The DACUM CURRICULUM DEVELOPMENT PROCESS

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DACUM is an acronym for Developing A Curriculum and is an internationally recognized job/occupational analysis technique that is widely used by industry practitioners, educators and consultants to effectively identify the duties, tasks, and related information required for a job/occupation. It also provides an excellent source of data for management decision-making, developing training program, human resource development, career planning, needs assessment, test development, job redesign, performance evaluations, and quality control planning.

How do you determine what will be taught in your education and/or training programs? Is there a gap between what is offered learners in the classroom/lab and what is going on in the real world of work? Many have estimated the learning gap to be 50% or higher in some programs. Regardless of your setting—school, college, business, industry, or government agency—determining what skills, knowledge, and worker behaviors will be taught is very serious business.

Without an accurate determination of content, two major critical and costly errors are likely to occur. Known as the “Curriculum What Errors” they include failing to teach what should be taught (the latest skills and techniques) and teaching what should not be taught (outdated skills and information). (Norton, 1997).

As one can imagine, both errors negatively and seriously affect the student or worker’s job preparation. This type of learning gap or inadequacy can jeopardize the individual’s employment, affect the company’s success, and even reduce the economic well-being of the community.

Fortunately, there is an effective, quick, and low cost process available for significantly reducing the “curriculum what errors” and to avoid “cheating the learner.” It is called DACUM (Developing A Curriculum).

How Can DACUM Improve Instruction?

DACUM as used widely today, is a unique, innovative, and very effective method of job and/or occupational analysis. It is also very effective for conducting conceptual and process analyses. The DACUM analysis workshop involves a trained DACUM facilitator and a committee of 5-12 expert workers from the position, occupation, or other area of analysis. The profile chart that results from the usual two-day workshop is a detailed and graphic portrayal of the duties and tasks performed by the workers involved.
In addition to the development of precise duty and task statements, lists of the general knowledge and skills, worker behaviors, tools/equipment/materials/supplies, and future job trends/concerns are also identified.

DACUM is based on three logical premises (Norton, 1997):

1. **Expert workers can describe and define their job/occupation more accurately than anyone else.** Persons who are working full-time in their positions are the real experts on that job. Even though supervisors and managers usually know a lot about their subordinates work, they usually lack the expertise needed for a high quality analysis.

2. **An effective way to define a job/occupation is to precisely describe the tasks that expert workers perform.** A successful worker performs a variety of tasks that either the customer or employer wants performed. Possessing positive attitudes and knowledge alone are not enough. Hence, finding out what the expert workers (top performers) do will give us the opportunity to prepare other experts.

3. **All tasks, in order to be performed correctly demand the use of certain knowledge, skills, tools, and positive worker behaviors.** While the knowledge, skills, tools, and worker behaviors are not tasks, they are enablers which make it possible for the worker to be successful. Because these four enablers are so important, considerable attention is given during the DACUM workshop to identifying lists of each. Because these attributes are different and distinct from the tasks, it is very important to keep them separate if a high quality analysis of job performance requirements is to be obtained.

**Why Use DACUM?**

DACUM has been used very effectively to analyze occupations at the professional, managerial, technical, skilled, and semi-skilled levels. It has also been used effectively to

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conceptualize future jobs, and to analyze portions (selected duties) of one's occupation. Recently, with the increasing emphasis on quality brought forth by the TQM (Total Quality Management), ISO 9000, and QS 9000 movements, DACUM also has been used widely as a basis or foundation for analyzing various industrial systems and processes.

There are many reasons for using the DACUM process. The success of any company or organization is always affected by the quality of its employees. To produce and maintain a highly skilled workforce, schools, colleges, and companies must offer the highest quality of education and training possible to prepare present and future employees for the challenges they face.

Accurate and specific job information is essential to good decision-making in all areas of human resource development and management. All of the approaches to quality improvement and management--TQM, ISO 9000, QS 9000, etc. require participating companies to secure and utilize precise and detailed information about their workers roles and responsibilities--work processes, systems, duties, and tasks. Job/occupational analysis is the best method available for collecting that type of information. And based on a lot of experience with education and industry, DACUM is, without question, the best means of conducting job/occupational analysis that is currently available.

Why is DACUM the best method? The excellent quality of the product obtained (results) and the superior process used (committee of 5-12 expert workers interacting) are but two of the many important advantages.

The DACUM methodology is widely used in the United States, Canada, and many other countries simply because it is:

- Highly effective
- Quick
- Low cost

The powerful combination of being very effective, quick, and low cost has made the DACUM process very attractive to many schools, colleges, companies, and government agencies. Another important reason for using DACUM has been and continues to be the strong desire of many trainers and educators to establish a relevant, up-to-date, and localized research base for curriculum and instructional development. Clearly, for educators a curriculum base that is soundly determined with maximum input from the businesses who are going to employ the students is needed. For business trainers and developers, a curriculum base is needed that is specific to the companies needs and that has been developed in such a way as to obtain strong employee buy-in.

To permit any company or educational agency to identify its own localized research base for curriculum development, an alternative to traditional, time-consuming, and costly approaches to job/occupational analysis was needed. DACUM has become that powerful alternative!

Once employers understand what is to be done via DACUM and how the results will be used, it is a rare employer who will refuse to cooperate. Instead, many colleges who have used DACUM report such reactions as the following:

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• Offers of equipment (loans and gifts) and supplies
• Offers to host field trips
• Willingness to provide subject matter experts
• Offers of supportive training materials
• Offers of resource persons to help teach in emerging technology areas
• Requests for inservice training programs to meet local industry needs
• Increased enrollments in adult upgrading programs
• Increased support of the educational institution in a variety of ways by local business, industry, labor, and management

While the public relations value of DACUM is secondary to its main purpose, its significant, long-term impact is too important to overlook or lightly dismiss. Linkages can be developed which, if properly nurtured can be long lasting and extremely beneficial.

