Implications for Technology Curriculum – Outcomes of a DACUM study in Tennessee

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Abstract

This paper describes the three major outcomes of using the DACUM (Developing a Curriculum) process in developing curricula for the Tennessee Exemplary Faculty Advanced Technology Education project, an NSF-funded precursor to the current southeastern Advanced Technology Education (SEATEC) project. The project had three major goals: Faculty development, curriculum and curriculum support materials development and developing internship guidelines for sending faculty back into industry. DACUM was used to address two of them – faculty development and curriculum development.

DACUM (Developing a Curriculum) is a process used by companies and colleges around the world to quickly, accurately describe specific occupations. A DACUM chart lists duties of the job, tasks, which you must be able to perform in order to do the job, and general education skills that are prerequisite to effective job performance. Unlike conventional job analysis methods, DACUM relies on panels of expert workers, defined as employees currently performing the job, to define each job – and they do it in two days. For technological careers, accurate, current materials that explain to prospective students exactly what they will be doing upon graduation, and that outline the general education skills and tools of the job they have chosen are invaluable.

The **SEATEC** teams used DACUM to define the jobs of two types of Information Technology employees – Network Specialists and Telecommunications Technicians. Panels were recruited from companies East Tennessee, Middle Tennessee and West Tennessee and included many of the major employers in the region (TVA and Lockheed Martin Energy Systems, for example, in East Tennessee). Three different panels were used; each working under a trained DACUM facilitator and each composed of representatives of 6-8 local companies.

The **SEATEC** teams realized three very positive outcomes from the DACUM studies: Professional development for team members that included certification as a DACUM facilitator; Stronger ties with businesses and industries in their service areas; and DACUM charts that can be used to compare job responsibilities in one region of the country to those in another. The rest of this paper will outline these outcomes.

Professional Development: Because the group wanted to insure that trained DACUM facilitators were available across the state to conduct DACUM job analyses, a week-long facilitator training workshop was held at Pellissippi State Technical

Community College in Knoxville. Six new facilitators were trained, two from each region of the state. The training itself was excellent career development for participants, since it taught them how to conduct focus groups as well as the DACUM process. Once they had completed their training, each participant conducted two additional DACUM panels with the help of a more experience facilitator, and then they became DACUM facilitators themselves. This designation allows trainees to conduct other DACUM panels at their colleges. These panels can be used for a number of purposes: Curriculum development (teaching what you need to know to do the job as it exists today), new program development, and program review (making sure your programs are teaching what they should be teaching). For technological programs, this capability is essential.

Industry Ties: Participation in DACUM panels has a very positive impact on college relationships with local businesses and industries. It connects them more closely to the college community by offering more than just well-trained graduates: The DACUM chart is an excellent job description to use when recruiting and it is an excellent professional development tool for current employees. With a DACUM chart in hand, a supervisor can go through each element of an employee's job and determine what areas need improvement. This is far superior to the "training du jour" method currently in use in many firms. Companies chosen to participate in DACUM studies for SEATEC noted the value of the DACUM chart in their organizations and their increased appreciation for ALL of the benefits a strong technical community college offers.   A second benefit of the panels: Companies get to see your campus first hand and become aware of how diligently programs are developed and upgraded. A third benefit, faculty internships with established in companies that provided DACUM panel members. Since industry ties were critical to the success of both the curriculum development and the internship goals of the original project, these were important outcomes.

Regional Comparisons: A final outcome of the DACUM study was that the charts allowed SEATEC to compare job descriptions developed locally with similar job descriptions across the country. This was particularly important because the Bellevue Advanced Technology Education project in Washington State has recently completed an exhaustive evaluation of careers in Information Technology, funded by the NSF. Since this project had also used DACUM, SEATEC was able to compare the DACUM charts for similar occupational titles there with our own outcomes. Comparisons revealed that the jobs were very similar. This allowed SEATEC to validate a peer ATE project's finding AND adopt their results for further developments in our curriculum. Given the time and dollar constraints currently faced by all academe, this was a very valuable outcome.

Other Resources: For more information on DACUM, contact Robert Norton, 614-292-435Center on Education and Training for Employment, Ohio State University, 160 Kenny Road, Columbus, Ohio 43210. For more information on the Bellevue ATE, contact Joanne Temcov, 206-562-6160, Bellevue Community College Bookstore, Bellevue Community College, 3000 Landerholm Circle, SE, Belleview WA 98007-6484. For more information on SEATEC, see our Website: NSTI.tec.tn.us/Seatec. Copies of the DACUM charts will be available at the conference.

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