

## Learning Management System (LMS)

The goal of a Learning Management System is to provide high quality teaching and learning tools that satisfy both current and long term requirements for supporting quality online instruction, using the most robust and superior technology available.

The Western Association of Schools and Colleges and best practices in distance education support the use of a common learning management system by all faculty teaching online at an institution. The U.S. Department of Education Office of Postsecondary Education report, *Evidence of Quality in Distance Education Programs Drawn from Interviews with the Accreditation Community*, states that the “development of a coherent curriculum.... implies “the use of a common platform (for online courses);” Furthermore, “Use of the same interface (in online courses) or layout (in print-based courses) lessens confusion for students and is an indicator of good course design and institutional oversight. In print-based courses, ‘layout’ would encompass the course overview and course objectives, unit objectives, narrative discussion, learning activities, and review questions. For online courses, the use of the same course management system will result in a common interface and basic course structure.” <http://www.ysu.edu/accreditation/Resources/Accreditation-Evidence-of-Quality-in-DE-Programs.pdf>

Best practices, such as the use of a common platform, can lead to greater student success.

**Background:** The current PCC Learning Management System, Blackboard/WebCT8, will be supported by the vendor until **Fall 2012**. At that time, we will have to move to another LMS. If we stay with the Blackboard LMS, we will need to migrate to a Blackboard 9 version that is quite different from the old WebCT interface we are presently using. The migration will involve re-training and movement of courses to the new platform. Should we stay with Blackboard or engage another LMS to deliver online, hybrid and web-enhanced courses?

The San Diego Community College District recently (2009-2010) conducted a study and evaluation of their present learning management system, which is also soon to be phased out, (Blackboard Vista) comparing the offerings of software vendors with the strategic needs of the District. Andrea Henne, EdD ([ahenne@sdccd.edu](mailto:ahenne@sdccd.edu)), Dean, Online & Distributed Learning Instructional Services, Planning & Technology at SDCCD shared the strategy for choosing a new LMS at a recent Online Teaching Conference in San Diego (June 17, 2010), sponsored by CETC and CUE. <http://otc10.org/> Such a study should be conducted at least a year prior to any change in LMS.

The following strategy is based on the SDCCD planning process for choosing a new LMS.

## I. LMS EVALUATION CRITERIA

**1. Experience, Skill and Reliability**

The LMS platform and the vendor must have the ability to provide the required services with demonstrated experience in similar distance education programs. The LMS vendor must have a history of stability and reliable service.

**2. Tools and Features**

The functionality of the MS must meet faculty needs and be intuitive for students. Tools must reflect best practices for instructional design, with a pedagogically-sound model including learning modules, interactivity and communication elements, and a robust assessment tool with strong gradebook. Additional questions that should be asked are, what SCORM Standard does the LMS use, what technologies are additionally required (Java) and will the system be easily integrated with the PCC student information system?

**3. Migration of Current LMS Courses**

The LMS must accommodate the need to efficiently migrate current courses with minimal need to rebuild and retrain faculty and students

**4. Licensing Costs**

Whether the choice is to license the software, host the LMS or be hosted, there are benefits and drawbacks. The licensing fees must be cost-effective and within existing budgetary constraints.

**5. Support Services must include**


- Accessibility for ADA Compliance
- Tracking statistics for enrollment reporting
- SCORM compliance for e-packs and test banks
- Course migration support
- Training materials, context-sensitive help
- Administrator tools for managing courses

**II. STEPS IN STRATEGIC PLANNING PROCESS**

**6. Conduct an Online Faculty Needs Assessment Survey**

To assure openness in the process, and buy-in, distance education faculty must be asked to participate in a strategic review and planning effort to reach consensus about the future choice of a learning management system for Pasadena City College.

In order to collect as much input as possible from distance education faculty about what tools are most important in a course management system, an *Online Faculty Needs Assessment Survey* is used to learn about must-haves as well as a wish list of tools and features desired in a course management system. Faculty ranks the importance of LMS tools on a scale of 1-10, with 10 being the highest importance. The top-ranked tools will help direct the choice of a LMS. Here is the *Online Faculty Needs Assessment Survey of CMS Tools and Features* used by SDCCD:



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### Online Faculty Needs Assessment - Course Management System Tools and Features

1. For each tool, on a scale of 1-10, with 10 being the highest, rank how important each of the following CMS tools are to you. There is space at the end to add comments or clarification. **(Required)**

	Rank										
	N/A	1	2	3	4	5	6	7	8	9	10
Assignment Tool	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Blogs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Built-in Syllabus Tool	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calendar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chat Rooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Course Cartridges/E-Packs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customizable Appearance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customizable Organization of the Course Site	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Discussion Forums	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Assignment Dropbox	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Email Alerts of Discussion/Assignment Submission	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E-Portfolios	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equation Editor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
File Manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Glossary Tool	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gradebook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HTML Editor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Instant Messaging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internal Email System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Learning Modules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Learning Object Repository	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mobile Device Compatibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quizzes/Surveys	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Search Tool	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Selective Release	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student Groups	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Student Homepages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Synchronous Live Classroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Test Banks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whiteboard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wikis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please use this space to add other tools or comments about any of the tools.

