entry level work or training in high wage, high demand career sectors. (Mazzeo, 2003)

Effective and efficient remediation is one of the greater challenges facing the community college. Fortunately, research is revealing that remediation accompanied by quality learning support systems—that is, tutoring, counseling, centralized administration, etc.—can be done with long-term success and, compared to other social programs, in a cost-effective manner. (Education Commission of the States, 2000).

In addition to being integrated into the postsecondary curriculum, there are also concerns about the length of time needed for remediation, especially when workers can only “take” one course at a time and more than one course is needed (sometimes 2, 3, and 4 courses are needed). Therefore, some have proposed some form

of *accelerated remediation* be developed, so that workers can move through these courses and begin in the postsecondary content more quickly and/or simultaneously (*Nancy Williams, Northern Arizona University, 2008*).

- **Obtain “buy-in” from the top down at both the college and within the employer company or organization.**

In order for workplace-based education programs to be successful, there needs to be “buy-in” or support from the top down both at the college or university and within the company. The program is about not just working with a particular faculty or department at the community college, but rather the process should have the dean of the college onboard and involved at the outset. Similarly, within a company, the president or CEO needs to be committed to bringing career advancement opportunities to low wage/lower skilled workers in the workplace.

As with any collaborative endeavor, commitment from a core of top level leaders from business, education, government, foundations, and non-profits is critical to success. (*Gershwin, 2008*).

Workplace-based learning is first and foremost about culture change. For the employer, it transforms them from a “learning organization” to a “teaching organization”. For the college or university, they are no longer simply delivering content, but instead become responsible for facilitating learning. These are major shifts in both organizations and nearly impossible to make without top-level support. A key aspect of program success is commitment from the highest level of the organization (*Ed Phippen, Health Work Force Institute, 2008*)

One of the overriding critical issues to program success is the top down approach. You need buy-in at the top from both the Educational institution and the employers in order to be successful. . . . The dean of the college has to be the one who “champions the program. If the Dean is on board then the program can work (*Rebecca Starr, Jobs to Careers, 2008*).

There needs to be a sense that the leadership from the college and industry are supportive and at times, directing this initiative. There are many moments when any number of issues arise from the faculty/industry partnership and there is a continuous need for

leadership to drive the process forward. (*Michael Tagawa, Leeward Community College, 2008*)

Those championing the need for workplace-based education programs will have to develop ways to market these types of programs at the top levels in both the interests of the college and the interests of the employers.

- **Build a solid partnership between the college and the employer company or organization.**

There needs to be a strong partnership built between the company/organization and the college. The partnership needs to be nurtured and have continuity throughout the process, from planning and design phases, to implementation and assessment phases. In discussions with the customized contract training programs at community colleges, partnerships have long been a part of their practice.

One aspect of the program that has been most important to its success is the hands-on care on the part of the director in working with the client (the employer). The director is actively involved and does not pawn off this work onto other people. The director sticks with each program from start to finish. (*Bristol Career Center, Tunxis Community College, 2008*)

We have a very strong partnership. We design a program in cooperation with the faculty that meets the customer's needs. We also stay in touch with the companies because we are very interested in repeat training. An aggressive interface with employers is key to success--consistent interface with employers and the ability to create non-traditional programs for employers. (*Business and Industry Services, Quinebaug Valley Community College, 2008*)

Listening to the employer very carefully and working together. It's really important that all the players need to be at the table. All of the players need to have an opportunity to be a part of the solution. . . I would just like to reiterate that all the stake holders need to learn how to play nicely together (*Business and Industry Services, Manchester Community College, 2008*).

Input should be obtained from both sides and there should be sharing of information. The colleges need to get out into the workplace and have a visual presence there. On the other hand, the partnership in a *work-based learning program* is more than the college coming out to the workplace and conducting a class. The employer and the college need to be jointly involved in shaping the program and monitoring and accessing program progress throughout the implementation of the program.

A cornerstone of the Jobs to Careers is to change the way colleges and employers work with each other. For Work-Based Learning to occur, there needs to be a partnership that develops the curriculum together and then delivers it together. (*Rebecca Starr, Jobs to Careers, 2008*).

The most important aspect is the ability to develop a positive working relationship with industry. (*Michael Tagawa, Leeward Community College, 2008*).

Partnerships between colleges and employers are opening doors for participants to advance at work, to earn postsecondary credentials and to make a good living. They are also addressing the critical needs employers have for skilled workers (*Gershwin, 2008*).

In the Jobs to Careers program at Virginia Mason Medical Center for Surgical Technician Training, the planning team consists of people from both the hospital and from the community college. Specifically the planning team consisted of the Director of the Operating Room, surgical technicians, other hospital staff along with a dean and faculty from the community college. The team reviewed the existing curriculum and evaluated the specific needs of the hospital (*Ed Phippen, Health Work Force Institute, 2008*).

- **Develop workplace-based education programs with a work-based learning approach.**

Workplace-based programs require “thinking outside the box.” Colleges and employers both need to be open and willing to develop new models for **work-based learning** that look quite different from what have been tried or used in the past. One area for thinking outside the box is to identify work as an asset to expanding access to postsecondary education. Colleges and employers need to redefine the relationship of work and learning and to no longer see work as a barrier to higher education (Gershwin, 2008). As much as possible learning models should incorporate aspect of the work that is being done on the job and to incorporate that into the learning model.

Leaders of successful partnerships have reshaped their own thinking in order to reshape their workforce (Gershwin, 2008).

In order for these work based programs to be successful you need creative thinkers who will think out of the box. There are three critical aspects to the community college involvement: *First*, the educational institution needs to be open and think out of the box. *Second*, faculty need to be willing and committed to changing and adapting their course curriculum to a work-based approach. *And third*, once the work-based curriculum is developed, there is a need to work with the credit granting entities within the college or university to “validate” the programs. . . . (Rebecca Starr, Jobs to Careers, 2008)

There may be some resistance to creating new learning models or approaches to designing curriculum. Postsecondary institutions have long standing traditions of how curriculum and courses of study are designed and in the requirements for earning degrees. Allowing flexibility and creativity in defining new curriculum and degree requirements that are “equivalent” but not identical to traditional programs will be challenging. Working out the details of how the new programs will “look” also takes time. Defining learning objectives that can be measured through “on the jobs” skills will have to be worked out as part of the curriculum design.

