

Technical Note #5

Curriculum:
Creating multiple learning
opportunities

*"Collaborative Learning for Continuous
Improvement"*

*New York State Education Department
Workplace Education Project*

1994-97

7/7/95 DRAFT

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Appendices (to be completed)

Introduction

Overview

(To be completed.)

Self-Study (Before)

To prepare yourself for this discussion of "curriculum," jot down answers to these questions:

- 1. What does the term "curriculum" mean to you?*
- 2. What forms of curriculum have you used in workplace education programs?*
- 3. What process was used to select and/or develop those curricula?*
- 4. Which curricula have you found most useful? Why?*
- 5. Which curricula would you avoid using again? Why?*
- 6. What would a more-ideal curriculum and curriculum-development process look like?*

Chapter 1

"Curriculum" defined

Since the mid-1980s, "workplace basic skills education" has evolved from "ABE/GED-in-the-workplace" to "job-specific instruction" to a focus on a broader array of competencies which are transferrable to many situations which workers encounter.

With that evolution have come new definitions for the term "curriculum." In the "ABE/GED-in-the-workplace" approach, "curriculum" tended to be seen as pre-packaged, "off-the-shelf" textbooks typically used in ABE/GED classrooms. These texts often taught skills out of any meaningful context. Those that did try to be "contextualized" in some way normally could not -- because of their prepackaged nature -- be focused on the actual contexts learners faced on and off the job.

The second wave of curricula were the "job-specific" variety. These were an attempt to gear instruction to enable learners to perform specific tasks they faced on the job. In this case, "curriculum" tended to be more customized, weaving actual workplace thinking and communication tasks and work-related written materials into instruction. In some cases, the lesson plans and teaching materials used in these job-specific programs were assembled into curriculum "packages" adaptable by other practitioners.

More recently, a more process-oriented definition of "curriculum" has crept into workplace education from the reading and writing field, adult education, and related disciplines. This process-oriented definition might be phrased as follows:

"Curriculum" should be viewed not as "a set of workbooks" but as the process through which educators, learners, and other stakeholders continually (1) identify learning objectives, and (2) plan, implement, refine, and expand on a variety of activities to meet those objectives.

Such a perspective on curriculum is particularly relevant for workplace education programs -- like the "Collaborative Learning for Continuous Improvement" project in New York State-- which are

trying to operate in a high performance workplaces. This is because this way of viewing curriculum borrows from the TQM planning process of identifying customer needs, gearing work processes to meet those needs, and continually monitoring and refining those processes.

This perspective is also pertinent for those trying to integrate basic education into technical training and other organizational change efforts. This is because this perspective shifts the focus of attention away from "running a literacy class" to the creation of multiple learning opportunities. These learning opportunities might include not only traditional "classes" but other activities which enable learners to develop and practice the competencies they need. These "non-classroom" activities might include on-the-job mentoring, restructuring of work processes and editing of work-related documents to make them more accessible to all workers, and training of supervisors and trainers to enable them to encourage all employees to use their existing knowledge.

This broader view of curriculum is also in keeping with the logic underlying both the workplace needs assessment (WNA) process and the "learning organization" concept. This is because it positions learning as an ongoing, pervasive, core function of the organization, rather than as a series of occasional stand-alone classes.

This view of curriculum pushes planners of education, training, and related activities to figure out what mix of activities will enable all workers to participate actively in the continuous improvement of the organization and of their own lives. For creative planners, this is at once exciting and intimidating. Where does one start to get a handle on this and to reorient all employees to a new way of integrating workplace learning and change?

In the latter 1980s, a number of workplace literacy manuals were issued which suggested steps for creating curricula which were largely of the "job-specific" type described above. Elsewhere in the adult literacy field, practitioners have been developing curriculum-development approaches which can be characterized as "participatory" in nature, with learners given active roles in shaping objectives and learning activities.

This Technical Note is not a re-creation of those previous guides on curriculum development. Instead, it is an attempt to help

those responsible for planning workplace learning activities to borrow from various instructional approaches to create a system of integrated learning opportunities. These opportunities are designed to help stakeholders use "collaborative learning for continuous improvement" of both the organization and individual workers' lives.

The rest of this Technical Note is divided into three parts. It begins with a discussion of the why's and how's of setting clear, meaningful learning objectives. It then presents examples of learning activities-- taken from actual workplace education programs -- which readers might adapt to meeting various learning objectives. The Technical Note concludes with some pointers to keep in mind when organizing learning activities. Also included are Appendices which outline sample learning modules and resource persons and publications.

Chapter 2

Setting clear and meaningful learning objectives: Why and how

Why it's important to set clear objectives

Adult educators should know the value of setting clear objectives to guide our work with learners. How successfully we actually do this depends on the training, experience, and perspective we have; how much time is available to us; and whether the learners, funders, and others we work with are on the same wavelength with us about what objectives to focus on and how to decide those objectives.

Adult educators are often faced with a situation which doesn't support investment in setting of meaningful objectives. Often the learners we work with don't understand the value of taking the time to negotiate objectives; they instead just want to get on with the program and "be taught." Funders also often push us to aim at increasing learners' grade-level scores on standardized reading tests rather than to work with learners and other stakeholders to set learning goals which are more meaningful to them.

Experience in adult education settings -- in workplaces and elsewhere -- indicates that a process which continually involves learners, instructors, and other key stakeholders in setting clear, meaningful learning objectives can:

- Ensure that learning activities are "on target," responding to stakeholder interests;
- Increase stakeholder understanding, buy-in, and support vis-a-vis those learning activities;
- Provide evaluation criteria against which program success can be measured.

