

CONNECT News

Community Support, Networking, and Assistance for Environmental Career Training

May/June 2019

The Hazardous Materials Training and Research Institute (HMTRI), with a cooperative agreement from the US Environmental Protection Agency, provides technical assistance to communities interested in developing and delivering environmental job training. CONNECT is HMTRI's acronym for Community support, networking, and assistance for environmental career training. Each bimonthly e-publication features topics of interest to organizations delivering environmental remediation training. This issue discusses curriculum development and training.

Best Practices

Curriculum Development and Training

Curriculum development evolves from a series of external influences

As part of this series of CONNECT newsletters, HMTRI has identified critical issues encompassing a broad range of activities that when addressed will increase the likelihood of program success. This month's newsletter addresses curriculum development and training. Rather than using a "build it and they will come" approach, EWDJT curriculum is best constructed from the bottom up. Curriculum guided by stakeholder needs can deliver both high retention and placement rates. Stakeholders include potential employers, program supporters, community residents, as well as program participants. Presented are several issues associated with curriculum development and training:

1. Understanding employer needs
2. Synchronization of training with workforce needs
3. Student assessment standards appropriate to the complexity of the curriculum

4. Life skills, remedial education, and support services as part of EWDJT training
5. Additional considerations affecting curriculum development
6. Incorporating safety and health in the classroom curriculum

Understanding employer needs

Across the country, local economies are diverse and dynamic in nature. Every community has its own history, political priorities, and environmental issues. A full range of business activities requiring certified environmental workers can be found in most large and midsized communities. While densely populated regions have numerous opportunities for employment, rural areas have fewer options. Smaller communities typically have few employers with limited opportunities for workers with environmental credentials. EWDJT graduates in small and rural communities often find employment with national remediation projects away from their home base. As with many construction

workers, environmental remediation workers enjoy the lifestyle of living in a small community while traveling as part of their work life. In small communities, environmental workers also find employment in local government, at municipal facilities, and public works projects. For this reason, it is important that EWDJT program staff seek employment opportunities with local employers, government, and national contractors.

Because the demand for certified environmental workers is not constant, it is essential that program planners prioritize skill and knowledge requirements most in demand. At the same time, trainers need to develop a curriculum that will address a range of additional job opportunities. Proper labor market assessments are critical for successful EWDJT graduate placement. Because environmental work may be grouped with or incorporated into traditional occupations, conducting labor market assessments can be especially difficult.

- Welders may need asbestos training when working around insulated piping.
- Painters may require lead testing, remediation training, and confined space certifications.
- All trades working with potential hazardous exposures are required to have 1910.120 certifications.
- Many construction and deconstruction occupations require environmental remediation skills and certifications.
- Handling and transporting hazardous materials requires environmental certifications.

Since many environmental jobs are embedded in traditional occupations, labor market assessments limited to environmental job titles will not reveal the majority of open positions. Individual employers must be approached with specific questions regarding certification, skill,

and knowledge requirements associated with various jobs.

The following categories of employers often look for employees with EWDJT job skills but do not use the title of environmental technician:

- Manpower and temp. firms
- Storage and waste facilities
- Consultants – remediation and service providers
- Local construction trade organizations
- Manufacturing firms
- Chemical and refining facilities
- Municipal facilities and utilities
- Painting, repair, and deconstruction companies
- Transportation and material handling operators
- Scrap, recycling, storage, and land fill operations
- Hospital and health care facilities

Synchronization of training with workforce needs

Hazardous Waste Operations and Emergency Response (HAZWOPER 1910.120) training is mandatory for anyone working around hazardous materials and must be provided to all EWDJT participants. Aside from HAZWOPER training, EWDJT grantees are requested to customize curriculum guided by best practices, local, and national workforce needs. Since environmental and community issues vary widely among communities, standardized training is not recommended for EWDJT grantees. Example offerings by workforce development programs demonstrate the diversity of curriculum that has been delivered over the years.