Have to redefine the competencies and the learning objectives—and “reconcile” them to one another. The learning involves didactic learning—traditional lecture/classroom style (this is usually where the community college faculty come and deliver); But also the teaching that occurs on the job during the work day through on-site supervisors, such that the staff at the hospital become partners as well. Curriculum can be adapted such that actual worksite stuff is used to meet the standards. (Jobs to Careers interview, 2008). A most important aspect is that the college has focused a great deal on refining its student learning objectives and assessment mechanisms as part of the accreditation process. This provided the basis for engaging in discussions on the relationship between our student learning objectives and industries’ competencies. When industry has its competencies well defined, the process seems to be even smoother. (*Michael Tagawa*, Leeward Community College, 2008).

Resistance to new models may become more pronounced depending on how college faculty members are evaluated for tenure and promotion. If new learning models do not coincide with how faculty performance is evaluated, there may be problems in getting faculty “on board.” With these new approaches there should be incentives for college faculty to participate. Also, accrediting bodies can complicate matters. Accrediting standards that are competency based (e.g. surgical technology from CAAHEP—Commission on the Accreditation of Allied Health Programs) work the best. If accrediting standards also define **how** someone must learn, then it becomes nearly impossible.

With regard to employers, they need to be creative in how they implement the programs in their workplace when there are constraints pertaining to keeping enough workers “on the floor” while others are taking the courses. Employers also need to be creative in how employees are recognized for their achievements, especially if there are difficulties in how much wage gain can occur or when promotion may be slower in coming. Supervisors as well may be overwhelmed by taking on a new program with the employees they supervise. Again creative approaches are needed in order to bring them on board. Overall,

having support from the top levels of both the college and the workplace will allow those involved in planning, designing, implementing and assessing the workplace-based education program to have the “freedom” to be creative and to move beyond the “usual” ways of doing things. Overall, new models of learning become very relevant in the workplace when the curriculum standards are designed to include hands-on learning and less reliance on textbooks.

Design curriculum based on competencies needed to advance in both education and employment. Therefore, both employers and college faculty need to be involved in the curriculum development process. Student performance and program outcome in career pathways programs are assessed based on clear standards of what students should be able to do to demonstrate mastery. *Teach students to learn by doing through real-life programs and situations.* Programs that promote contextual learning make heavy use of projects, lab, simulations and other experiences that enable students to learn by doing. Help them see the value and connection of the academic fundamentals to fields of interest to them. (Jenkins, 2003).

- **Involve college faculty members in the design and implementation of the education programs.**

College faculty can benefit from being involved with workplace-based education programs because they are able to connect with people in the field and that in turn can help them with their work. These programs also give the faculty more visibility and they are offering courses to those who wouldn't normally be students at the college. Nonetheless, involving faculty may take some effort. Some faculty may have a harder time than others in adapting their curriculum and teaching style when it comes to implementing the curriculum in the field.

Faculty members need a lot of guidance as they adapt their curriculum. Many are wedded to their traditional ways. In order to help faculty, we have held round tables to talk about the different teaching styles. We also offer technical assistance and work directly with community college faculty as a consultant or guide in the process of adapting curriculum. (*Rebecca Starr, Jobs to Careers, 2008*).

While in some cases faculty may actually teach some of the courses in the workplace; more often they will be involved as facilitators of the education program and make periodic site visits instead or offer support via online means. The faculty members advise those supervisors who are “on the ground” teaching those enrolled in the program.

All of the Jobs to Careers sites are at different stages with how faculty members have responded. Some are just getting started and for others they are all “on board.” And in some cases the community college faculty members have become the champions of the program. Some faculty are now spreading the effort to other programs (*Rebecca Starr, Jobs to Careers, 2008*)

- **Incorporate on-site supervisors or “faculty extenders” as instructors in the workplace.**

Using frontline supervisors to work with employees has been identified as a critical part of work-based education programs. The on-site supervisors may do a better job of teaching and assessing performance because they are in the midst of the work that is being done and have a shared work context and experience with the students. The on-site supervisors become “faculty extenders” of the college faculty.

The role of the community college faculty becomes that as facilitator or coach. The on-site supervisor becomes the “faculty on the ground.” They are the ones that end up assessing when employees successfully reach their learning objectives. On-site supervisor must be trained and prepared for their role in these programs. (*Rebecca Starr, Jobs to Careers, 2008*)

This program lives or dies based on the commitment of faculty extenders, so they are carefully selected because of their commitment to employee development. They are already bought in and now get additional resources and support to help them fulfill an internal value. They have to, because if they are successful their employees will be promoted. (Health Workforce Initiative, 2008).

Hopefully supervisors are brought on board because in certain types of training; it’s the supervisor that has a lot of potential for input in terms of who can keep up with the training who can go, and how it will be applied. (Business and Industry Services, Manchester Community College, 2008).

Lead time is needed in the implementation of the programs so that the faculty extenders have been adequately trained and have the necessary credentials to be able to teach, assess and evaluate the student performance (e.g. complete the adult education training course). Supervisors that are brought “on board” benefit from their efforts to educate the low wage/lower skilled workers they supervise. Some supervisors even find that they can advance their careers through their work as faculty extenders.

Once the company buys in, then the supervisors begin to see the huge benefit for the workers and the work. Frontline workers are better skilled, and much better able to deliver health care. The employees feel more valued, motivated and therefore perform better as well. At the Texas site in Austin, the supervisors got so excited by the programs that some of them enrolled in college. In Owensboro, in the RN program that is being implemented some of the faculty extenders (supervisors) are actually moving up the ladder to where they become adjunct faculty within the community college. This gives them more prestige and status. (*Rebecca Starr, Jobs to Careers, 2008*).

- **Provide academic mentors for low wage/lower skilled workers**

Low wage/lower skilled workers do not have goals for college or careers. Many are the first in the family to attend college and were more likely to experience poorer quality education at the primary and secondary levels. One key to the workplace-based education programs is to help these students develop an awareness of their options for college study and careers. In order to give them this awareness, the workers first need a clear sense of the steps they need to take to pursue a postsecondary education. Workers need to be motivated to develop their career interests and what it will take to achieve their career goals.