Business needs to design new training programs quickly and effectively. The skills and competencies needed must be job or process specific, if they are to meet the company’s production and quality goals. Business needs highly job-relevant training and they must reduce the start-up time and cost for the design and delivery of programs. As one company reported, they cannot afford to spend 30 or more days on an occupational analysis if a two-day DACUM workshop can do the same job better and much cheaper.

Who Uses DACUM?

DACUM is used by:

International Agencies in over 40 countries have used the DACUM process for education and training program development and updating. User countries include: Philippines, Hungary, Jamaica, Canada, New Zealand, Venezuela, Turkey, Brazil, Malaysia, Singapore, and China. See Attachment A for a list of country users.

Business and Industry to do all kinds of human resource development and quality management decision-making. Many businesses and industries (hereinafter referred to as businesses) are using DACUM for job and occupational analysis as a basis for training program development, job descriptions, career development, job restructuring, etc. Recently a number of companies have been very successfully using the method with some adaptation to analyze job processes and systems rather than for the more common identification of duties and tasks. Dinah Chesson of Ericsson reports that, “DACUM has proved to be the most efficient and effective means for gathering pertinent job-related information for use in the company’s technical training and professional development programs. The internal Ericsson Wireless Communications Malcolm Baldrige Business Assessment Team recently cited the organization’s use of DACUM, in training development, as a ‘Best Practice’.” See Attachment B for a list of some company users.

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Educational agencies such as state departments of education, community and technical colleges and institutes, proprietary school/colleges, colleges of education and universities, and secondary schools.

How is DACUM Used?

DACUM has been and continues to be put to many uses. Some of the most common are presented here under three broad categories.

Management Uses:
- Re-design jobs
- Conduct performance evaluations
- Establish SOP’s (Standard Operating Procedures)
- Determine task value added
- Control competency development
- Input to quality planning ISO/QS9000

Training Related Uses:
- Identify training program competencies
- Determine task importance/difficulty
- Assess training needs
- Basis for developing training materials
- Identify performance standards

Human Resource/Placement Uses
- Develop job descriptions (ADA requirements)
- Conduct career planning and development
- Certify occupation competency
- Devise job classifications

Why is DACUM Unique?

DACUM is unique for several reasons when compared with the interview and observation and many other traditional approaches to job/occupational analysis. The combination of the power of the following features make it the most effective and highest quality analysis process available at this time.

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DACUM Advantages

- **Group interaction**—committee members freely share ideas and hitchhike on each others contributions.

- **Brainstorming power energized**—the brainstorming process is used several times to maximum advantage to identify all of the duties and tasks.

- **Group synergy**—properly facilitated, members of the group motivate and empower each other to produce a high quality product.

- **Group consensus**—members of the committee with the facilitator's guidance assess each contribution and refine it until agreement is reached.

- **Future-oriented**—the committee is specifically asked to specify future occupational trends and concerns that are likely to change their job in the future.

- **Employee/Learner buy-in**—once the employees and learners know that practicing expert workers identified the duties and tasks, support for the results of the analysis is greatly enhanced.

- **Comprehensive outcome**—when 5-12 expert workers are motivated and guided for two days by a qualified facilitator, all duties and tasks are usually identified along with the related general knowledge and skills, worker behaviors, tools and equipment, and future trends and concerns.

- **Superior quality**—it’s the combination of the features already mentioned plus the fact that whenever one committee member speaks the other (4-11) members who are well qualified to do so, assess and modify contributions so as to maximize quality.

- **Low cost**—because of the highly efficient procedures used, a DACUM analysis can usually be completed in two days rather than the 25-30 days required by some methods, thus greatly reducing the overall cost.

When the DACUM committee creates its own chart from scratch, the substantive involvement of the committee members usually results in very strong support and buy-in that cannot be obtained any other way. Committee members at the end of the two-day workshop frequently offer to donate materials or equipment to the program. Other types of contributions have included offers to help recruit students, to serve as guest speakers, to host field trips, and provide site-based learning experiences for apprentices and cooperative education students.

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Another reason why DACUM is particularly well suited for educational institutions and training agencies that are implementing or are planning to implement competency-based education (CBE) or performance-based training (PBT) programs is that the first essential element in any CBE/PBT program involves the careful identification of the tasks (which are usually referred to as the competencies to be obtained) upon which the instructional program will be based.

An additional benefit that is very important to schools and colleges is DACUMs public relations value to the educational institution or other agency doing the DACUM. Once employers understand the purpose and the process of DACUM, their first reaction is almost one of sheer shock when they realize that this school or college really wants industry to help them identify the competencies needed by workers in their field. So many employers are familiar with the “rubber stamp” role that they are so often asked to perform on ad hoc committees (and sometimes even on occupational advisory committees) that it often takes them a while to understand that this school or college is really serious about wanting industry to help determine what tasks students must be able to perform in order to make program completers valuable future employees.

Another important benefit mentioned by many companies is that DACUM defines the “as is” of the job. It identifies exactly what is going on in the job currently. One training manager of a large company reported, “This is critical information to have because in all the DACUM’s we have conducted - what the supervisors think the employees are doing and what the employees are actually doing were two different things. Once you have a clear understanding of what actually is going on in the job, then you can make logical decisions in regards to re-engineering or re-structuring the job.

In summary, DACUM works and works very well. Hence our motto – DACUM DOES IT BETTER. We hope you will give it a chance to work for you.

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