Workplaces adopting a "TQM" approach to management should understand the value of taking the time to set clear learning objectives. If we apply a TQM perspective to our workplace education and training efforts, we should place a heavy emphasis on

understanding our "customers" ("stakeholders") needs and gear our learning activities to meeting those needs.

How to aim at many objectives at the same time

Many different objectives

In fact, that is what the organizational and individual needs assessment procedures presented in previous Technical Notes attempt to do: clarify the needs of the organization and individuals and map out a range of possible activities to meet those needs.

Workplace educators who listen carefully to what stakeholders say they want from an education effort tend to hear a range of expectations:

1. Preparing for specific technical tasks: Some stakeholders have very specific, technical tasks in mind (e.g., understanding a new barcoding system, passing a safety test, participating in a technical training session) and hope that an education program will enable workers to handle those tasks.

2. Making the transition to a new workplace culture: In workplaces trying to shift toward a team-based management model geared to a customer satisfaction and quality, stakeholders typically want an employee education effort to help employees become more thoughtful and involved, able to understand the larger organizational picture, take on broader responsibilities and decision-making tasks, and participate actively in the continuous improvement of the organization.

3. Improving the quality of workers' lives: Many stakeholders feel a workplace education program should benefit workers personally by improving the quality of their lives on and off the job.

To illustrate how you might respond to such an array of needs, let's assume that your planning team has gone through a careful needs assessment and strategic planning process and found that stakeholders in fact have a mix of outcomes in mind. To respond, you agree that the company's larger education-and-training initiative will conduct four learning activities in the coming months:

- a "communications and problem-solving" course to help all workers understand the new "team management" system being introduced by the company, to participate actively in that system, and in particular to use problem-solving procedures to improve workplace operations;
- a "workplace health and safety" course to ensure a safe workplace and to comply with OSHA requirements;
- "career planning" workshops to help workers prepare for job promotions, further education and training, and/or retirement.
- a "shop math" course to help workers prepare for training in SPC, blueprint reading, and welding.

In your WNA and initial individual assessment activities, learners and other stakeholders will have given you specific suggestions about the content and format of those learning activities. They have also shown you what interests, prior knowledge, abilities, and needs learners would bring to those activities.

Integrating several objectives in a single lesson plan

With this information in hand, you can now get down to more-detailed planning for each course. For each course (or workshop series, etc.) you can go through a process to:

- Map out the broad goals for each course;
- For each session in that course, prepare lesson plans which identify. . .
 - more-specific learning objectives;
 - measures you will use to show whether you meet those objectives;
 - specific learning activities to meet those objectives;
 - any resources (materials and/or persons) required.

Note that, in an integrated curriculum, any particular learning activity might aim at several objectives at once. A session in a "workplace health and safety course" might help learners achieve a number of job-related and personal-development objectives:

*Possible objectives
for a
"workplace health and safety course"*

Participants will . . .

- (1) analyze the causes of existing safety and health problems,
- (2) map out solutions to those problems,
- (3) practice particular literacy skills (e.g., understanding written safety labels and ergonomic procedures and recording information related to on-the-job accidents or health problems),
- (4) produce worker-generated safety guidelines which the company might adopt,
- (5) practice speaking up in team discussions related to health and safety, and
- (6) increase their interest in ongoing learning, workplace improvement, and personal development.

In your lesson planning, you will need to work with technical trainers, participants, and others to clarify a range of appropriate objectives and weave corresponding activities together so they are mutually-supporting and stimulating.

Agreeing on how you'll monitor what is being achieved

While clear objectives are vital, you must also be sure you have ways to determine whether those objectives are being met. For each objective, ask fellow educational planning team members to think through how you will monitor progress toward those objectives. Here are some ways of monitoring progress:

- Within the classroom, you might establish portfolio assessment systems for each learner, in which learners collect evidence of their work (including sample writing and math exercises, quizzes), keep a log of what they are learning, and so forth.
- Teachers and trainers might keep logs about each session, summarizing what was accomplished and how it might be improved next time.
- You might set aside time in educational team meetings to discuss "how are we doing" and give feedback to instructors and other stakeholders.

- Supervisors and union stewards might be interviewed informally or participate in focus groups to give feedback to the planning team.

Creating a flexible framework

While it is important to try to have broad goals for the various courses mapped out in advance, as well as a good number of specific lesson plans to get the course/workshops started with, it is important not to be too rigid and "set objectives in concrete" prior to starting the learning activities. While it might be comforting to feel as though you know exactly what you are going to be doing in the course ahead of time, be careful. You are in danger of violating the principle of "continuous improvement" if you aren't willing to alter your objectives and activities in light of evidence which emerges once the learning activities get underway.

A true "continuous improvement" approach requires you to be in continuous dialogue with your "customers," continually asking them "how are we doing?" and being open to new needs and suggestions for how to make the activities more relevant and efficient. Note that these concepts of "continuous improvement" and "serving customer needs" should sound familiar to adult educators who advocate a learner-centered, participatory approach to adult learning.

This approach to ongoing needs assessment, curriculum design, listening to feedback, and further curriculum design might be thought of as an inverted "spiral." We start off with a small set of needs, implement activities to meet them, then identify additional needs and expand on our original activities in response. (Source: ABC CANADA.)

This curriculum model is an "integration" of concepts and practices from two sources: the "continuous improvement" approach to organizational development and the participatory approach to contextualized adult basic education. As such, it provides a process and language which both adult educators and workplace change agents can feel comfortable with.

Chapter 3

An "integrated" curriculum: How to develop multiple learning opportunities

If we see curriculum as an ongoing process of continually identifying learning needs and objectives, and then creating, carrying out, evaluating, and building on those activities, then each workplace education/training/development initiative will be unique in the objectives and activities it sets for itself.