The program has a need for more sophisticated academic advisement. . . Students need resources because for many this is not something they have ever done or been exposed to. They need to learn “how to go to the admissions to register,” “how to add/drop classes,” “how to go see a professor during office hours,” “how to get your high school transcript,” etc. Learning to navigate through the academic environment is very foreign to these workers and it can be very scary going into that bureaucracy. It is easy to underestimate the barrier this can be for them. Many groups of people know “How to go to school” but for first the generation going to college, they have no knowledge of this. If one or both of their parents did not go to college, then the current student will likely have problems with navigating. (*Nancy Williams*, Northern Arizona University, 2008).

Giving student information about the possibilities is not enough. Career pathways programs seek to expose students to options available to them as an integral part of the curriculum so they can make choices based on their own experience. . . *Provide well-integrated support services* to help students overcome barriers to success. Assessment and counseling to ensure proper placement, financial aid, academic advising, counseling and career services. . . (Jenkins, 2003).

Low wage/lower skilled workers eligible for the workplace-based education program will need academic mentors, or access to individuals who can help them navigate through the postsecondary institution even at the most fundamental

level. While community colleges do provide academic advising, most often it is a model that relies on the student coming to the “college” for advising. For the low wage/lower skilled worker, the advising needs to be available to them where they are—in the workplace for these particular programs.

These students need an academic mentor or “coach” who can “show them the ropes” when it comes to understanding the academic institution and postsecondary programs. Besides mentors, the NAU Jobs to Careers site suggested that websites be developed that can be used as a resource for information, advice and encouragement. The NAU site conducts workshops for students and provides them with mentors.

They want every student to be able to do it on their own and this makes it more likely that they can continue on their own. Good academic advisement is key! Most colleges have advisors and advising, but it is weak when it comes to helping these particular students. The type of advisement they need is in how to read a catalogue, knowing what classes and in what order to take them (e.g. taking one science at a time, taking English before Anthropology, etc.) and what their degree plan is. (Nancy Williams, Northern Arizona University, 2008).

- **Connect low wage/lower skilled workers to community organizations, social services, public health and other social resources.**

Links to community, social, and public health resources will help low wage/lower skilled students deal with economic, social, and personal well-being issues that are a part of their lives—issues that can seriously hinder and even prevent educational success if the proper help is not sought.

Programs should partner with community organizations and social service agencies who enable community colleges to offer student support services that are generally not well-equipped to provide (e.g. child care, drug treatment, health care, family counseling, transportation). (Jenkins, 2003)

There is also a need for **case management**. This group of people has a whole life of problems and personal setbacks: abusive husbands, financial crises/problems, children on drugs, and the general chaos related to poverty. Part of working with these workers is about helping them deal with “today’s crisis” and in knowing where to refer them; it is about know how to deal with the daily chaos/crisis. Ideally the site coordinator is someone with experience/knowledge of social work and in public health. (*Nancy Williams*, Northern Arizona University, 2008).

Another way to build in a support system within the program is to use a cohort approach in program design. Some career pathway programs are designed so that students proceed through them as groups or “cohorts.” Within the cohort, student interact with one another related to the program and have a sense of belonging and being part of something “bigger.” This approach allows for peer tutoring and support and may even increase the likelihood of student to complete the program.

- **Provide an incentive hierarchy for the workers progressing through the program.**

Increased wages, promotion, and recognition are important incentives for employees. Employees need incentives for participating in these innovative programs. At the outset, low wage/lower skilled workers do not see educational or career advancement as something that is accessible to them because of costs or their lack of basic skills. In order to facilitate a change in their perspective, they need to be convinced that they will benefit from the program. Enrolling in the program takes a commitment and they need to have an incentive to participate. By gaining a credential, being assured of a promotion and/or a wage increase will help workers to see a value in participating.

Many students have lots of certifications and skills but as a package they are scattered and fragmented. One of the goals is to bring those together and prepare them for mainstream academia. The first step is to allow frontline workers to get that first step, the “Certified Nurse’s Assistant”, and increase their salary, then provide the link needed to allow them to continue into the nursing programs. (*Nancy Williams*, Northern Arizona University, 2008).

Obtaining a credential or accreditation has to be part of the workplace-based learning in health care because so many occupations are regulated so that having the proper credential is essential. There is no wiggle room.. A credential can be transferrable. *Wage increase* should also be a part of this because increased pay is a motivator for enrolling. . . .Employers need to agree at the outset that they will promote workers once they complete the program (*Ed Phippen*, Health Work Force Institute, 2008).

- **Use E-Learning and other electronic components to enhance or facilitate the learning process for low wage/lower skilled worker education programs.**

There is some use of electronic components in the implementation of workplace-based education programs with a college connection; however there is not as much reliance on them as may have been expected. Blackboard and streaming of video or audio content are used as well as webinars in some cases. Online access to consult with college faculty was also used or the electronic components were used when students needed to make-up missed “lectures” or class information. One barrier that may need to be overcome is that low wage/lower skilled workers may be more likely to have lower computer skills overall.

As discussed earlier there is a wide variety of electronic components that can be developed and used in workplace-based education programs. As reviewed in various studies there are advantages to using electronic components, including flexibility in scheduling and pace, up to date information, scalability and overall

cost savings. Electronic components should be used to facilitate the learning process and to enhance the course content being conveyed.

Each program and site will have to evaluate their particular circumstances in order to determine what methods will work the best in their situation. Some programs may benefit greatly from asynchronous modules that allow students to work at their own pace at times most convenient for them. For others, the synchronous approach may be preferred.

Native Americans and low income workers overall need an approach that has a more personal social support aspect. For example, video conferencing facilitates that aspect because it brings the students together and the professor to the students (compared to other types of online asynchronous learning). They also prefer telephone over email. This aspect has also been the case in Alaska. (*Nancy Williams*, Northern Arizona University, 2008).

As long as the electronic tool itself does not become the focus of the program or a hindrance to learning, electronic learning components have the potential for making workplace-based education programs stronger and more effective.

- **Allow ample time for planning, design, and implementation of workplace-based education programs.**

There needs to be adequate time for planning and designing the programs before they are implemented. There needs to be a period of time where the working relationship between the college and the employers is formed, which is likely to occur through the planning and design phases of the programs.

Lead time is needed in preparing these programs and is a key aspect to program success, specifically for curriculum development and the preparation of on-site supervisors. At least a six to nine month planning time is needed before the first employee is even enrolled. . . Most of these planning elements are dependent on

size, business model, resources, staffing, and location (i.e. rural, urban, proximity to a college) of the employer. (*Ed Phippen*, Health Work Force Institute, 2008).