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<http://www.zipsurvey.com/LaunchSurvey.aspx?suid=39766&key=29E96FC6>

### 7. Organize a series of demonstrations by different LMS vendors

During the course of the academic year, faculty (and other relevant stakeholders) are invited to attend in-person demonstrations and interactive webinars with a diverse group of LMS companies, ask questions, and then follow up with hands-on “test drives.” These demonstrations should be informative, and tailored to our Institutional needs, with vendors required to answer a number of specific questions. The demonstrations should be followed up by hands-on, interactive, online faculty experience and review of each vendor’s product made available with links from the vendor. Collect feedback from stakeholders by posting a *LMS Decision Matrix Survey*. The matrix should be available to distance education faculty, staff, students and administration who have participated in a demonstration, live or archived, or have hands-on experience.

Here is the *LMS System Decision Matrix Survey* used by SDCCD:





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Course Management System Decision Matrix

1. Your First and Last Name (Required)

2. Your Primary Campus (Required)

3. For which CMS is this feedback? (Required)

☐ Blackboard Learn 9.1+

☐ Desire2Learn

☐ Epsilon

☐ Etudes

☐ Moodle

☐ Sakai

☐ WebStudy

☐ Other (please specify)

4. My evaluation is based on: (Check as many as apply) (Required)

☐ Participation in live demonstration

☐ Viewing of archived demonstration

☐ Hands-on test drive

☐ Personal experience

☐ Other (please specify)

5. Performance, Look & Feel, Interface

☐ Does not meet needs

☐ Meets needs

☐ Exceeds

☐ Superior

☐ Not enough information to evaluate

☐ Other (please specify)

6. Comments and Pros/Cons for the Performance, Look & Feel, Interface

7. Features/Functions/Tools

☐ Does not meet needs

☐ Meets needs

☐ Exceeds

☐ Superior

☐ Not enough information to evaluate

☐ Other (please specify)

8. Comments and Pros/Cons for the Features/Functions/Tools

9. Accessibility for ADA Compliance

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Not enough information to evaluate
- ☐ Other (please specify)

10. Comments and Pros/Cons for the Accessibility/ADA Compliance

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### Course Management System Decision Matrix

#### 11. Media and Social Networking Tools

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Not enough information to evaluate
- ☐ Other (please specify)

#### 12. Comments and Pros/Cons for the Media and Social Networking Tools

#### 13. Customization of Interface and Tools

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Not enough information to evaluate
- ☐ Other (please specify)

#### 14. Comments and Pros/Cons for the Customization of Interface and Tools

#### 15. Tracking Statistics

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Not enough information to evaluate
- ☐ Other (please specify)

#### 16. Comments and Pros/Cons for the Tracking Statistics

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### Course Management System Decision Matrix

#### 17. ePacks/Testbanks/Publisher Content Import

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Not enough information to evaluate
- ☐ Other (please specify)

#### 18. Comments and Pros/Cons for the ePacks/Testbanks/Publisher Content Import

#### 19. Multi-platform/Browser compatibility/File Formats

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Other (please specify)

#### 20. Comments and Pros/Cons for the Multi-Platform/Browser Compatibility/File Formats

#### 21. Training Materials/Context-sensitive Help/Learning Curve/User Community

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Not enough information to evaluate
- ☐ Other (please specify)

#### 22. Comments and Pros/Cons for the Training Materials/Context-Sensitive Help/Learning Curve/User Community

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**Course Management System Decision Matrix**

**23. Migration of Blackboard Vista courses**

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Not enough information to evaluate
- ☐ Other (please specify)

**24. Comments and Pros/Cons for the Migration of Blackboard Vista courses**

**25. Course Archiving/Administrator Tools**

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Not enough information to evaluate
- ☐ Other (please specify)

**26. Comments and Pros/Cons for the Course Archiving/Administrator Tools**

**27. Cost of License and Infrastructure**

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Not enough information to evaluate
- ☐ Other (please specify)

**28. Comments and Pros/Cons for the Cost of License and Infrastructure**

**29. Scalability**

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Not enough information to evaluate
- ☐ Other (please specify)

30. Comments and Pros/Cons for the Scalability

31. Technical Support

- ☐ Does not meet needs
- ☐ Meets needs
- ☐ Exceeds
- ☐ Superior
- ☐ Not enough information to evaluate
- ☐ Other (please specify)

32. Comments and Pros/Cons for the Technical Support

33. Overall Pros of this CMS

34. Overall Cons of this CMS

35. Additional Comments



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### 3. Gather pricing and licensing proposals.

The Office of Academic Support will organize a list of LMS pricing and licensing proposals and make the list available to all stakeholders.