One site might, for example, have the resources and need to only focus on helping a small number of employees pass a particular safety course required by the state. Another site might have a more-extensive series of learning activities in mind, to be carried out over several years, to help the company make the transition from a more-traditional assembly line system to one oriented to teamwork and continuous improvement.

As mentioned above, those faced with the task of integrating basic education with technical training and organizational change tend to run into a number of needs. These include preparing employees for specific job tasks; helping workers shift to a new, "high performance" way of doing work; and improving the quality of workers' lives on and perhaps off the job.

Under more-traditional views of workplace education, these needs might appear to be at odds with each other, especially when time and other resources are limited. Some might argue, for example, that a workplace education program should by definition focus on improving the workplace rather than on the personal development of participants.

However, recent experience in the field suggests that such multiple goals are a valid expression of the complex stakeholder interests represented in most workplaces. This new thinking sees these varied goals not as contradictory and mutually-exclusive but as potentially mutually-reinforcing focal points for learning.

In this perspective, workplace educators should use a "high performance" approach and keep focused on what their "customers" want and creatively borrow best practices from various sources to help customers meet their needs. Those with a background in literacy education might, for example, borrow instructional techniques and materials developed by vocational educators -- and vice versa.

Shown below are five case studies (some of whose names have been changed) in which workplace educators have worked with technical trainers and others to integrate a number of learning activities to meet a number of goals. Imbedded in these cases are "best practices" which readers are invited to adapt to their own unique situations.

Case study #1: Handling toxic chemicals at Dynamics Laboratories

Peter, the technical trainer and human resources director at Dynamics Laboratories, needed to introduce a new system of recording disposal of toxic chemicals. He and Carol, the basic skills instructor, decided to coordinate basic skills and technical training activities in these ways:

Coordination prior to technical training

Carol and Peter reviewed the documentation procedures which Peter wanted workers to master, looking for the basic skills imbedded in those procedures. They found that employees would have to match numbers, copy names, and state causes. They also noted that much current documentation in the plant was done quickly and incorrectly. Interviews with employees showed that employees sometimes did not understand what the paperwork was actually used for. Using this research, Carol began to focus on the above competencies in her basic skills class. Learners brushed up on the names of chemicals, scanning skills, and other necessary skills.

Coordination during the technical training

Once Peter's training got underway, he and Carol coordinated plans for their respective lessons so that they were working on similar skills at the same time. Carol incorporated content from Peter's class, while Peter paid more attention to reading,

writing, math, and oral communication tasks required by the technical procedures he was teaching.

Coordination after the training

Peter's technical training course lasted only a few weeks. Carol's is ongoing, and she has continued to reinforce the new documentation procedures in her class. Learners bring in examples of documentation tasks from their jobs, and they work on them as a group.

Case study #2: Financial planning at Action International

Action International conducted a workplace needs assessment with the help of educators from the local community college. The educational planning team found that employees needed help developing the skills and knowledge required to plan for their futures within and outside the company. The company set up a course in which employees practiced reading, writing, and math skills in the context of analyzing the annual review system and how promotions were given.

Learners identified financial planning as particular interest. They felt they had no background in this area and needed help to understand the stock options, insurance, and retirement plans being offered by the company. The company agreed that this was a need, as the human resources department was frustrated that many employees appeared not to fully understand these opportunities or to take much initiative to use them properly.

The curriculum developer worked with workers and the human resource manager on the educational planning team to review the financial planning package and figure out what was blocking employees from understanding and using the system. The result was a course which looked not only at the immediate tasks (e.g., decisions about stock options, filling out forms, etc.) required by the company's benefits package, but at larger issues of the world economy, the company's role in that economy, why workers need to be pro-active in planning for their future, and so forth. Learners also strengthened not only traditional basic skills of reading, writing, and math, but other SCANS competencies like "self-management," "understanding systems," and "acquiring and evaluating information."

The 40-hour course was reinforced by the company through the involvement of the human resource officer. She served as a resource person and lecturer, helping learners understand how to make decisions related to insurance and other financial planning questions.

This integrated effort had the following results: the company felt its efforts to improve its benefits system had the desired outcome for workers; workers felt more empowered to control their financial future; and the human resources department felt it didn't have to spend so much time explaining the benefits package to employees and helping them make decisions, fill out forms, etc. Those who participated took their enthusiasm back to the plant and now another fifteen employees have signed up for a similar course on their own time.

Case study #3: Cross-training at World Insurance Corp.

World Insurance Corp. wanted to help employees in its general services division to understand and become more active in the company's new "quality team" initiative. Under that initiative, all employees were to work in decision-making teams to continually take responsibility for improving the quality of services it provided to its external and internal customers.

General services employees included workers in the photocopy, shipping, and mailroom departments. The company realized that, although it had given considerable training to its "white collar" employees to help them make the transition to "quality teams," little had been done for general services employees.

The company hired a basic skills instructor to design and carry out a course which would help selected general services employees to (1) understand the new direction the company was taking, (2) develop the basic skills (e.g., documentation, oral communications, memo writing, math) required by their current jobs and possible future jobs, and (3) prepare themselves for possible future job promotions.

Alex, the instructor, reviewed company documents and interviewed the human resources director to clarify the

company's history and future directions. He then analyzed general service employees' current jobs and other jobs they might want to move into. He interviewed supervisors and workers to clarify what obstacles they were facing in their current jobs and to identify what they might like to do in the future. From these investigations, Alex developed an outline for a 12-week course and a number of lesson plans to get started with.