Other decisions that need to be made involve how the course content will be delivered, what electronic components will be used, and who will conduct the classes? Also, how will the college instructor communicate with those implementing the program and what interactions will the college faculty have with students? If supervisors in the workplace are going to help in the delivery of the course, their training or credentials will need to be in place before any of the low wage/lower skilled workers enroll and start in the program.

Furthermore, the implementation of the programs sometimes takes longer because they are based in the workplace, the low wage/lower skilled workers are not as accustomed to the learning environment.

A course of study which will take a year for a full-time student at the community college will likely take 18-24 months in the workplace setting where workers cannot attend full-time. Remediation will add even more time. (*Ed Phippen*, Health Work Force Institute, 2008).

In other situations, the time it takes to earn a degree may be accelerated because the participants are already in the workplace, meeting some of the course requirements through work-based competencies. For example, the Registered Nurses program at the Jobs to Careers site in Owensboro, Kentucky has been accelerated to eighteen months.

- **Accommodate unique aspects of various work settings in program design.**

Programs will need to be **customized** for various employers based on the situational factors in each work site, different management styles, and organizational structures. Customizing the program is part of the collaboration

that needs to occur between the college and the company. Meeting the specific employer needs is a key aspect of the customized contract training that community colleges are already doing.

The employers are key to letting us know what exactly they want when designing programs. Then we make sure it makes sense and is realistic for the company and employees. It's important that we are honest with the companies as far as how many hours or days it will take to make this program successful. . . .One thing worth noting is that customization is there but not as deep as you might think. For example, business writing is business writing. We might throw in some things relating to the specific company and customize it that way, but in the end, excel is excel. (Bristol Career Center, Tunxis Community College, 2008).

It's a customer based approach that is provided. We customize often, because everybody's a little different. If we had more people, more resources, we could connect with the community more. You have to be interfacing with the community to let them know you're here. But we are the best. We are extremely responsive to students and employers. The college as a whole is the best out of the twelve Connecticut Community Colleges. (Business and Industry Services, Quinebaug Valley Community College, 2008).

Well you know, the customer is always right, if you didn't understand it, read it again. But you have to do a little bit to protect yourself as well because you don't want people who ignore your suggestion say that you did a bad job or the training was ineffective even though they did not give their employees the opportunity because of some other barrier. (Business and Industry Services, Manchester Community College, 2008).

The college and the employer will need to work out the details of the learning outcomes as they pertain to existing curriculum and the specific industry based competencies that can be demonstrated in the workplace. Making the college curriculum relevant to the company may look different from one company to the next. There will be customization around delivery methods in terms of what parts of the curriculum can be taught in the workplace and whether the college faculty or the workplace supervisors are better suited to be the instructor. Also

programs are likely to be customized around what electronic components will be used and whether those components are web based or not. The use of various electronic components will depend in part on the technological capabilities within the company to handle the components in the workplace.

The scheduling of course activities will also vary from one company to the next depending on what their specific constraints are in terms of needing people on the “floor” doing the essential daily activities in the workplace. Programs in various worksites may vary in terms of how many hours a week can be devoted to instruction, how many months will the program last, and how much of the instruction and specific course activities can be incorporated into the daily work routine.

There is a three pronged approach that each of the programs have, but each is different in how much of each prong is emphasized: A. Didactic learning/Classroom learning with community college faculty (done at the workplace); B. Learning components online (e.g. chat rooms, webinars, distance learning techniques) mainly for question and answer review sessions; and C. Workplace learning in the course of working. This is carried out by on-site supervisors. (*Rebecca Starr, Jobs to Careers, 2008*).

However, one aspect of customizing programs too much is that the program will not be as useable at other or similar situations.

The downside of too much customization is sustainability. There is an upfront cost to customization. If it's kept to a minimum, then the program can be picked up and offered to other similar employers. This allows the college to hold costs down and scale workplace-based learning. In Waianae, Leeward Community College fully intends to provide the training they offered to Waianae Health Center to other health centers on the island. (*Ed Phippen, Health Work Force Institute, 2008*).

Main Benefits of Workplace-Based Education Programs for Employees

Key outcomes of workplace-based programs for employees are measured in terms of wage gain, credentials and/or college credits, and promotion and advancement. Employees also have improved morale and commitment to their work.

Within the Leeward Community College front line medical office program, workers earn credit for work performed and promotions are tied to progress in the program.

We have run a supervisory development program for about fifteen years. Several of these people are now managers. Their salaries have increased, their responsibilities have increased, and now they're sending their employees to us! The employees who are selected by their company to train usually have potential, and they usually move up. (Business and Industry Services, Quinebaug Valley Community College, 2008)

The more training an employee can acquire, the better they can do their job, the more security they have, and the better that they can support the company. (Business and Industry Services, Manchester Community College, 2008)

In addition, some workers may want to further advance their careers having been exposed to postsecondary opportunities. All of these wage, credential, promotion, and morale factors contribute to workforce career advancement. Low wage/lower skilled workers who previously did not see themselves along a career path, can now begin to see the potential and possibilities for their own careers. Potentially, employees will feel empowered by their improved work responsibilities and credentials and wages and will most likely have greater commitment to their work and loyalty to their employer and community.

Main Benefits of Workplace-Based Education Programs for Employers

Employers benefit from the workplace-based programs because their workers are able to fill positions that have shortages of available people. Employers have workers with improved skills and competencies and improved productivity, efficiency and morale.

Employers benefit from these programs because they are filling high demand jobs with workers that are already invested in their organization. They can even fill the “dead-end” jobs by giving employees the “incentive” that they will have the option of advancing on a career path. This makes it easier to fill the dead end jobs as well or even raises the standard for recruiting workers. Employers will retain their workers if they provide them with a career pathway. (*Ed Phippen*, Health Work Force Institute, 2008).

Employees become more efficient and effective through these programs. I think that when you know your employer is investing in you it makes you work a little bit harder. The social aspect is important for employers because it sends a message that they are interested in their employees. They also get a return on their dollar. By having a college conduct the training, it eliminates employees thinking that their supervisor doesn't know what they're doing, and because we are a college we supposedly know what we are doing. (Bristol Career Center, Tunxis Community College, 2008).

