

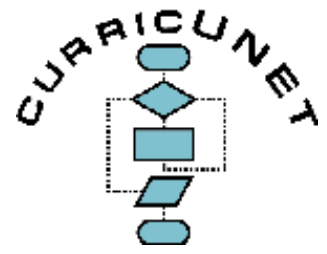
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Exploring Issues, Innovations, and New Developments with Information Technology Professionals

CurricUNET:
The Award-Winning and Eco-Friendly Online Curriculum Authoring, Editing, and Management Tool

San Diego Community College District, CA



The traditional curriculum review and approval process at San Diego Community College District (SDCCD) was, at least metaphorically, much like California rush-hour traffic. There was the stop-and-go of endless meeting cycles, committees that bottlenecked forward progress, and oil or paper fueling the whole process. This process is not unique to SDCCD, and as with the unpredictability of freeway travel, colleges around the country could measure the distance from curriculum review to approval in time and miles of paper.

The previous SDCCD curriculum review process included hurdles just to get the proper documents on the Curriculum and Instruction Council (CIC) Agenda. From faculty initiating the proposal to a series of checkpoints and committee stops—articulation, librarian, department chairs, deans, and curriculum chairs—and on to the curriculum clerks creating 20 copies of full proposal packets. In addition, attempts to create and approve curriculum in a timely manner in a district with three colleges with distinct cultures was a nonstop challenge. The consultation process for curriculum review among the academic departments proceeded at a glacial pace as faculty tried to match their schedules for meetings. Input from department chairs, faculty, deans, librarians, and articulation officers was solicited via campus mail. If course proposals weren't lost along the way, proposal packets took a very long time wending to their final reviews by three curriculum committees meeting at different times of the month. Frustration ran high by the time the course proposals reached the District Curriculum Instructional Council for final approval, and any attempt by its members to revise was viewed with despair. In addition, wheelbarrows full of paper were delivered to the Instructional Services Office every two weeks. SDCCD recognized that the lumbering process was killing curriculum review, responsiveness, and innovation. The unyielding and inefficient process no longer matched in form or function the learning environments and technological advances of the colleges or the communities they served.

CurricUNET Project Goals

In response to an unyielding and inefficient standard operating procedure, the Instructional Services Department of SDCCD in 1998 envisioned tapping the power of Internet resources, e-mail communication, and database archives to create a curriculum and review process that matched the technological overhaul happening in business, industry, learning communities, and new market developments. As a series of visionary goals, CurricUNET is designed to—

1. Automate course development, modification, origination system
2. Automate course and systematize the complete workflow associated with the submission, review, and approval of course and program proposals
3. Create and display customizable curriculum reports
4. Search and retrieve courses by subject, number, units, status through advanced database systems
5. Archive Curriculum Developments (active or historical to 1985)
6. Create a Paperless Process

The CurricUNET system at SDCCD is a milestone achievement in automating the entire curriculum development and approval process. CurricUNET is the first known system to successfully build a curriculum development and approval process that is completely Web-based with a fully automated workflow cycle.

Program Description

Gone are the long delays in the curriculum review and approval process with reams of wasted paper. It is a new day at SDCCD, and the development and implementation of CurricUNET, an online curriculum authoring, editing, management and approval software system has increased efficiency and revived interest in learning innovations. Developed by SDCCD in conjunction with GoverNet, CurricUNET reduces duplicative efforts and delays associated with traditional curriculum review and approval processes and immediately impacts the colleges' instructional developments.

Initiated by Kenneth Fawson, Assistant Chancellor for Instructional Services, the three-year development of CurricUNET was a massive undertaking. Outside of the logistics and leadership required to bring together the right participants from around the district and the countless hours of hard work by collegewide committees, the sheer number of details involved in operationalizing CurricUNET is daunting. There are 3,615 courses in 421 programs of study at SDCCD, described in two million lines of computer program code. Fawson says, "This technology solution to a long-standing and complex paper process in a multicampus district could not have become reality without the willingness of faculty and staff to work together tirelessly in developing a system that addresses the needs of users, the colleges, and the district."