Wanting to ensure relevance of the courses and transfer of what was learned back to the job, Alex enlisted the supervisors from photocopy, shipping, and mailroom to serve as his "assistant facilitators." These supervisors took turns helping out in classes, giving feedback to Alex about what occurred in the classes along with ideas for future sessions. The supervisors took groups on tours of their departments, where learners interviewed co-workers and collected information to analyze how to improve work operations. The supervisors also fielded questions and clarified information raised in the classes and took part in role plays. Alex and the supervisors also considered how the various departments could restructure work meetings, rewrite job documents, and otherwise make the workplace more conducive to learners' use of the new quality team ethic and skills they were developing in the course.

To further reinforce the connection between the classes and the workplace, learners developed action plans which analyzed particular job problems and recommended concrete corrective actions. These plans were submitted to their supervisors and department heads with the understanding that the plans would be considered in the reorganization of the various departments.

Learners also did some planning for their own personal development. They analyzed the knowledge and skills they already had gained in various life contexts (job, school, hobbies, family, etc.), identified possible career goals, and mapped out steps they would have to take to further develop their skills and otherwise move on to new career opportunities. They converted that information into resumes for future use. This activity not only helped them develop planning skills and self-confidence in what they already knew, but also helped meet a company goal of preparing all employees for possible job restructuring and downsizing.

Case study #4: Bar coding at Foamex Canada, Inc.

Foamex Canada, Inc. wanted employees in its shipping, receiving, and production departments to be able to use computers and laser scanners to bar code inventory items. Materials received from outside sources had to be scanned, given Foamex inventory control tags, and entered into a database. In turn, articles manufactured at Foamex had to be recorded in the database and then assigned computer-printed bar code tags.

A basic skills instructor from the Etobicoke Board of Education was asked to design a program which would help employees to understand this new system, feel comfortable with it, and use it efficiently. He first worked with the computer specialist to understand the system himself. He then talked with potential participants and found that many employees had never used computers or scanners before while some had computers at home and were familiar with similar technology. He also learned that some employees were not native speakers of English.

The instructor prepared a short, concentrated, and tightly structured five-hour program which was completed over three sessions. The sessions were sequenced to provide initial exposure to the computer system with simulations in the classroom and then applications and follow-up on the shop floor, as follows:

Introduction

- Oral and written explanations of the computer system in plain language, using technical documents edited for clarity by the instructor.
- Specialized vocabulary to describe computers and scanners.
- Abbreviations.
- Assigning of passwords.
- Practice logging on.
- Reading combinations of numbers and letters.

Simulations

- Hands-on practice at the computers, inputting codes, generating labels and reports, correcting errors.
- Specialized lessons for shippers.

Applications back on the job

- Learners use the system on the shop floor, with the instructor and computer specialist on hand for assistance.

Follow-up

- Instructor visits employees on the floor periodically to check on performance and give assistance if necessary.

(Adapted from ABC CANADA curriculum guide, pp. 35-36, permission pending.)

Case study #5: From a job-specific to "big picture" focus at CIMCO Manufacturing

CIMCO Manufacturing has committed itself to an extensive worker education and training effort, with the company providing technical training in blueprint reading, welding, safety, and other topics. For the past five years, in collaboration with the Toronto Board of Education, the company has offered ESL, math, communications, sign language, and other basic education programs.

Its ESL program initially was geared to specific language required on the job, relying on input from lead workers and production manuals and other job-related documents. Over the five years, however, the curriculum has expanded to include discussions of such "big picture" topics as company and industry history, the economy, the role of minorities, and the company's shift toward Just In Time and other innovations.

The company training coordinator, a union member, has worked closely with the basic education instructor to design and support the courses and keep them relevant to the changes going on in the company. The communications course, for example, has focused on the written and oral skills required to participate actively in team meetings: taking minutes, summarizing information, making group decisions, etc. The math refresher course emphasized various skills required for the multiple-function problem-solving which goes on in a team production system. These skills included use of fractions, costing, and measuring.

Through this evolving series of learning activities, learners not only gained in terms of personal development but developed basic skills needed to deal with changes in their current jobs and to participate in technical training programs.

(Adapted from ABC CANADA curriculum guide, pp. 44-45, permission pending.)

Chapter 4

Miscellaneous pointers

Using a holistic approach to learning, broaden the concept of "basic skills" to include SCANS competencies.

A "holistic" approach to basic skills education holds that "basic skills" should not be taught in isolation from each other or in isolation from real, meaningful, contextualized uses. Rather, educators and learners should remember that -- in the real world -- reading, writing, oral communications, problem-solving, math, and other basic skills tend to be used concurrently to perform particular tasks. Instruction should therefore reinforce such integrated use of skills by giving learners practice in using them in natural ways to accomplish authentic, meaningful goals (like writing letters to relatives, looking up sports statistics, and so forth).

Traditionally, the "basic skills" dealt with in most school and adult education instruction have been limited to the above range of functions. The advent of SCANS has, however, challenged educators -- particularly those working in workplace education settings -- to expand the list of skills (or competencies) which learners might need to develop.

This is at once exciting for adult educators and perhaps a bit overwhelming. It is exciting in that SCANS reinforces the holistic notions of learning a number of "skills" together and of learning those skills through meaningful application. The challenge which workplace educators might feel, however, is summarized in the following two-part question:

How do we figure out which of the broader SCANS competencies we need to focus on most in our workplace programs? And how -- with the limited time we have -- do we respond to additional skill needs when it's hard enough just to deal with the traditional core skills?

The remainder of this chapter provides some ideas which might help you answer those questions. The "pointer" immediately below suggests ways you can clarify what competencies to focus on.

Subsequent pointers discuss ways of integrating several learning objectives in one or more learning activities, including various kinds of problem-based activities particularly relevant for employees in organizations emphasizing teamwork and "continuous improvement."