The program provides a mechanism for establishing standard baseline requirements for frontline workers and the means by which the college can help students achieve those standards. Hopefully, this leads to enhance productivity in the workplace. (Leeward CC, 2008).

Employers are able to retain workers who have been “trained” so there is a good “return” on their investment. There is a greater loyalty or feeling of investment on the part of the employees.

When employers invest in their employees, the employee understands that they are a valued component in an organization. Statistics will tell you it encourages employee loyalty and productivity. The employers are saying “we believe you are

valuable” and the employee does what I like to call value added activities. And they become more proficient as a result of the training. . . . If an employer supports training and development it sends a message that they want to create learning, which builds an environment that’s moving forward. They are saying, “we don’t want to stay where we are. We want to get better, we want to raise ourselves a level.” (Business and Industry Services, Quinebaug Valley Community College, 2008)

There is no hard data to show there is lower employee turnover after employees complete “degree”, but there is anecdotal data to suggest the employee engagement improved sooner than expected; there has been less use of sick leave and overall motivation and qualitative interest in work. (*Ed Phippen*, Health Work Force Institute, 2008).

Employers also have incentives to offer new hires into the frontline and low skilled jobs, given that the workplace-based education program is being implemented in the workplace; it provides potential opportunities for those new hires.

Main Benefits of Workplace-Based Education Programs for Community Colleges (and Universities).

In a time when community colleges are facing issues with success and pass rates and high drop out rates. Developing and implementing work-based programs becomes a visible way to enhance success. (*Rebecca Starr*, Jobs to Careers, 2008)

Workplace-based education programs are in the best interest of community colleges, because they give the colleges access to a totally different population of student. It allows colleges to tap into a “new” population. However, these are the low wage/lower skilled workers who are not college bound so the workplace-based education programs should help these people to become college ready.

There is also the potential the workplace-based education program produce better learning outcomes than traditional education. It’s ability to help students

apply learning in real-life situations (no role plays, case studies, or word problems) should improve critical thinking. Many Jobs to Careers sites are incorporating reflective learning as a strategy to help that. For example, learning journals read by supervisors who have the training necessary to lead the student down a path that will immediately impact job performance while improving academic outcomes.

There may be spinoff opportunities such as when the curriculum can be adapted in other areas. These programs give the colleges more visibility. Colleges and universities build their reputation when they build a rapport with companies and organization. Another benefit is that the workplace-based education programs contribute to the headcount for the college. More dollars are coming into the college, due to higher enrollment, and the education program taking place at the workplace, frees up space on the college campus.

because more students enrolled. And because the workplace-based learning takes place at the workplace, this frees up space at the community college campus.

There is the expectation that some percentage of the incumbent workers who participate in these programs will continue on to obtain their Associate's degree through the college.

Workplace programs are in the best interest of colleges because it gives access to a totally different population of student--taps a "new" population. These are the lower wage, low skill workers who do not usually have access to college. Our Jobs to Careers program helps these people to become college ready and with that, provide a college education to a population who otherwise would not have access. (*Rebecca Starr, Jobs to Careers, 2008*)

Developing WB learning programs requires a "culture change"—transforming a learning organization into a teaching organization. It involves changing line supervisors. In order to make these changes, you

need a commitment from the highest level of the organization (workplace). Colleges also have to go through a culture change because they are developing alternative delivery of curriculum, learning models and degree programs thereby making education available to working adults. In order to do this, a commitment from the highest level of the college is needed too. (*Ed Phippen*, Health Work Force Institute, 2008)

Additional Issues Related to the Implementation of Workplace-Based Education Programs

- ***How are these programs funded?***

The contract training programs offered through colleges and universities are self-sustaining, but whether this is do-able for workplace-based education programs is not clear. With the contract training, clients are charged based on specific budget models that colleges might have. The college and company enter into an agreement based on the business plan that is put together.

Bristol Career Center is on the entrepreneur side of the college. Although we receive some state funds our job is to make the college money. The companies fund these programs. (*Bristol Career Center*, Tunxis Community College, 2008)

With workplace-based education programs an important part of the “training” is the credential or credits the workers obtain in the process. The “cost” for these are different than when an employer enters into a contract for “training” in the workplace. If employees are asked to bear the cost of enrolling, they won’t be able to do so; these are workers who are at the lowest pay rates and likely to not have the economic means to pay for their education. Employers may not be as willing to “invest” in the “credential” or credits towards a degree as much as for the basic “training” the employees receive in the process (this may be truer in some sectors more than others). While the employers do get a return on their

“investment” eventually, the use of meaningful incentives to encourage employer to “buy-in” at the outset may be worth exploring.

More generally however, more research is needed in order to understand the various costs of designing and implementing these programs. Publically funded community colleges get reimbursed by state in a per student amount (FTE), but that may only apply to students that are enrolled in programs based on the campus. Because workplace-based programs are only offered to those working in a specific location and not on campus (at work), there may be no direct state reimbursements on a per student basis. Should the community colleges be reimbursed for workplace-based education? (*Ed Phippen*, Health Work Force Institute, 2008).

Overall the costs of workplace-based courses are less, because the employer inevitably will be bearing the costs of the facility (including tech support) and supplies and the community college overhead charges do not apply when programs implemented in the workplace. This is not documented yet but this is an area that need to be analyzed and ultimately determined in order to lower costs overall. (*Ed Phippen*, Health Work Force Institute, 2008).

Initiatives and grant programs have the potential for jumpstarting workplace-based education programs in the areas of greatest need. The proper planning and development of programs should address the key strategies for success discussed in this report. These programs will very likely demonstrate positive outcomes that will speak for themselves.

• ***Who will Market the Workplace-Based Education Programs?***

How do the top levels of the colleges and the companies become informed and “enlightened” about the benefits of these workplace-based education programs? Efforts to bring the key players together should be pursued through face to face meetings, panel discussions, conferences and other ways to convey information

about the potential benefits of workplace-based education programs and to open the dialogue.

Workplace-based training and education is difficult to do, but it has to be part of the portfolio for higher education in the future if we want to keep college accessible to the public and to play a role in a region's economic transformation. If we can maintain program quality and standards, then alternatives such as this may provide a lower cost vehicle for at least completing part of the higher education track while also being more physically accessible than our traditional programs while at the same time improving productivity in the workplace. (Leeward CC, 2008).

The challenge is being out in the community and understanding the needs of the community and being aware of changes in the economy. Part of our job is making that connection to the need and delivering something to address that need—put into action. (Olympic College, 2008).