CurricUNET is designed as a digital template that systemically manages the storage, distribution, and e-mail notification of each participant in the curriculum and review process. Integrating a diversity of technology options including an Oracle® database and Macromedia® Flash™, CurricUNET stores data as a discrete, real-time diagram for every proposal developed. As a result, the current status of a proposal can be viewed at any time by simply requesting and displaying the current workflow graphic of that proposal through a Web browser, thus eliminating tracking calls and numerous follow-up e-mails.

Unlike previous systems that typically stored MS Word-version documents of course outlines, CurricUNET uses Web forms that capture all fields into an Oracle database. Therefore, not only can the workflow itself be automated, but also all fields captured on submitted proposals can be searched and analyzed for all current and archived courses.

The fruit of three years of developmental labor can now be viewed in an anytime, anyplace Web-based format. CurricUNET offers faculty the option to research and preview existing course outlines and transfer articulation agreements in the online database. The information may then be used in the creation of a new course proposal or the revision of an existing one. Proposals are created through easy step-by-step entry of all fields in the development or editing of a course or program, with point-and-click options, pull-down menus, and help functions built into the data entry form. Through the CurricUNET process, faculty can now view a digital flowchart tracking their curriculum proposals as they move through review to approval. Committee approvals are processed via e-mail exchange with changes, comments, and edits tracked through each stage. Another custom, time-efficient function is the CurricUNET default process, which after 10 working days automatically moves curriculum proposals to next stages, indicating skips or omissions, and ensures progress instead of committee in-basket stalls.

CurricUNET Results

CurricUNET, as an entirely Web-based solution, allows designated user access without special clientside software. A simple Web browser and Internet access are all the system requirements. This allows new options for SDCCD faculty and staff who can now access information from home computers or any other Web ports they choose. Furthermore, the automated workflow process is not limited to single campus processes. CurricUNET manages multiple college-district interactions, and if fully extended to all colleges within a state system, it would allow real-time searching and retrieval of standardized course outlines and program information by and among all state faculty, colleges, and universities.

The creation of CurricUNET has resulted in a series of quantitative and qualitative outcomes and changed the curriculum and review process at SDCCD forever. Within one year, CurricUNET has made possible a record number of new courses and program developments (470) since full implementation (2001-2002), and 500 more expected by the

end of the 2002-2003 academic year.

According to project staff and faculty users, CurricUNET's more qualitative benefits include—

1. Timelier creation of new courses and programs;
2. Easier facilitation of Title V, CA State Education Code, SDCCD curriculum policy, and standards in course and program development through CurricUNET resources and external sources;
3. Huge reductions in paper printing, handling, and storage;
4. Improved searching of current and archived course outlines, with historical outlines immediately accessible;
5. Reduction in frustration and conflicts previously caused by stalled or improperly handled proposals (the online tracking system offers immediate access to proposal status updates and comments for evaluative developments);
6. A multitude of report capabilities that inform curriculum decisions and program compatibility (for example, CurricUNET features Program Impact Reports that display the impact of a proposed change in one course on other courses and programs, with a General Education Report that allows analysis of the transferability of district requirements);
7. A comment screen accompanying each proposal that can be read by all vested parties, accelerating consultation among faculty;
8. Greater accuracy of course information supplied directly from CurricUNET to SDCCD college catalogs; and
9. Easier articulation of courses with four-year colleges and universities with universal access to official course outlines.