Continually inform yourself about the tasks learners are trying to master and the skills imbedded in them.

There are a number of ways basic skills educators can inform themselves about the learners' world of work and the tasks and skills they need to master. In addition to using the results of upfront workplace needs assessment and individual needs assessments described in previous Technical Notes, on an ongoing basis you might:

Sit in on technical training and other workplace meetings to become familiar with the topics dealt with in those meetings. This helps you clarify how people communicate around those topics (e.g., in written manuals and memos; in lectures; with charts, graphs, and numbers). In turn, you can identify the range of competencies required to participate actively in workplace meetings and operations.

Invite technical trainers, supervisors, union stewards, and other resource persons to sit in on and help with basic skills sessions. These resource persons can inject useful information into your sessions and give you feedback about what areas to focus on in future ones. (This also gives you an opportunity to give those resource persons feedback on how they might restructure technical training sessions, team meetings, and other workplace communications to enable your students to use them effectively. You might also suggest that your students be matched with mentors or "buddies" who can provide guidance and moral support back on the shop floor.)

Ask learners for input. Establish mechanisms -- classroom feedback sessions, individual portfolios, individual counseling sessions -- in which you invite learners to give you feedback about what you need to do to keep the learning activities relevant. Encourage them to bring in problems, tasks, materials which they'd like to deal with.

Look for opportunities to "overlap" and "integrate."

A recurring theme in this guide is "integration," finding ways to merge or combine a number of separate resources and activities to create a system of mutually-reinforcing elements. In an integrated workplace education/training/change initiative, several types of variables can be integrated, including:

*Items to integrate
in an integrated initiative*

- Various kinds of learning objectives
- Basic education, technical training, and other workplace change efforts
- Roles of stakeholders in the change process
- Components of the cycle of education program development

Here is how these items can be merged:

Integrating various kinds of learning objectives

An integrated effort can weave a number of kind of objectives together, including:

- Basic skills and technical skills can be developed concurrently, in ways which are mutually reinforcing and which in turn support other organizational change activities like work restructuring, introduction of new technologies, etc.
- Organizational improvement goals can be achieved at the same time that learners pursue personal development objectives.
- A number of basic skills (e.g., reading, writing, problem-solving, math, oral communications) can be developed together rather than separately (in keeping with research in how people learn).

This integration of objectives is done for a number of reasons, including (1) efficiency (maximizing the impacts of limited resources) and (2) ensuring actual use of what is taught (helping all stakeholders to get involved in helping learners to actually use what they are learning).

Integrating basic education, technical training, and other workplace change efforts

In an integrated effort, educators, trainers, learners, and other stakeholders need to be creative and take the time to figure out how to use education, training, and other organizational improvement activities which are, on one hand, mutually reinforcing while, on the other, not overly redundant. They need to see how a number of objectives can be approached in different ways. For example . . .

Within a single learning activity: In a basic skills session learners can practice a number of basic skills while mastering one or more technical procedures.

Across a number of learning activities: A basic skills session and a technical training session can concurrently provide opportunities for learners to develop the same range of skills, but with different emphasis in each session, depending on the particular needs of the individuals involved.

Within other organizational improvement activities: Those in charge of writing workplace documents, setting up work stations, running team meetings, or other workplace innovations should do so in ways which create a work environment conducive to effective use of worker abilities. A densely-written safety notice or benefits plan makes it difficult for employees to apply the knowledge and skills they already possess to effectively use those documents. Work stations which are not stocked with the resources needed or team meetings which are poorly run similarly don't make good use of human resources. Those in charge of managing workplace innovations must factor in not only at the technical requirements of those innovations but the social side as well. By so doing, they will be able to achieve a number of technical and social objectives at once and reinforce the skills which are being practiced in basic education and technical training sessions.

Integrating the roles of various stakeholders

Traditionally, adult basic educators, learners, technical trainers, managers, union representatives, and supervisors tended to have discrete roles. An integrated effort requires these stakeholders to

rethink those roles and see how they might share functions or otherwise take on new roles. A learner might, for example, become a resource person or peer teacher in a class. A supervisor might be asked to help with curriculum development or as a resource person in the basic skills class. This blending of roles will likely require some extra preparations and a more flexible mindset for many stakeholders, but it will be necessary if an integrated effort is to effectively tap into the knowledge represented in the organization.

Integrating the components of the cycle of education program development

Traditionally, the various components of a basic education program -- needs assessment, staff development, curriculum design, implementation of classes, program evaluation, etc. -- have often been seen as separate functions done in sequence by different people. An integrated effort requires a closer "fit" among those activities and in many cases requires them to be carried out by the same group of people to ensure that fit. These activities also need to be ongoing and feed into each other rather than be structured as one-time, separate activities. Individuals' needs, for example, need to be assessed not only at the beginning of the program but continuously. Results of those assessments need to be fed to those planning the learning activities, so they are kept on target. Curriculum development is thus not a one-time thing done "up front" but an ongoing responsibility of all who want to ensure that learning activities produce useful results.

Consider problem-posing and action-planning around authentic situations.

The emerging workplace is putting greater emphasis on having all employees take the initiative to identify and solve problems. Rather than assign "thinking" roles only to "managers," the new workplace requires active decision-makers.

These changes are creating a context in which it is useful for workplace educators to structure their activities -- in the classroom and out -- in a "problem-posing" mode. The term "problem-posing" refers to an orientation which assumes that the act of identifying problems to be solved is itself important. It is important because it forces those involved in an activity to analyze a situation critically and take responsibility for identifying the focal points for learning.