Conferences and roundtables can be used to “market” these programs at the top and get the word out that these programs have many benefits. (*Rebecca Starr, Jobs to Careers, 2008*).

Being informed about Initiatives like the Jobs to Careers are a great help in getting programs started and giving exposure to the positive outcomes of these programs. Developing workplace-based education programs should be a priority for the state. By bringing together the main players and focusing on the key strategies outlined in this report along with the proper and relevant resources will be critical for success. The effort will be challenging yet the potential benefits of successful workplace-based programs are empowering for those colleges (and universities), employers, and employees involved.

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Interviews with the Jobs to Careers Initiative

Rebecca Starr,

Deputy Director of the Jobs to Careers Initiative.
Jobs for the Future.
Boston, Massachusetts.

Mike Tagawa

Dean, Career and Technical Education (CTE) and
Office of Continuing Education and Workforce Development (OCEWD)
Leeward Community College
University of Hawaii
Pearl City, HI

Ed Phippen

Program Director for Health Work Force Institute
Washington State Hospital Association

Nancy Williams

[insert information]

Interviews with other Programs/Colleges

Patricia McKeown, Ed.D.

Vice President of Instruction
Bellingham Technical College
Bellingham, Washington

Elizabeth Swenson

Project Director
Skills in Manufacturing and Related Technologies (SMART) Initiative
Connecticut Community Colleges
Hartford, Connecticut

Interviews with Continuing and Distance Education and Customized Workforce Training Programs based at College/University

Muriel Oaks Dean of Distance and Professional Education Washington State University Pullman, WA
Victor Mitchell Director of Business and Industry Services Tunxis Community College Farmington, CT
Jill O'Hagen Director Business and Industry Services Quinebaug Valley Community College Danielson, CT
Eileen Stern Director of Business and Industry Services Manchester Community College Manchester, CT
Wendy Miles Director of Military and Continuing Education Customized Training Olympic College Bremerton, WA

Appendix

Study on Workplace Based Education and Training Programs Connected to a College

Key Questions to Ask Program Directors and/or College Contacts

Q1. What education and training programs from the college are offered through the workplace? Or in what subject/content areas are offered?

Q1A. Are any of the programs offered as credentials or for college credits towards a particular degree?

Q1B. Is there interest or demand from companies/organizations for degree programs to be offered in the workplace?

Q2. To what extent is remediation a part of implementing workplace-based programs? That is, to what extent do employees need help with basic skills in reading, language, math, etc. before they are ready to take other courses? And how is this handled?

Q3. What types of companies or organizations have offered your college's programs in their workplace?

Q4. What is the basic design or structure of the programs your college offers? (e.g. format, duration, etc.)

Q4A. What role do college faculty have in these programs? Or how are they involved?

Q4B. What role do the employers and/or on-site supervisors have in program implementation?

Q5. In what ways are your programs customized for various employers? (examples?)

Q5A. How would you describe the relationship that is established between the college and the employers who are using the programs?

Q6. What electronic or digital components are used in the program (CD-Rom, videos, online modules, blackboard, etc.)?

Q6A. In your experiences, how effective are the electronic components? And how critical are they for the program implementation?

Q7. How is the program funded (in the short-term and in the long-term)?

Q8. What are the main benefits of the workplace based program for: Employees?

Q9. What are the main benefits of the workplace based program for: Employers?

Q10. What are the main benefits of the workplace based program for: College?

Q11. What 2-3 aspects of the workplace based programs are most important to success?

Q12. What are the key outcomes of workplace based programs in terms of wage gain, employee retention, productivity, promotion and advancement, etc.?

Q13. What else would be useful to know about workplace-based training and education?

Thank you very much for taking the time to help us with our study.

Survey of Workplace Based Training Programs

Washington Workforce Training and Education Coordinating Board

October 2008

Name of Training Program: _____

Training Program Contact Person: _____

Contact telephone/email: _____

College/University connection: _____

Hello, my name is (name) and I am calling from the Social and Economic Sciences Research Center and we are interesting in learning about workplace-based education and training programs that have connections to a college or university.

I would like to learn more about your company's workplace-based education and training program, {NAME OF PROGRAM or CONTENT OF PROGRAM} and its connection to {NAME OF COLLEGE/UNIVERSITY}.

Specifically I would like to learn more about the implementation of this program and what aspects of the program are done using electronically distributed components, such as online curriculum, video conferencing or software simulations. I have a particular interest in learning about the successes and challenges that your company has experienced related to this program.

I have a set of questions I would like to ask that could take about 15 minutes. Is this a good time for me to talk with you?

1 No → When would be a better time for me to call?

CALLBACK INFO: _____

2 Yes → CONTINUE

CLARIFICATION: Are there other workplace-based education and training programs tied to a college or university that are currently offered in your company besides {NAME OF PROGRAM}?

IF YES: We would like to ask about the program that has been the most successful within your company within the last three years. Which program would that be?

QA. What is the specific title/content of this other workplace-based education or training program?

Program Aspects

Q1. Which of the following subject areas are covered in this workplace-based education or training program offered in your company/organization? Mark all that apply.

- 1 Numerical Literacy
- 2 English as a Second Language
- 3 New employee orientation
- 4 IT and systems
- 5 Processes, procedures, and business practices
- 6 Communication and interpersonal skills
- 7 Customer service
- 8 Marketing and sales
- 9 Managerial and supervisory skills
- 10 Profession or industry specific skills
- 11 Executive development
- 12 Specialized equipment
- 13 Software applications
- 14 General academic skills
- 15 Other: _____

Next, we'd like to learn more about the various electronic components that are used in the education or training program.

Q2. Is the training and education program offered in your workplace a:

- 1 Fully on-line course → Go to Q3
- 2 Hybrid course,
where 50% or more of the course is delivered online,
but also includes some components that are not delivered online → Continue with Q2A
- 3 Web-enhanced course,
with less than 50% of the course delivered online → Continue with Q2A
- 4 Non Web-enhanced → Continue with Q2A

Q2A. Which of the following formats best describes how the “nonweb” course/components is delivered:

- 1 In-class lecture
- 2 Small group face to face discussion
- 3 Self study through Text book/manual
- 4 Other: _____

Q2B. What electronic technology does the program use that are not online?