- Site remediation, assessment, inventory, and analysis
- Asbestos abatement
- Lead abatement
- Renovation, repair, and painting (RRP)

- Mold remediation
- Meth lab cleanup
- Underground storage tank removal
- Confined space training
- Crime scene cleanup of hazardous materials
- Bloodborne pathogens
- Integrated pest management
- Emergency planning, preparedness, and response
- First aid, CPR, blood borne pathogens
- Hazardous materials traffic control
- Commercial driver's license (CDL)
- Forklift driver training
- Leadership in Energy and Environmental Design (LEED)
- Building trades related to constructing beams, caps, synthetic barriers, pumping facilities, and similar structures to remediate contamination
- Computer-aided design and drafting (CADD)
- Water/wastewater training
- Geographic information systems (GIS)
- General construction (OSHA 10 or OSHA 30)
- Alternative treatment technologies
- Advanced health and safety training
- Solar site preparation and evaluation

Clearly, one size does not fit all. While programs cannot provide training that prepares students for every environmental job, EWDJT can, however, provide a basic set of skills with recognized certifications to motivated graduates interested in environmental careers. A best practice approach in building a customized core curriculum is synchronizing training and certifications to employer needs. Prioritize training and certifications for jobs in most demand. Then use awareness training to fill in gaps that will familiarize students with additional peripheral job opportunities. As development continues, double check the proposed curriculum with input from the advisory committee, prospective participants,

and community stakeholders. EWDJT grantees will still need to consider funding restrictions, facility, and trainer availability which will be discussed later in this newsletter.

Student assessment standards appropriate to the complexity of the curriculum

Student retention leading to graduate placement is highly dependent on the following issues:

- Motivating students to pursue environmental careers
- Creating team and peer to peer learning environments
- Optimizing the size quality of training cohorts
- Matching student verbal and math skills with the complexity of training
- Addressing classroom disparities such as age, education, experience, culture, and language
- Recognizing physical requirements associated with training
- Considering the ability of applicants to attend training and associated events
- Understanding employer restrictions and policies regarding new hires

Issues just noted are often grouped together in a category termed student recruitment, screening and assessment. We have discussed the all-important recruitment process in previous [CONNECT newsletters](#). This discussion focuses on the assessment component as it relates to curriculum development. Applicant assessment is part of an overall selection process that creates a student cohort likely to be successful as students and as graduates. While trainers need to consider employer needs as they develop their curriculum, assessment staff need to do the same when selecting program participants. Of utmost importance, students need to be employable. When students are unable to grasp instruction or lose interest in the subject matter, chances of successful placements are slim. Students

unprepared to solve environmentally related calculations or unable to express results of their findings fall behind. Unable to keep up with the rest of the class, a downward spiral begins, ending with tardiness and eventual failure.

To insure EWDJT applicants have verbal and math skills necessary to complete the course of instruction, student assessments have been incorporated into most EWDJT programs. When assessment tests are not administered, high school diplomas or General Educational Development (GED) certificates have been used as assessment guides. In most cases, local job centers will administer math and verbal assessments for the EWDJT program as a leveraged partner. The most widely used evaluation tools include the following tests:

- Comprehensive Adult Student Assessment Systems (CASAS)
- Tests of Adult Basic Education (TABE)
- WorkKeys

The specific assessment used usually depends on the evaluation method commonly recognized by local agencies and employers. Increased dropout rates can often be traced back to a lack of attention given to poor assessment results. These are situations where program staff does not appreciate the inability of students to complete the academic rigors of the EWDJT curriculum. When students are unable to succeed in the classroom, they lose interest motivation with ever increasing tardiness.

EWDJT applicants often ask the following questions. Can instructors be successful with large disparities in the classroom? Can underserved youth work and learn with older mature participants? What about classroom diversity? Student disparities may include age, education, cultural disparities, and even criminal background or gang affiliation. Discussions at [All-Grantee Meetings](#) have focused on this issue and its impact on student

recruitment, assessment, and training. In most cases, while classroom disparities may make training more difficult, disparity issues can be overcome. In many cases, diverse classrooms provide a positive learning experience with mature students mentoring younger, less experienced students. Peer-to-peer training often occurs with strong students assisting those having difficulty understanding instructional material. Students that develop bonds help each other, build teams, and teamwork promotes a motivated cohort.

Unfortunately, employer hiring policies can greatly inhibit placement regardless graduate performance, credentials, or motivation. Employer restrictions which could influence student assessment relates to physical attributes, drug use, and past criminal behavior. While unrelated to training delivery, placement issues are created by employer policies. Due to the nature of certain jobs, physical attributes may determine the acceptability of a candidate for employment. For example, when lifting is involved many employers require job applicants to be able to lift a minimum of fifty pounds. When students are required to wear respirators, physicals are mandatory to insure student safety. The relationship between physical constraints and curriculum development is the ability of EWDJT programs, when necessary, to provide training not dependent on physical attributes. In some cases, special programs need to be developed for those needing accommodations.

Another impediment to employment that impacts curriculum includes hiring restrictions associated with ex-offenders. In the case of secured and sensitive government facilities, ex-offenders have been excluded from employment. In other instances, hiring ex-offenders is acceptable with qualifications. Again, as in the case of physical constraints, curriculum and training can be developed for jobs where employers welcome or are indifferent to the criminal history of qualified employees. Many construction and

remediation employers find ex-offenders to be excellent employees. When criminal history is an issue, curriculum needs to be customized to provide training in occupations where students will be able to meet employment requirements.