"Problem-posing" is more than "problem-solving". The latter is the act of analyzing causes and possible solutions for problems and then taking action to solve those problems. "Problem-solving" by itself leaves out the first step, however, of "identifying or "posing" the problems to be solved. In a problem-posing approach, the learner takes on greater responsibility for the process, by not only solving the problem but identifying or naming the problem to be solve.

In a workplace which emphasizes worker decision-making, workplace educators can structure what goes on outside the classroom -- especially the needs assessment activities they carry out with other stakeholders -- as "problem-posing" activities. That is, such needs assessment activities can be structured to continually challenge stakeholders to ask "What is it that needs to be done here?" and "How can we improve this situation?" Stakeholders involved in program planning are thus put in the same "problem-posing/continuous improvement" mode learners will be asked to adopt in the classroom and back at work.

In the classroom, learning activities can be structured as "action-planning" exercises, as "class projects," or in other ways which have learners first identify a problem or question they want to resolve. Then, through research and analysis, they develop recommendations or other tools for solving those problems.

For example, for one problem-posing activity in the World Insurance Corp. program described earlier, learners identified a number of problems in the mailroom. They selected one of these -- an inefficient conveyor belt which carried the sorted mail from the mailroom up to the appropriate floors in the building -- as a problem they wanted to tackle. They brainstormed a number of causes for the inefficiencies, recording their findings on flipcharts. Contributing factors included breakdown-prone parts and an officious, uncooperative, and inefficient repairman. From there the learners mapped out a number of possible ways of dealing with the causes and eliminating the problem. Using the flipcharts as a record of their discussion, they summarized their analysis and proposed solutions in a succinct action plan which was then presented to their department head.

Most workplaces -- especially those which have adopted some version of total quality management -- have some kind of problem-solving method in place. A problem-posing version of such a process might contain the following elements:

***How to organize learning
as a problem-posing activity***

1. Identify the problem/question.

- *Learners identify a range of possible problems or questions to focus on.*
- *Learners decide which problem/question to focus on next (How immediate and interesting is the problem? Is it something they can do something about? Is it too "hot" to touch?)*

2. Describe the problem.

- *Learners get more specific, identifying "symptoms" of the problem. (Don't allow learners to get away with defining the problem as "waste," or "inefficiency," or "unsafe working conditions." They need to be more specific and describe what it is they are concerned with.)*

3. Identify possible causes.

- *Learners identify various factors -- human and otherwise -- which contribute to the problem. (Try to get away from "personalizing" the problem too much -- assigning blame to particular individuals. Look for deeper, underlying, systemic causes for the problem, to encourage a deeper understanding of why things work -- or don't work -- as we might like them to.)*

4. Map out possible solutions.

- *Learners identify resources -- good ideas, best practices -- which might be used to deal with the various causes of a problem. (Often there are already a lot of good practices already in place in an organization. They just aren't being used properly.) Where a number of stakeholders share responsibility for a particular problem, be sure to identify appropriate actions which each stakeholder group can take. This spreads the responsibility around, making it more of a team effort rather than focusing all of the blame or responsibility on one party. Be sure to be realistic and not*

ask the impossible of anyone. You might break actions down into chewable bites, starting off with more-immediate "next steps" and then pointing to longer-term actions.

- *Learners review their list of actions which various stakeholder groups might take and choose which of these possible corrective actions to recommend. The group then weaves those actions together into a set of shorter-term and longer-term recommendations, possibly organized according to the stakeholder groups responsible for those actions.*

- *To be consistent with a TQM approach, learners might also identify how they would monitor those activities, to determine whether they are being implemented effectively.*

5. Present the action plan and follow up.

- *The group presents its action plan to appropriate audiences. These might include the education planning team, representatives of the union or management, fellow workers, or other individuals or groups. Reports might take the form of written documents (including brief executive summaries), oral presentations (with flipcharts, several speakers), articles in the company or union newsletter, posters, slide shows, or other imaginative formats.*

- *Once recommendations are presented, learners should be ready to listen to the audience's response and negotiate actions which all can agree on. Once those actions are decided, learners and other stakeholders should follow up and be sure that the actions are in fact carried out properly.*

How does this relate to "basic skills education"? Such a framework provides a purpose for learning as well as meaningful "hooks" to attach practice in various basic skills to. Brainstorming, for example, gives participants practice in oral communications. When recording responses on flipcharts, learners use listening, clear-writing, and reading skills. In fact, within such a framework, learners can practice the broad range of competencies outlined in SCANS and similar reports about the skills the modern workforce needs. This framework is also consistent with holistic views of how people learn, using a number of skills concurrently and in mutually-reinforcing ways.

In an integrated workplace education/training/change initiative, such a problem-posing approach provides learners with a way of approaching organizational improvement which they can

apply in many different situations they face on and off the job. It thus helps learners see learning as relevant, and encourages them to use what they are learning in many different situations. Learners thereby continually get in more "time on task" using their skills, thereby reinforcing their skills and producing real change for the learners and organization.

Consider alternative delivery modes.

Avoid getting locked into the traditional "academic" assumption that learning can only occur in a "class." To foster continuous learning and to make learning accessible to learners with various interests, time schedules, and so forth, consider the following as some of the multiple learning opportunities an integrated initiative might use:

Learning center: A well-stocked resource room might provide reading materials, computer-learning stations, a coffee pot, and good lighting and comfortable chairs. Learners can use these resources to do homework, try out educational computer games, read the newspaper, and generally take the time to devote to learning, time not otherwise available.

Individualized tutoring: Some learners might -- due to time schedules, special needs, or a preference for privacy -- benefit from private tutoring sessions with an instructor or perhaps a volunteer from within or outside the organization.