- 1 DVD
- 2 Software applications
- 3 Software based simulators
- 4 Other: _____

IF RESPONSE "4" ON Q2, GO TO Q4, ALL OTHERS GO TO Q3

Q3. Which of the following eClassroom activities and/or eLearning materials and other electronic components are used regularly in company's workplace-based education and training program? *Mark all that apply.*

- 1 Simulations and modeling
- 2 Streaming audio or video content or video conferencing
- 3 Text/chat for real-time student feedback/questions
- 4 Open source books/courses
- 5 Shared instructional design (shared course templates)
- 6 Content repositories (shared learning modules)
- 7 Blogging (alternative communication channels for students)
- 8 Wikis (collaborative teams working on projects)
- 9 ePortfolios (portable transcripts)
- 10 Webinars (reusable lectures/fishbowl seminars)
- 11 Other: _____

Q4. In which of the following ways is your education or training program connected to the college or university? *Mark all that apply.*

- 1 Purchased curriculum and/or training components from college/university
- 2 College/university developed materials to use in program
- 3 College/university delivers instruction for the training program
- 4 College/university trains supervisors to do the training in the workplace
- 5 College/university provides tutoring and other assistance to participants
- 6 Participants receive academic credit through college/university
- 7 Oversees the administration of the program
- 8 Other: _____

Q5. In what ways was this program customized in order to meet the needs of your specific company/organization? *Mark all that apply.*

- 1 Content of the program
- 2 Scheduling of the program
- 3 Length of program
- 4 Location where program is implemented
- 5 Style of instruction
- 6 Skill assessment of participants
- 7 Other: _____

Q6. How is the education and training program administered at your company/organization? Choose one.

- 1 Primarily through the college/university
 - 2 Primarily through your company/organization
 - 3 Jointly through college/university and your company/organization
 - 4 Outside vendor
 - 5 Other arrangement:
-

Q7. What are the primary responsibilities of the person within your company/organization who is administering or overseeing this education and training program?

Q8. Which of the following does the employer provide for those participating in the education or training program? Mark all that apply.

- 1 Release time at work
- 2 Flexible work schedule
- 3 Facility where program is implemented
- 5 Computer, related software, and/or internet access
- 4 Other technical support (e.g. TV/DVD player component)
- 6 Books and other study tools
- 7 Instructors
- 8 Reimbursement and/or payment of program tuition
- 9 Other: _____

Q9. In which year was the education or training program first offered through your company/organization?

Year: _____

Q10. How frequently is the education or training offered through your company/organization?

- 1 More than once a year
- 2 About once a year
- 3 About every other year
- 4 Less than every other year

Q11. What is the overall duration of the program?

Days: _____

Weeks: _____

Months: _____

Q12. While enrolled, about how many hours per week do participants spend in the program?

Hours during work time: _____

Hours outside of work time: _____

Q13. Approximately what does it cost per participant to implement this program including costs to the company, the participant, and any outside funding sources?

\$ _____ per participant

Q14. Approximately what percent of the total cost per participant is paid by each of the following sources?

Employer: _____

Program participant _____

Outside funding source _____

100%

Q15. What source of outside funds does your company receive in order to implement this program?

- 1 Private funding
- 2 State government
- 3 Federal government
- 4 Other (please specify): _____

Q16. Are there other nonmonetary costs to your company in order to implement this program? Please explain.

Program Participant Characteristics

Q17. Approximately how many participants do you have enrolled in the program per year?

_____ # of participants

Q18. On the average, what percentage of the participants are from each level:

Entry level: _____ %
Mid level: _____ %
Mid management: _____ %
Upper management: _____ %
Executive: _____ %
100%

Q19. On the average, what percentage of the participants are...

Women: _____ %
Men: _____ %
100%

Q20. What percentage of the participants are in the following age categories...

18 - 25: _____ %
26 - 40: _____ %
41 - 55: _____ %
56 +: _____ %
100%

Q21. What percentage of participants have been employed with your company:

Less than 1 year: _____ %
1 – 5 years: _____ %
6 – 10 years: _____ %
11 – 20 years: _____ %
20 + years: _____ %
100%

Q22. What percentage of participants have the following educational backgrounds:

Less than high school: _____ %
High school/GED: _____ %
Some college: _____ %
Trade/Vocational degree: _____ %
College graduate: _____ %
Graduate or professional degree: _____ %
100%

Q23. On the average, what percent of the participants who start in the program successfully complete the program?

_____ %

Program Outcomes

Q24. Overall, what improvements have workers experienced as a result of participating in this workplace-based program?

	<i>Great Improvement</i>	<i>Moderate Improvement</i>	<i>No Improvement</i>	<i>Improvement Not needed</i>	<i>Not sure</i>
Skills and competencies	4	3	2	1	0
Wage gain	4	3	2	1	0
Productivity	4	3	2	1	0
Morale and cooperation in the workplace	4	3	2	1	0
Efficiency	4	3	2	1	0
Specialization and professional expertise	4	3	2	1	0
Job retention/reduced turnover	4	3	2	1	0
Promotion and advancement	4	3	2	1	0
Occupational credentials	4	3	2	1	0
College credit or earned degree	4	3	2	1	0

Q25. What 2-3 aspects of the program have been most valuable to the employer?

Q26. What 2-3 factors are most responsible for the program success?

Q27. What 2-3 things would improve this program and make it more successful?

Characteristics of the company

In order to better understand the context in which your training or educational program operates, we would like to know a little more about your company.

Q28. What of the following economic sectors best describes your company or organization? [WHAT LIST OF CATEGORIES WOULD WORK BEST HERE?]

- 1 Education
- 2 Finance and insurance
- 3 Health services
- 4 Professional and business services
- 5 Information
- 6 Wholesale and retail trade
- 7 Manufacturing
- 8 Construction
- 9 Agriculture, forestry, fishing, mining
- 10 Utilities and transportation
- 11 Leisure and hospitality
- 12 Public administration
- 13 Other Services
- 14 Other: _____

Q29. How many sites does your company/organization have?

- 1 1
- 2 2 – 5
- 3 6 – 10
- 4 11 – 20
- 5 More than 20

Q30. How many employees does your company have on the average per site?

- 1 Under 10
- 2 10 – 50
- 3 51 – 100
- 4 101 – 250
- 5 251 – 500
- 6 501 – 1000
- 7. More than 1000

Q31. Is there anything else you would like to tell us about the training or education program offered in your company/organization?