Drug use among employees has become a primary factor in the dismissal of existing employees and hiring restriction for new applicants. Random drug testing incorporated into the training program and as a prerequisite for graduation can go far in mitigating drug use among EWDJT participants. While drug abuse training is not likely to end chemical dependency, EWDJT curriculum can emphasize the importance of being drug free when working with and transporting hazardous materials.

Life skills, remedial education, and support services as part of EWDJT training

Unfortunately life skills, remedial training, and support services while essential to EWDJT success are not supported by EPA. As previously discussed, when students are unable to successfully understand classroom instruction, they enter a downward spiral leading to failure. The objective of remedial education is to insure students are capable of understanding and successfully performing goals and objectives presented in the curriculum.

While proper applicant assessment can help identify when remedial training is necessary, some refresher instruction may be necessary to bring the entire classroom to a standard where program instruction can continue. For example, when training requires students to calculate the volume and flow of hazardous materials in a stream, a minimum understanding of math is required. It would not be considered remedial education for funding purposes to refresh the entire class in geometry and general math as it applies to the problem. Similarly, report writing of sampling

results would be considered part of the EWDJT curriculum. In cases where basic math and verbal skills do not exist, EWDJT grantees have been able to work with local community colleges and nonprofits to provide remedial math and verbal skills education.

While math and verbal skills are strongly correlated to student success, life skills influence the ability of graduates to secure and maintain employment after graduation. In the report, *Best Practices for Job Training Programs in Brownfields Redevelopment Initiatives*, EPA-funded Brownfields Job Development and Training grantees identified the following best practices for securing and maintaining post graduate employment:

- Teach participants how to complete a job application.
- Assist participants in completing a resume, stressing the importance of keeping it current.
- Conduct mock job interviews to develop skills.
- Stress the importance of attendance and punctuality- track student attendance.
- Develop specific plans to help participants improve skills and work ethic.
- Add attendance sheets as part of a student portfolio.
- Develop list of references during training experience.
- Provide general life survival skills.
- Stress manners, how to dress, and etiquette.
- Negotiate ways to clear or pay past traffic fines and other fines and civic responsibility.
- Improve communication skills; for example, ask student to explain why he or she should be hired.
- Reinforce that a positive internship establishes a solid foundation for future employment.

- Provide business structure into instruction.
- Incorporate civic responsibility into program activities.
- Stress drug testing in the program.
- Provide an understanding of liability for employer.
- Incorporate anger and conflict management skills into program.
- Send participant to multiple interviews to get practice and improve interview skills.
- Videotape interviews to provide feedback.

In recent years, the addition of financial literacy has been added to best practices of life skills training. As with remedial education, EPA does not support life skills training. Fortunately many leveraging partners exist that can provide life skills instruction including Workforce Investment Boards, financial institutions, and nonprofits such as Goodwill, the YMCA, religious, and re-entry organizations.

Another factor that leads to low student retention is the lack of attention to student needs. While it may not be possible to address many of the issues EWDJT participants face, recognition of their personal problems can go a long way towards improving student retention. Often Workforce Investment Boards, health, and human services organizations provide caseworkers and resources to address the following issues:

- Legal support and assistance
- Day care services
- Transportation to and from training
- Family counseling
- Competing time commitments
- Temporary housing
- Financial support

It is important (and a best practice) to work with the local workforce Investment Board and human service organizations to qualify

students that may be entitled to benefits and support services. Additionally, local companies, nonprofit organizations, and foundations offer stipends, legal aid, transportation, and services as leveraged partners. The relationship between curriculum and student support relates to the training schedule. Some EWDJT programs emulate the traditional workday scheduling classes from 8:00 AM to 5:00 PM. Others have found it necessary schedule evening and weekend classes to accommodate working students and single parents. When designing an EWDJT curriculum, consider training schedules as a critical element of the overall training program.

Additional considerations affecting curriculum development

Additional restrictions can influence EWDJT curriculum development in two ways. The first constraint relates to funding limitations on the type of environmental training EPA will support. The second is the availability of qualified local instructors to deliver the proposed training.