Special workshops: Some learners might not have the time to devote to a longer-term "class." They might, however, be willing to take their learning in smaller "chunks." You might, for example, have special, well-organized workshops on specific topics, perhaps with follow-up projects which enable learners to practice what was covered in the workshops.

Study circles or special-interest clubs/groups: Learners with particular common interests (e.g., preparing for a particular trade exam, becoming comfortable with computers) might work apart from the larger basic skills class to do focused work together and perhaps with input from other resource persons in the organization.

Individualized counseling: Some workers might not be interested in participating in a basic skills program but might benefit from academic and career counseling. Such sessions might help them to define personal learning goals and map out options at local educational and training institutions as well as other less-formal learning opportunities (e.g., libraries, videotape series, computerized learning programs, etc.)

Brown bag lunch series: The organization hosts a series of regular lunchtime presentations or debates on topics of interest to learners. Learners would be invited to participate as speakers and audience members. The issues covered might be woven back into classroom learning activities.

"English only" lunch table: Participants in a workplace ESL program eat lunch and converse with native-English-speaking coworkers at a lunch table designated "English only."

Learning logs: Learners keep a log (journal, diary) of what they are doing with the knowledge and skills they are learning in the classroom. They note problems, accomplishments, questions, ideas which emerge from their attempts to use what they are learning. This helps learners to become more thoughtful learners, conscious of the need to practice. They also develop their willingness and ability to write. They can include all or part of their logs in their individual portfolios, and instructors can -- by reading and replying to the logs -- provide learners with an audience and feedback.

E-mail: In many workplaces, learners are being asked to read and respond to messages posted on internal electronic mail systems. Learners can be shown in the classroom how to use that technology and then see their day-to-day use of it as an opportunity to not only communicate on the job but develop computer and communication skills useful in many other contexts.

Work projects: In the classroom, learners as individuals or in "project teams" can plan various kinds of projects they might carry out back on the shop floor. They might, for example, observe and record particular types of information found on workplace documents or machines. They might interview coworkers to elicit their views on a particular set of issues. Back

in the classroom, the learners can then prepare reports or recommendations based on their findings or take actions on their own to carry out a particular action which would benefit the organization and/or individuals.

Create incentives for learning.

Learners need to be encouraged to use what they are learning in the classroom and to recast themselves as thinking, active problem-solvers. This can be done through restructuring of jobs and training to provide workers with opportunities and incentives to use what they know. This, in turn, requires the cooperation of supervisors, team leaders, and co-workers, as well as the creation of clear financial incentives for learning (e.g., tuition assistance, release time, and promotions, bonuses, and pay increases for demonstrated improvements in skill and use of those skills). Without such opportunities and incentives, "learning" is likely to be viewed by all as an academic exercise which -- while nice in many ways -- doesn't put bread on the table.

Consider a range of possible learning materials and situations.

Workplace educators are often naturally attracted to pre-packaged learning materials. These materials are produced by vendors who attempt to predict an adult education need and create exercises and readings which an instructor can use to meet those needs. Such materials have the potential advantage of reducing the amount of preparation time for an instructor: rather than start from scratch and design activities and create materials, the instructor has something ready-made and easy-to-use.

In reality, these materials vary considerably in content and quality. Some are excellent, designed according to good research about what adult learners need and how they learn, written clearly and with good graphics, and so forth. Some are of lesser quality or at least not focused on the skills you hope to help learners develop. Using the inappropriate materials might end up distracting learners and actually making it harder for them to learn, thereby costing you more in terms of learner interest and wasted time than if you took the time to develop materials yourself.

Another option is "authentic" materials taken from the workplace and other contexts. As seen in the case studies presented earlier, these might include technical manuals, union documents, pension plans, computer screen displays, newspaper articles, and recipes.

In addition to using authentic printed materials, consider using "authentic situations." These are actual or simulated situations in which learners have to solve problems or otherwise use knowledge and skills to accomplish something of value to them. To help learners connect what you're trying to teach to the real world, build such authentic situations into role plays and problem-solving situations in the classroom. You might even bring the classroom out into the workplace by going out on the shop floor and having learners demonstrate how they would handle particular situations.

Respond to stakeholders' interest in "learning computers."

When asked what they might hope to accomplish by getting involved in a workplace education program, stakeholders (including managers, learners, and union representatives) often cite "learning how to use computers" as a goal. They explain that workers tend to be curious about how to use the computer technology which they see all around them in the workplace, in their children's schools (and perhaps in their homes), and elsewhere in society. They see a basic skills program as a vehicle for developing the skills they'd need to become more familiar with basic computer functions and to go on for more-advanced computer training.

In some cases, however, funders forbid using "basic skills money" for what they regard as "computer training." Some practitioners, however, see exposing workers to basic computer functions as an opportunity for helping learners develop basic skills and an interest in ongoing learning, as well as a familiarity with new technologies. Because these all fall under SCANS competencies and because learning them in an integrated way makes sense from a holistic learning perspective, many practitioners have begun finding ways to merge basic skills education with "intro-to-computers" training.

Here are some examples, in the words of practitioners:

"Computers" example A

. . . I operated a mobile training lab for workplace training for three years . . . Our funding source had very narrow ideas relative to basic skills, causing us to document the relationship of any other activities to the basic skills needs of the employees . . .

Those who funded our program saw basic skills as reading, writing, and arithmetic. Any other skills were advanced skills. We supported the need for the other skills on the basis of recruitment. That is, if you offer other skills, then the lab is not viewed as only for those who are "stupid" (the word used by some of the participants), but as a place where you go to learn.

This concept was important for the ongoing success of the program. Many of the employees came ostensibly to learn computers and ended up learning to read, write, and do math, including the manager of one of the plants.