### 4. Rank Each LMS on the Evaluation Criteria.

The Learning Management System Decision Matrixes will be evaluated by the designated members of the Office of Academic Support along with designated members of the DE Committee, using a web-based decision-matrix survey as the information-collection instrument:

Here is the *LMS System Decision Matrix Summary Form* used by SDCCD:

Course Management System Decision Matrix		
Check One:	Epellen Moodle	Etudes WebStudy
Blackboard		
Desire2Learn		
Sakai		
Rating		Comments
Performance, Look & Feel, Interface		Free:
<input type="checkbox"/> Does not meet needs		Costs:
<input type="checkbox"/> Meets		
<input type="checkbox"/> Exceeds		
<input type="checkbox"/> Superior		
Features/Functions		Free:
<input type="checkbox"/> Does not meet needs		Costs:
<input type="checkbox"/> Meets		
<input type="checkbox"/> Exceeds		
<input type="checkbox"/> Superior		
Accessibility for ADA Compliance		Free:
<input type="checkbox"/> Does not meet needs		Costs:
<input type="checkbox"/> Meets		
<input type="checkbox"/> Exceeds		
<input type="checkbox"/> Superior		
Web 2.0 Media & Social Networking Tools		Free:
<input type="checkbox"/> Does not meet needs		Costs:
<input type="checkbox"/> Meets		
<input type="checkbox"/> Exceeds		
<input type="checkbox"/> Superior		
Customization of Interface and Tools		Free:
<input type="checkbox"/> Does not meet needs		Costs:
<input type="checkbox"/> Meets		
<input type="checkbox"/> Exceeds		
<input type="checkbox"/> Superior		
Tracking Statistics		Free:
<input type="checkbox"/> Does not meet needs		Costs:
<input type="checkbox"/> Meets		
<input type="checkbox"/> Exceeds		
<input type="checkbox"/> Superior		

**5. Create/Review LMS Decision Matrix Survey Comparison and Summary Chart**  
All stakeholders, e.g., IT leadership, Campus and Faculty Technology Committees, DSPS, and the Library should meet to review and discuss results.

Solicit additional input and feedback via Faculty Forums. The Faculty Forums will be held for one hour on four Fridays during the spring semester. The Forums will be conducted via CCCConfer <http://www.cccconfer.org/index1.aspx> and set up by the Office of Academic Support. The Dean of Academic Support and a designated representative of the DE Committee will coordinate and host the actual online forums. These Forums should be widely

publicized through the Campus Bulletin, PCC and Distance Education Home Pages, as well as email so that any final input can be considered and all constituencies feel assured there has been widespread participation and opportunity to give feedback.

#### **7. Finalize the Choice of a LMS**

The results of the stakeholder evaluations of the LMS options, which include the feedback from faculty who participated in the review process, review of survey results, and the four Friday Faculty Forums conducted in the spring should lead to consensus.

#### **8. Now the Work Starts**

Secure funding for all areas of support for the new platform. Work with the Office of Academic Support, Computing Services and MIS to integrate all related technology including support, student registration, and enrollment.

Develop a strategic plan for faculty/staff training and migration of courses to the new platform. As soon as possible, faculty should have access to the chosen LMS via test drives, tutorials, sandboxes, etc.

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#### **Recommendation:**

The Distance Education Committee makes the following recommendations regarding the choice of a Learning Management System for the campus:

- All faculty will be encouraged to use the campus-supported LMS.
- The decision regarding the choice of a new LMS will be made by the Academic Senate Distance Education Committee and the dean of the Office of Academic Support, in consultation with other college stakeholders.
- The strategy for choosing a new LMS will closely parallel the 2009/10 planning process used by the San Diego Community College District.
- The Learning Management System must meet the needs of faculty and students and be accessible for ADA Compliance.
- Ample training and course migration support will be provided.
- Faculty and student technical support will be reliable and ongoing.

#### **Resources**

California Educational Technology Consortium, Computer Using Educators. Online Teaching Conference June 16, 17, 18, 2010. San Diego City College, CA. <http://otc10.org/>

Chickering, A. & Gamson, Z. (1987). *Seven Principles for Good Practice in Undergraduate Education*.

<http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/7princip.htm>

Henne. A. Email from Author re: CMS Information Sessions, 28 June 2010.

Henne. A. So You're Thinking About Changing Your Course Management System? Online Teaching Conference June 16, 17, 18, 2010. San Diego City College, CA.

<http://otc10.org/TopNav/Presentations.html>

San Diego Community College District. Online Learning Pathways. *Course Management System (CMS) Needs Assessment and Evaluation*. Accessed June 17, 2010

[http://www.sdccdonline.net/faculty/CMS\\_Needs\\_Assessment\\_and\\_Review.pdf](http://www.sdccdonline.net/faculty/CMS_Needs_Assessment_and_Review.pdf)

U.S. Department of Education Office of Postsecondary Education. (2006). Evidence of Quality in Distance Education Programs Drawn from Interviews with the Accreditation Community. <http://www.ysu.edu/accreditation/Resources/Accreditation-Evidence-of-Quality-in-DE-Programs.pdf>

Walton, I., James-Hanz, P., North, W., & Pilati, M. (2008). Ensuring the Appropriate Use of Educational Technology: An Update for Local Academic Senates.

[http://www.asccc.org/Publications/Papers/Education\\_Technology.htm](http://www.asccc.org/Publications/Papers/Education_Technology.htm)

WCET eduTools. Course Management System Comparisons – Reborn. Accessed June 24 2010. <http://www.edutools.info/static.jsp?pj=4&page=HOME>