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Developing an Effective Workforce through Instructor Training

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Career and technical educators have long recognized the fact that a highly skilled craftsperson is not necessarily a highly skilled instructor of that craft. "Experience has shown that a trained instructor can do a much better instructing job than an untrained man, no matter how competent that man may be in his trade or on his job" (Allen, 1919, p. 22). In the belief that the key to a productive, efficient workforce lies in high quality training for journeymen and apprentices, the Carpenter's International Training Fund (CITF) partnered with the Workforce Education and Development Program (WF ED) of Pennsylvania State University in an effort to improve the quality of workforce education.

Background

In the fall of 1991, representatives of the CITF contacted a WF ED faculty member and expressed their interest in conducting an international training seminar that would focus on the professional development of their instructors. The initial discussions centered on issues of improving the effectiveness of the apprenticeship-and-journeymen instructors, who were employed throughout North America by Joint Apprenticeship and Training Committees. During the discussions, it became apparent that the CITF representatives hoped to fulfill three objectives with the planned seminar: 1) Enhance the content knowledge of their instructors with technical workshops demonstrating new products and processes; 2) Enhance their instructional performance through academic workshops focused on essential teaching skills; and 3) Enable the participants to earn college credits applicable to the adult education certification requirements enacted by several states.

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As a result of the initial planning session, the first week-long International United Brotherhood of Carpenters and Joiners Union (UBC) Instructor Training Workshop was held in May 1992 at a St. Louis, Missouri UBC Training Center. Eighty-seven participants attended this first workshop, which consisted of a mixture of technical seminars taught by a select group of UBC members, and multiple sections of an academic seminar taught by WF ED faculty. The design of the academic seminar reflected needs that had been identified by CITF personnel, and it provided participants one semester-hour of credit through Penn State's Office of Continuing and Distance Education. From feedback provided through on-site evaluations as well as the follow-up assessments conducted during the summer of 1992, the CITF personnel revised their original intentions of conducting periodic events and instead, immediately begin planning a series of annual workshops along with several train-the-trainer sessions for the UBC personnel who were selected to serve as instructors for the future technical seminars.

The St. Louis training center continued to be the site for the annual workshops from 1993 through 1996. Each year the instructional content for the technical and academic seminars was revised based upon feedback from the previous year and on needs identified by the CITF staff. Members of the Coordinators International Training Advisory Group, who are selected throughout North America by UBC district vice presidents as regional representatives of the UBC Training Coordinators, also offered advice and suggestions for the content of the annual workshops. By the time of the 1996 workshop, the relevance of the content, the increasing acceptance of the philosophy that high-quality training is essential to a productive workforce, as well as a shift in scheduling of the workshop from May to August, resulted in the number of participants growing from the original 87 to 290.

This combination of factors, combined with the UBC's continuing commitment to ensure a productive workforce, prompted several changes in the instructor training program. Along with a change in location for the workshops, the workshops' intended outcomes were re-examined and the strategies for attaining them revised.

Outcomes and Strategies

Although the initial three workshop objectives that had been identified in 1991 continued to be addressed in the annual workshops, by 1995 the members of the Coordinators International Training Advisory Group decided to seek ways to repackage and more effectively market its instructor training to the membership. Subsequent discussions with the CITF staff and WF ED faculty members led the Coordinators International Training Advisory Group to establish the Carpenters Instructor Certification Program (1996) with the intention to "...develop a framework of certification standards that assure that Carpenters Apprenticeship instructors will have the necessary competencies to meet the training demands of the industry now and in the future" (p. 1). The program consisted of three levels of instructor certification, each requiring a combination of technical, safety, and academic training. However, rather than awarding one semester-hour credits through the workshops' academic seminars, the members of the Coordinators Advisory Group selected six three-credit undergraduate courses for inclusion in the certification program. These were

- WF ED 105 Integrated Curriculum Implementation – Occupational analysis for instructional planning: emphasis on instructional methods to deliver a competency-based program in an integrated learning environment
- WF ED 106 Program and Facilities Management – Organization and management of learning laboratory to facilitate the delivery of a competency-based program in a safe environment
- WF ED 207w Assessment Techniques – Assessments, recording, and reporting of learning in an integrated competency-based vocational education system
- WF ED 270 Introduction to Industrial Training – Overview of the training profession. Introduction to economic and psychological foundations. Examination of relationship of industrial training to education
- English 015 - Instruction and practice in writing expository prose that shows sensitivity to audience and purpose