Most of the students wanted to learn wordprocessing, database, and spreadsheet (in that order). We had a few who wanted to learn desktop publishing and even fewer that wanted to learn to program. We had computer-assisted instruction programs for the first three groups, and I tutored the students in the others, because I had the background to do so. (If we hadn't had someone with the background [myself], those other subjects would not have been taught. In the nearly two years since I left the program, the only subjects taught are the ones that have the CAI to do it.)

We also had a typing tutor program that was very popular. We used it with our beginning students (minimal readers) to help them learn the alphabet and to type at the same time. We then had them learn a basic word processor to be able to write lessons on the computer, which helped to legitimize the use of the computer skills to the funder.

We found that we could weave the use of computers into the teaching of basic skills and, thereby, to accomplish two basic skills needs: the need to learn to read, write, and calculate, as well as the need to perform basic work-related (tasks) requiring the use of computers. This melding of the computer to basic skills training served the function of improving the individual's employability without reducing her/his self-esteem. It became easier to get them to attend because they didn't have to admit a literacy problem, but simply a lack of computer skills, which was socially acceptable.

We used a two-pronged approach to support our use of computer training in the program:

- 1. Computer training improved recruitment by providing a socially acceptable reason for attending classes ("I'm taking computer courses" as opposed to "I'm learning to read.") We had management sitting beside hourly workers, making it socially acceptable to attend the classes.*
- 2. We used the computer training to teach the basic skills. From typing and wordprocessing, students learned to read and write. From spreadsheets, students learned math skills. Databases taught them to use structured reasoning. This integration (justified for the funder our) using the computer.*

After the initial shock that we were teaching something beyond what they classified as basic skills, the funder never had a problem with what we were doing. We also used the (success of the computer lab) to raise other funds from the businesses that we served, helping the program to be more cost effective (Communicaitons with Bob Folden, East Texas State University, June 13, 1995).

"Computers" example B

. . . I worked with four manufacturing companies in developing and implementing workplace education programs. There was an overwhelming interest in basic computer skills courses we were providing. . . .

We provided a basic introduction to computers: what they are, how they work, basic terminology . . . to diminish some of the mystery and apprehension that many of the employees felt. We then designed basic lesson plans to provide employees with hands-on practice -- from turning it on, using the keyboard, using the mouse, navigating through a basic tutorial, to shutting it down.

We then put some basic skills software on the computers and supplemented the basic skills with classroom activities and computer activities. We also used wordprocessing software, spreadsheet software, etc. . . . to augment classroom activities.

Students soon were creating graphs, charts, memos, reports, and production schedules on their own time to enhance their classroom assignments.

Supervisors commented about the increased enthusiasm employees had toward the new machines . . . and computers placed on the floor.

. . . We had no problem combining basic skills lessons with the applications on the computers, as most of the companies would soon require or did require employees to interpret computer screens or use computers to set up machines and/or communicate with other departments and shifts.

Computers call for many of the same skills (required in other) contexts. For example, scanning a document on the computer screen may require a combination of the same reading skills necessary when scanning a written document. And, of course, there are many problem-solving skills necessary in using a computer.

Our funders were not (originally) supportive of teaching computer skills (per se), but as we used them to . . . augment work in the classroom and teach the basic skills necessary for using a computer, we found that our funders didn't object to the program and the companies were happy with the results.

. . . This was an exciting use of the basic technology available at that time. It helped with recruitment and retention, and the companies all kept the computer learning labs staffed after the funding ran out. (Source. . .)

"Computers" example C

. . . We recognized that many participants in the basic skills class wanted to know more about computers. We set aside two class periods to allow the participants to meet in the office of the director of the company's computer services department. On the first day, in an informal crash course in computers, he explained the key components of a computer, showing them the "insides" of a computer under repair. He reviewed the functions a computer can perform, and learners described how they were already interacting with computers in various ways in and outside their jobs.

In the second class, participants tried out a number of programs. They looked up their 9-digit zip codes on a program from the U.S Postal Service. They tried their hand at the games in a typing tutor program. They located the phone numbers and mailing addresses of co-workers on the company's internal database.

In subsequent visits to various work stations, learners were shown the various computer technologies (eg., barcoding devices and package tracking systems in the shipping room, electronic scales and label makers in the mailroom, and

computerized copying machines and billing systems in the photocopy department). They also worked with me to put a resume on a computer disk, and discussed the idea of setting up a "computer club" composed of learners and co-workers with a special interest in computers.

"Computers" example D

. . . after getting a rudimentary introduction to computers, learners quickly wanted "functionality" with computers and thus we went to how to enter and retrieve information from a database, spreadsheet, and a word processor. I had no trouble working with funding agents when I included this instruction under the rubric of "basic skills."

I maintain that there is no more basic skill for today's workplace than the ability to enter and retrieve information from a computer

Pay attention to clear communication.

In your rush to plan and carry out learning activities, don't overlook such "basics" as:

Factoring in enough time for each learning activity. Learners need time to discuss issues. Don't try to cram too much into too short a time period.

Use clear language and graphics. Provide learners with clearly-written and well-laid-out materials appropriate to their background and skill level.

Self-Study (After)

Now that you've read the discussion of a curriculum model which combines "problem-posing/solving," "SCANS," "integration," and other "new ideas," consider:

- 1. Would the above model be feasible (and desirable) in the workplace(s) in which you will work?*
- 2. If you wanted to pursue this model, how would you adapt it?*
 - What topics/objectives would it likely focus on?*
 - Who would participate as learners?*
 - Who might serve as facilitators and resource persons?*
- 3. To create a curriculum relevant to your context, what steps will you have to take?*