We have already discussed unsupported life skills training, remedial educations, and student support services. It should also be noted that due to funding availability, the EWDJT program primarily supports brownfields hazardous waste training. Grantees may choose to deliver a variety of environmental training and offer certificates based on employer needs in their targeted community but only with certain restrictions. While most training is likely to fall in categories that the EWDJT program supports, some may not. Air pollution remediation training, for example, is not supported. Like life skills and student support, training in this area can be delivered but must be funded with leveraged resources. Support from various EPA program offices is not fixed and may change from cycle to cycle. Here are this year's contributions from various program offices:

- Brownfields hazardous waste assessment and cleanup training, including petroleum cleanup training: \$3,900,000
- Solid waste management or cleanup training: \$10,000
- Superfund site cleanup and innovative and alternative treatment technologies training: \$20,000
- Wastewater treatment training: \$20,000
- Emergency planning, preparedness, and response training: \$20,000
- Enhanced environmental health and safety training: \$15,000
- Alternative energy technologies (e.g. solar installation training, training in the preparation of formerly contaminated sites for renewable energy purposes, etc.): \$15,000

It should be noted that the above categories are general in nature and that many courses and certificates will fit under one or several of the categories. Because the support from other programs is shared by all of the applicants, it is prudent to focus curriculum development in the area of hazardous waste with supplemental awareness training in other less supported categories. When EWDJT grantees are able to secure funds or leveraged support, they can supplement the curriculum as they wish.

The second consideration that may impact curriculum is the availability of qualified training materials and instructors. OSHA certificates and other credentialed training such as EPA's Renovation, Repair, & Painting (RR & P) require certified instructors with an approved curriculum. Approved materials and instructors may be certified on the federal or state level. When qualified training providers are not available, consideration must be given to revisions in the overall curriculum. With

nonregulated training, it is important that the instructor is knowledgeable and qualified to provide instruction. Training goals and objectives should be clearly presented with student tracking and procedures for pre- and post-test recordkeeping.

It is important that program administrators understand and verify that training and recordkeeping is administered in accordance with federal and state requirements. Locally, several types of organizations are usually available to provide environmental remediation, safety, and health training. Multiple trainers or organizations may be necessary to deliver a complete set of course offerings. Potential training providers include consultants, remediation firms, federal, state, or local agencies. Community colleges are excellent trainers as many already have established environmental degree and noncredit programs. Health and environmental agencies can provide expertise and training in specific topic areas including cleanup techniques and environmental regulation. The US Army Corps of Engineers (USACE) is a partner with EPA that has committed to helping communities prevent, assess, and safely clean up local brownfields. Representatives from USACE are often asked to serve on EWDJT advisory boards. OSHA Training Institute (OTI) Education Centers provide training and education in occupational safety and health for governmental staff and the private sector. With at least one OTI Education Center in each OSHA region, certified health and safety training consultants are available to EWDJT grantees.

When using consultants for training, EWDJT programs must comply with federal purchasing rules and regulations. Consultants and contractors must participate in a competitive bidding process involving an RFP and at least three vendor bids. Once consultants or contractors have been selected, they can assist

in curriculum development, facilities, and training schedules.

Incorporating safety and health in the classroom curriculum

It is essential that EWDJT programs train and promote safety and health standards in the classroom as part of the curriculum and after graduation. This is applicable whether the training is being conducted by program staff or a contracted trainer. EWDJT programs should be concerned, for the welfare of graduates, that appropriate safety and health procedures are being followed by employers. Many EWDJT grantees provide a list of safety and health rules for students. Both students and trainers are asked to sign and date this document stating that they agree to comply with all safety policies and procedures. Often environmental, health, and safety courses require students to provide a medical waiver or undergo a physical examination. Note that HAZWOPER and some other courses require program participants to sign a *Participant Liability Waiver and Release of all Claims* form. This is especially true if a self-contained breathing apparatuses (SCBA) will be used during the training.

Curriculum development is much more than providing a list of course offerings

The traditional approach of listing a selection of course offerings will not provide the results EWDJT grantees need to be successful in the specialized field of environmental workforce development and job training. Environmental job opportunities are hidden among traditional occupations. The demand for workers is specialized and variable depending on local development programs, economies and industrial history. Additionally, due to funding availability, leveraged resources must be found to deliver a comprehensive training program. All of these constraints must be considered in the development of a meaningful EWDJT curriculum.

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HMTRI is part of Eastern Iowa Community Colleges and has provided environmental workforce development technical assistance since the inception of EPA's Brownfields Initiative.

CONNECT notes presented represent individual opinions and ideas from Professional Learning Community participants and EWDJT grantees. They do not represent EPA policy, guidance or opinions and should not be taken as such.

For more information on HMTRI technical assistance services or to be added to our Grantee and Community Outreach Listserv, please contact Heather Ballou at hkballou@eicc.edu.



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