- Speech 100 - Introduction to speech communication: formal speaking, group discussion, analysis and evaluation of messages

These specific courses were selected because they constituted the requirements for new teachers to secure Vocational Instructional I certification in Pennsylvania and were equivalent to the adult instructor requirements established by other states in which UBC training facilities were located. To facilitate completion of the WF ED courses, UBC representatives contracted with Penn State's Office of Continuing and Distance Education for the development of customized versions of the courses to be delivered in a blended instructional approach of both on-site and distance delivery. Although the English and speech courses were already available through distance learning, equivalent courses from regionally accredited institutions were also accepted as fulfillment of the certification program requirements. Implemented in 1997, the certification program has been modified several times and now includes an additional course, WF ED 471 Training in Business and Industry, within the 2005 version as detailed in Figure 1.

Relocation of Training

By 1996, the number of workshop participants had grown to exceed the capacity of the St. Louis training center. Therefore, the 1997 and 1998 workshops moved to the larger UBC training center in Chicago. However, with 330 and 360 participants respectively, within those two years the attendance exceeded the capacity of even that training center to provide space for the technical and academic seminars. Other logistical problems grew with each year as well. Neither the St. Louis, nor the Chicago training centers were located near facilities with sufficient accommodations for housing and feeding the participants. Daily bus trips to and from the training centers through rush hour traffic consumed valuable workshop time. In addition, the use of the training center for the workshops disrupted the everyday functioning of the local training center. The five days of the seminars, as well as at least one additional day to prepare the center and another to return it to its normal configuration, stole

instructional time from the local's apprentices who normally used the facility.

Figure 1
Carpenters Instructor Certification Program

Level I Certification

Complete at least 10,000 OJT hours as a UBC member
 Complete one or more Carpenters International Training Fund Train-the-Trainer Technical Workshops
 Hold a valid first aid/CPR card
 Complete UBC/Penn State Academic workshop WF ED 105 (or equivalent)
 Complete UBC/Penn State Academic workshop WF ED 106 (or equivalent)

Level II Certification

Hold a Level I certification for at least one year
 Complete two or more Carpenters International Training Fund Train-the-Trainer Technical Workshops
 Complete one or more Carpenter International Training Fund Safety workshops (or equivalent)
 Maintain a valid first aid/CPR card
 Complete UBC/Penn State Academic workshop WF ED 207w (or equivalent)
 Complete either English 015 or Speech 100 (or equivalent)

Level III Certification

Hold a Level II Certification for at least one year
 Complete three or more Carpenters International Training Fund Train-the-Trainer Technical Workshops
 Complete two or more Carpenters International Training Fund Safety workshops (or equivalent)
 Maintain a valid first aid/CPR card
 Complete UBC/Penn State Academic workshop WF ED 270 (or equivalent)
 Complete UBC/Penn State Academic workshop WF ED 471 (or equivalent)
 Complete English 015 (or equivalent)
 Complete Speech 100 (or equivalent)

Maintain Level III certification by developing a "Personal Professional Development Plan" with their supervisor. The plan will be based on local needs and will include a minimum of one education course and one Safety Train-the-Trainer workshop every five years. The following Workforce Education courses are available from the CITF and meet the education requirement:
 WF ED 413 Vocational Education for Special Needs Learners
 WF ED 445 Vocational Guidance

Maintaining the quality of instruction also proved to be difficult given the over-crowding of existing classrooms and the use of temporary classrooms located in the shop area. As one instructor noted, the noise generated by 16 routers operating in the solid surface class on the other side of a temporary divider made thinking difficult and talking impossible in the print reading class he was supposed to be teaching. Although the move from May to August played a role in increasing workshop participation by enabling the attendance of instructors whose apprenticeship programs held an August break, others whose programs were still in session in August were excluded from attending.

These logistical problems necessitated a revamping of the annual workshop design and resulted in a two-part solution: 1) replace the single large workshop with several smaller regional workshops, at least temporarily and 2) build a training center dedicated to year-round training.

Commitment to Training

UBC personnel had engaged in discussions about the need for the construction of an International Training Center as early as 1996. However, the continuing success of the annual workshop format, as demonstrated by the attendance outgrowing the capacity of the largest existing facility, added new momentum for the plan. After consideration of several alternative sites, the decision was made in 1998 to locate the United Brotherhood of Carpenters International Training Center (CITC) in Las Vegas, Nevada. The ground-breaking ceremony for the \$22 million training center was conducted on September 28, 1999, followed a year and a half later by the grand opening ceremony on March 23, 2001.