Thank you for taking the time to complete this important survey!

Attachment D: ESSB 6295 as passed in Session Law

CERTIFICATION OF ENROLLMENT
ENGROSSED SUBSTITUTE SENATE BILL 6295

Chapter 258, Laws of 2008

60th Legislature
2008 Regular Session

LEARNING OPPORTUNITIES--WORKPLACE-BASED

EFFECTIVE DATE: 06/12/08

Passed by the Senate March 12, 2008
YEAS 49 NAYS 0

BRAD OWEN

President of the Senate

Passed by the House March 11, 2008
YEAS 94 NAYS 0

FRANK CHOPP

Speaker of the House of Representatives

Approved March 31, 2008, 11:17 a.m.

CHRISTINE GREGOIRE

Governor of the State of Washington

CERTIFICATE

I, Thomas Hoemann, Secretary of the Senate of the State of Washington, do hereby certify that the attached is ENGROSSED SUBSTITUTE SENATE BILL 6295 as passed by the Senate and the House of Representatives on the dates hereon set forth.

THOMAS HOEMANN

Secretary

FILED

April 1, 2008

Secretary of State
State of Washington

1 NEW SECTION. Sec. 2. A new section is added to chapter 28C.18 RCW
2 to read as follows:

3 (1) To the extent funds are appropriated specifically for this
4 purpose and in partnership with the state board for community and
5 technical colleges, the board shall convene a work group that includes
6 representatives from the prosperity partnership, the technology
7 alliance, the higher education coordinating board, a private career or
8 vocational school, a four-year public institution of higher education,
9 the council of faculty representatives, the united faculty of
10 Washington state, community and technical college faculty, and a
11 community and technical college student, to take the following actions
12 related to electronically distributed learning:

13 (a) Identify and evaluate current national private employer
14 workplace-based educational programs with electronically distributed
15 learning components provided by public colleges and universities. The
16 evaluation shall include:

17 (i) A review of the literature and interviews of practitioners
18 about promising practices and results;

19 (ii) An initial determination of feasibility based on targeted
20 populations served, subject matter, and level of education;

21 (iii) An overview of technological considerations and adult
22 learning strategies for distribution of learning to employer sites; and

23 (iv) An overview of cost factors, including shared costs or
24 coinvestments by public and private partners;

25 (b) Review and, to the extent necessary, establish standards and
26 best practices regarding electronically distributed learning and
27 related support services including online help desk support, advising,
28 mentoring, counseling, and tutoring;

29 (c) Recommend methods to increase student access to electronically
30 distributed learning programs of study and identify barriers to
31 programs of study participation and completion;

32 (d) Determine methods to increase the institutional supply and
33 quality of open course materials, with a focus on the OpenCourseWare
34 initiative at the Massachusetts Institute of Technology;

35 (e) Recommend methods to increase the availability and use of
36 digital open textbooks; and

37 (f) Review and report demographic information on electronically

1 distributed learning programs of study enrollments, retention, and
2 completions.

3 (2) The board shall work in cooperation with the state board for
4 community and technical colleges to report the preliminary results of
5 the studies to the appropriate committees of the legislature by
6 December 1, 2008, and a final report by December 1, 2009.

7 NEW SECTION. Sec. 3. A new section is added to chapter 28C.18 RCW
8 to read as follows:

9 (1) To the extent funds are appropriated specifically for this
10 purpose, the board shall use a matching fund strategy to select and
11 evaluate up to eight pilot projects operated by Washington institutions
12 of higher education. By September 2008, the board shall select up to
13 eight institutions of higher education as defined in RCW 28B.92.030
14 including at least four community or technical colleges to develop and
15 offer a pilot project providing employer workplace-based educational
16 programs with distance learning components. The board shall convene a
17 task force that includes representatives from the state board for
18 community and technical colleges and the higher education coordinating
19 board to select the participant institutions. At a minimum, the
20 criteria for selecting the educational institutions shall address:

21 (a) The ability to demonstrate a capacity to make a commitment of
22 resources to build and sustain a high quality program;

23 (b) The ability to readily engage faculty appropriately qualified
24 to develop and deliver a high quality curriculum;

25 (c) The ability to demonstrate demand for the proposed program from
26 a sufficient number of interested employees within its service area to
27 make the program cost-effective and feasible to operate; and

28 (d) The identification of employers that demonstrate a commitment
29 to host an on-site program. Employers shall demonstrate their
30 commitment to provide:

31 (i) Access to educational coursework and educational advice and
32 support for entry-level and semiskilled workers, including paid and
33 unpaid release time, and adequate classroom space that is equipped
34 appropriately for the selected technological distance learning
35 methodologies to be used;

36 (ii) On-site promotion and encouragement of worker participation,

1 including employee orientations, peer support and mentoring,
2 educational tutoring, and career planning;

3 (iii) Allowance of a reasonable level of worker choice in the type
4 and level of coursework available;

5 (iv) Commitment to work with college partner to ensure the
6 relevance of coursework to the skill demands and potential career
7 pathways of the employer host site and other participating employers;

8 (v) Willingness to participate in an evaluation of the pilot to
9 analyze the net benefit to the employer host site, other employer
10 partners, the worker-students, and the colleges; and

11 (vi) In firms with union representation, the mandatory
12 establishment of a labor-management committee to oversee design and
13 participation.

14 (2) Institutions of higher education may submit an application to
15 become a pilot college under this section. An institution of higher
16 education selected as a pilot college shall develop the curriculum for
17 and design and deliver courses. However, the programs developed under
18 this section are subject to approval by the state board for technical
19 and community colleges under RCW 28B.50.090 and by the higher education
20 coordinating board under RCW 28B.76.230.

21 (3) The board shall evaluate the pilot project and report the
22 outcomes to students and employers by December 1, 2012.

23 NEW SECTION. Sec. 4. A new section is added to chapter 28C.18 RCW
24 to read as follows:

25 The board may receive and expend federal funds and private gifts or
26 grants, which funds must be expended in accordance with any conditions
27 upon which the funds are contingent.

28 NEW SECTION. Sec. 5. Sections 2 through 4 of this act expire
29 December 31, 2012.

Passed by the Senate March 12, 2008.

Passed by the House March 11, 2008.

Approved by the Governor March 31, 2008.

Filed in Office of Secretary of State April 1, 2008.