The outcomes noted above are clear evidence of CurricUNET's powerful impact on the SDCCD curriculum and review process. However, more philosophical innovations can be found in the entrepreneurial agreement between Governet and SDCCD. The many years of development, faculty manpower, and implementation invested in CurricUNET has resulted in a partnership to support the future success of both parties. CurricUNET as a customized solution for the curriculum and review process is owned by SDCCD, but the rights to market and sell CurricUNET are built into contract agreements with Governet. This offers SDCCD a unique opportunity to generate revenue to offset hardware upgrades, version updates, and training services for CurricUNET, while Governet is able to support market demand and promote a customizable solution to the laborious and necessary curriculum and review process in education.

Future Project Developments

As a completely Web-based system, CurricUNET does not require any specialized software to be loaded to individual user's computers. In addition, CurricUNET 's Web-based delivery allows easy operation and transferability on both PC and Mac platforms.

Much of the work to create a paperbound course outline form for the curriculum review process has been relatively standardized across all California Community Colleges (CCC). CurricUNET thus offers fluent implementation of design functions across the CCC system. As a targeted marketing and implementation goal, this online standardization would have the added benefit of allowing statewide searches of course information via the Web by instructors, curriculum staffs, researchers, and CCC faculty and staff. Albeit, while each college and district may have particular workflow processes associated with their review and approval processes, the latest version of CurricUNET includes automated workflow software with a wizard-like design, allowing rapid customization of the workflow component. Additional version upgrades and blueprint design modifications are scheduled:

1. **Syllabus Wizard** builds an online syllabus by automatically assembling needed data from the course outline and instructor datasets. It then allows modifications and additional data to be added by the instructor online. One can publish to the instructor's Website upon completion.
2. **Articulation Module** provides online entry, retrieval, and reporting of articulation agreements with an unlimited number of institutions. It will allow for shared regional usage with multiple other institutions, including those in other tiers of higher education (e.g., CSU, UC). It will also check for

discrepancies with ASSIST (Articulation System Stimulating Inter-institutional Student Transfer).

3. **Interface Wizard** offers a user-specified download interface from CurricUNET to external systems (such as college catalog production, schedule-build process, ASSIST, CAN, etc.). Since many of these systems have varying requirements, this will allow local IT staff to rapidly reassemble download files on demand, thus minimizing the need for custom programming from Governet.

4. In addition, provision of **Section 508** accessibility standards and **Americans with Disabilities Act (ADA)** accommodations to meet California compliancy standards is currently in development.

Summary and Lessons Learned

The idea of automating a traditionally paperbound process with a network of signature practices in the CurricUNET endeavor required significant review, reflection, and repurposing of workflow and process design functions. The CurricUNET staff and project team leaders offer the following insights and suggestions for those interested in bringing a standard and traditional educational process into the digital era.

Lessons Learned—

- Document clearly the business rules of your college or university.
- Involve end-users in the planning phases; reward them for their input.
- Build functional specifications into service contracts.
- Implement the project in phases.
- Initiate technical documentation as part of the development curve, not as the last deliverable.
- Keep hard copies of curriculum at least through beta-test approval processes.
- Remember to save, save, save—especially after entering data on each screen. This is critical in the event of possible system malfunctions during beta-test cycles.
- Learn, teach, and train users on new rules for saving documents in a Web-based environment rather than a local hard-drive platform.

The CurricUNET system greatly reduces the clerical logistics, nonstandard manual processes, and the associated delays and uncertainties of traditional curriculum development and approval processes. All proposals now use standardized Web forms captured in powerful databases. Both current and archived course outlines are instantly available to interested parties. The automated workflow and anytime, anyplace convenience of CurricUNET reduces the total time from course proposal to final approval, minimizing frustrating delays and needless communications. In short, the time and effort required for instructors, curriculum personnel, and district staff to oversee the total process has now shifted to focus on new course ideas, learning experiences, and program enhancements for students.

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In Spring 2002, the SDCCD CurricUNET Project was honored by the Board of Governors of the California Community Colleges as the recipient of the Technology 2002 Focus Award. SDCCD's CurricUNET was one of only two community colleges recognized for exemplary technology initiatives by the CA State Chancellor's Office.

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