Situated in a commercial zone south of McCarran International Airport, the CITC is a self-contained facility which eliminates the transportation, lodging, instructional, and other logistical problems that plagued the international seminars held in St. Louis and Chicago. The CITC includes 80,000 square feet of shop space; twelve 1200-square foot classrooms and six 600-square foot classrooms, all of which feature teaching stations equipped with audio/visual and computer instructional resources;

a 75-seat theater/classroom; a 300-seat meeting room; a cafeteria; 128 single occupancy dormitory rooms; and an exercise facility.

In 2002, a second building was added to the CITC to facilitate a week-long gas and steam turbine workshop for UBC millwrights. The turbine building includes a 20,000-square foot shop area; two 1100-square foot classrooms; a 6-bay welding shop; and a 1200-square foot maintenance shop.

Currently, the CITC curriculum includes more than 90 workshops that are scheduled from 1 to 12 times per year. Since 2003, the facility has enrolled an average of more than 5,000 students per year in its workshops. Costs for participating in the workshops including travel, lodging, food, and tuition are paid for through the Carpenter's International Training Fund which is supported by the \$.04 per hour of work paid into the fund by all members. As a result of its success, the CITC staff is already planning to double the number of dormitory rooms as well as add additional classrooms (D. Shoemaker, Personal Communication, August 2005).

Expanded Academics

As the future home of the Carpenter's International Training Center (CITC) took shape, planning to maximize its potential for professional and academic training was well under way. In August 2000, CITF personnel convened a train-the-trainer seminar for the UBC and WF ED annual workshops' instructors. The seminar included sessions on instructional techniques, planning the curriculum, designing the instructional spaces and classrooms, planning the schedule for existing courses, and considering the inclusion of additional technical, safety, and academic courses. From these sessions, came the recommendation that the following academic courses be added to the program:

- WF ED 413 Vocational Education for Special Needs Learners – Introduction to program modifications, supplementary services, and resources for special needs learners
- WF ED 445 Vocational Guidance – Problems and possibilities of vocational guidance; the field of guidance and guidance literature; methods of field-work; guidance techniques

- WF ED 471 Training in Business and Industry – Appraisal of training functions and development of competencies in work analysis, design, development, delivery, an evaluation of training

As with the earlier WF ED courses, these three were customized for the UBC through Penn State's Office of Continuing and Distance Education and designed for delivery in a blend of on-site, classroom-based instruction followed by individual study through distance learning.

Also arising from the CITF train-the-trainer session was the recommendation to continue the accessibility of the technical and academic seminars but to eliminate the daily shift between the two that proved to be troublesome during the national workshops. Therefore, it was decided to schedule the WF ED classes for three full days, typically Wednesday through Friday and Monday through Wednesday. This new schedule would facilitate attending technical classes prior to or subsequent to the academic classes. It would also permit a UBC member to enroll in two technical classes and two academic classes within a two-week period. A sample of the implemented schedule for August 2005 is displayed in Figure 2.

Just as the members of the Coordinators Advisory Group in 1995 created the Instructor Certification Program in order to encourage continuing professional development, the instructors who attended the CITC train-the-trainer seminar in August of 2000 sought ways to increase opportunities for those members who wished to attain credentials beyond the third level of certification by earning an associate degree or, ultimately, a baccalaureate degree. Since the UBC instructors are dispersed throughout North America, the two primary challenges in developing associate and baccalaureate degree pathways for them were accessibility and transferability. To provide wide access to the program, the existing 60-credit Associate Degree in Letters, Arts, and Sciences available through Penn State's World Campus was selected instead of a more specialized technical associate degree. As displayed in Figure 3, this degree program contains a combination of general education courses, Labor and Industrial Relations (LIR) courses, as well as all of the WF ED courses required to complete the UBC instructor certification program.

Figure 2
UBC International Training Center Schedule of Classes
August 2005

8/3/2005 - 8/4/2005	Siemens Westinghouse and UBC Welding Partnership
8/5/2005 - 8/6/2005	Millwright Marketing
8/8/2005 - 8/12/2005	Curriculum Committee
8/8/2005 - 8/11/2005	Soffit Framing
8/8/2005 - 8/12/2005	GE Gas Turbine Member Training
8/8/2005 - 8/12/2005	Commercial Door Hardware
8/8/2005 - 8/9/2005	Ingersoll-Rand Door Hardware Certification Refresher
8/8/2005 - 8/12/2005	I INSTALL - Floor Layer Curriculum
8/10/2005 - 8/12/2005	Workforce Education 105 - Integrated Curriculum Implementation
8/10/2005 - 8/12/2005	OSHA 502 Construction Safety & Health Outreach Training
8/10/2005	Ingersoll-Rand Electrified Door Hardware
8/10/2005 - 8/12/2005	WF ED 270 - Introduction to Industrial Training
8/10/2005 - 8/12/2005	WF ED 445 - Vocational Guidance
8/10/2005 - 8/12/2005	WF ED 207 - Assessment Techniques
8/12/2005 - 8/13/2005	Millwright Marketing
8/15/2005 - 8/17/2005	WF ED 106 - Program and Facilities Management
8/15/2005 - 8/17/2005	WF ED 413 - Vocational Education for Special Needs Learners
8/15/2005 - 8/19/2005	GE Gas Turbine Member Training
8/15/2005 - 8/17/2005	WF ED 471 - Training in Business and Industry
8/29/2005 - 9/2/2005	GE Gas Turbine Member Training

Because all of the general education and LIR courses are available at a distance through the World Campus, and the WF ED courses are scheduled at the CITC on a regular basis, this degree is easily accessible throughout North America. Additionally, courses completed at other regionally accredited institutions can be applied towards the degree requirements, and all 60 credits earned in the associate degree program can be applied towards the baccalaureate, making the degree widely transferable.

The Adult Learner Baccalaureate Degree Program in Workforce Education and Development also fulfills the desired accessibility and transferability criteria by offering more flexibility than the more traditional full-time enrollment degree. For example, as long as a degree candidate enrolls in a minimum of one Penn State course during every three-year period, the degree requirements remain unchanged no matter how long it takes for the individual to earn the degree. In addition, UBC instructors who choose to enroll in the baccalaureate degree

Figure 3
World Campus Associate Degree in Letters, Arts, and Sciences

Requirements	Credits
<i>General Education: (21 Credits)</i>	
ENGL 015 Rhetoric and Composition	3
CAS 100 Effective Speech	3
STAT 100 Statistical Concepts and Reasoning	3
LIR 100 Industrial Relations	3
STS 101 Modern Science, Technology and Human Values	3
EMSC 150 Out of the Fiery Furnace	3
ART 001 The Visual Arts and the Studio	3
<i>Major (24 credits)</i>	
ENGL 202 Effective Writing	3
BI SC 004 or PHYS 001	3
ECON 002 Introductory Microeconomic Analysis and Policy	3
ART 020 or MUSIC 005	3
HIST 020 or HIST 021	3
LIR 136 Race, Gender, and Employment	3
LIR 435 Labor Relations in the Public Sector	3
LIR 201 Employment Relationship: Law and Policy	3
<i>Electives (15 credits)</i>	
WF ED 105 Integrated Curriculum Implementation	3
WF ED 106 Program and Facilities Management	3
WF ED 207w Assessment Techniques	3
WF ED 270 Introduction to Industrial Training	3
WF ED 471 Training in Business and Industry	3
Total Credits	60

program are eligible to purchase up to 24 credits, based upon their work experience. Since all 60 credits of the associate degree transfer into the baccalaureate program, the result is that the instructors have, or may be eligible to receive, as many as 84 credits of the 130 credits required for the baccalaureate degree. As with the associate degree, the remaining 46 credits may be completed through the World Campus and at the CITC, or through another regionally accredited institution.

An Effective Workforce

From the beginning, the ultimate goal has been to produce an effective workforce by enhancing the training provided to apprentices and journeymen by UBC instructors. To fulfill that goal, all workshops are evaluated not only by the participants in terms of the relevance and quality of the content as well as the quality of the instruction, but also by the instructors of the workshops, the Director of the International Training Center, and the members of the Coordinators International Training Advisory Group. The feedback gathered through this evaluative process has resulted in an increased number of workshops offered and the addition of optional associate and baccalaureate degrees to provide on-going career development. The success of the program has linked the UBC instructor certification program to salary advancements and the increasing expansion of the Carpenters International Training Center. As Douglas McCarron, General President of the UBC, stated, "Skills taught at the International Training Center make our contractors more productive and competitive, creating more jobs for our members" (2005, p. 2). The commitment that began with plans by the CITF and WF ED for a single seminar has grown into the fulfillment of the premise that from high-quality instruction flows high-quality workmanship.

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