Earlier chapters of this study describe how faculty members come to use a course management system (CMS), the extent to which they use it, and how their CMS use changes over time. This chapter, which draws on certain kinds of data and faculty opinion, explores how faculty members actually use the technology in their teaching. What kinds of pedagogical goals are they trying to achieve when they use a CMS? The evidence shows that the emphasis is on supplementing course materials, enhancing communication, supporting transparency, giving and receiving feedback, and addressing student technology skills. But we also found that in their use of course management systems, faculty members ultimately practice a sort of “accidental pedagogy,” whereby technology use improves learning outcomes.

Pedagogical Reasons for Using a CMS

Figure 8-1 presents the pedagogical reasons faculty members give for using course management systems in their teaching. We group these into three categories:

- supplementing course materials to increase student understanding, appeal to different learning styles, and increase the time students spend on course materials and exercises;
- increasing faculty-student and student-student communication;
- providing greater feedback to students to enhance their learning; and
- increasing the course’s transparency.

Supplementing Course Materials

The online survey results shown in Figure 8-1 demonstrate that faculty consider it important to supplement course materials or provide more access to interactive materials. In supplementing course materials using the CMS, faculty are usually trying to

- increase student learning by providing additional access to course materials,
- appeal to diverse learning styles,
- provide more access to interactive materials and activities, and/or
- increasing student time on task.

Also, as described in Chapter 7, many faculty offer hybrid courses in which part of a class is moved online to replace actual class meetings. Some faculty and staff provide supplemental materials through the system as a way to increase access and encourage students to use the CMS. Claudia Barretto of the UW–Milwaukee biological sciences department said, “About 95 percent of my students print out my class notes and use them. Students can access the material when they need to, [and this is important
because most work and commute. The key to successful use of [the CMS] is giving students a reward, something they can really use."

**Increasing Student Learning**

Much faculty CMS use is an effort to enhance student learning by improving students’ interaction with the course materials, including how they listen and learn in class. Many faculty members agree that putting up course materials ahead of time helps students to pay more attention and learn better in class, as Brenda Bredahl of the UW–River Falls journalism department suggested. Some worry about the effect this has on student attendance, particularly because it seems to affect the weaker students more, according to Barry Cameron of the UW–Milwaukee geosciences department. Others worry that rather than helping students listen more carefully and learn more from class time, the availability of course documents in the CMS encourages passivity. Because they have the notes ahead of time, students may become complacent and stop listening properly in class. Taggert Brooks of the UW–La Crosse economics department described how students themselves have become aware of this and have even started to ask him not to post lecture materials or PowerPoint presentations so they are no longer tempted to do this.

**Appealing to Different Learning Styles**

One of the big promises course management systems hold is to help faculty more easily appeal to students’ diverse learning styles. As Figure 8-2 shows, 63 percent of the faculty respondents believe course management systems do this successfully.

It is interesting to consider faculty perceptions of how course management sys-
tems help accommodate diverse learning styles. Figure 8-3 shows the breakdown.

Some respondents, however, believe that the highly structured nature of a CMS actually impedes their ability to appeal to diverse learning styles. Regan Gurung of the Department of Human Development/Psychology at UW–Green Bay said that the structure of the CMS becomes the structure of how you do things. A UW–La Crosse arts and humanities faculty member suggested that “the CM systems may actually inhibit diverse learning styles because CM essentially forces students to conform their learning to a specific set of technologically oriented ‘standards.’ So I’m not really persuaded that CM is something totally good.”

We believe that the promise of course management systems to appeal to diverse learning styles is not even close to being fulfilled. Interviews with faculty confirm that to address the problem, course management systems should not become more complex. Rather, vendors should make them easier to use (for example, make it easier to upload and manage visual materials), improve their ability to handle streaming media, and include help for faculty who must learn to use these features. Many faculty members interviewed had not thought extensively about the CMS’s ability to accommodate diverse learning styles. On the survey, a social sci-

![Figure 8-2. Faculty Confidence in CMS Capacity to Accommodate Diverse Learning Styles (N = 554)](image)

![Figure 8-3. Faculty Perception of How Course Management Systems Accommodate Diverse Learning Styles (N = 346)](image)
ences faculty member at UW–Milwaukee commented, “I’m not sure how [the CMS] addresses different learning styles—or even what these styles might be. Some discussion of this aspect would be helpful.”

**Providing More Access to Interactive Materials**

Faculty also supplement course materials by using a CMS to provide more access to interactive course materials and activities for their students. One of the great promises of e-learning is this capacity to provide more interactivity, and Figure 8-4 shows that most faculty members believe that using a CMS will help them include more access to interactive activities in their courses.

A detailed examination of how faculty define interactivity revealed that use of interactive materials such as simulations is still quite limited. Figure 8-5 illustrates that most faculty see the CMS as primarily fostering faculty-student and student-student communication.

Interestingly, faculty who identify themselves as intermediate users expressed particular interest in using the CMS to improve interactivity (Table 8-1).

From interviews it is clear that many faculty were not familiar with using digital simulations and exercises. Those who were tended not to use them extensively within a CMS, in part because of technical difficulties and in part because they were not always clear on how to incorporate these activities into their teaching.

**Increasing Students’ Time on Task**

Although faculty rated this as a relatively low priority among their reasons for using a CMS, most seem to think that this is indeed what a CMS accomplishes. As Figure 8-6 illustrates, most faculty believe that using a CMS induces students to spend more time with the course materials than they otherwise would. This being the case, some faculty in interviews expressed concern that their strong students tended to use the CMS more often and benefited from it more than their weak students did. The CMS thus had the effect of increasing the gap between these two groups of students.
### Faculty Use of Course Management Systems

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**Figure 8-5. Faculty Perception of How Course Management Systems Foster Interactivity \((N = 333)\)**

![Graph showing faculty perceptions of how course management systems foster interactivity](image)

**Table 8-1. Goals of Interactivity in a CMS, Correlated with Faculty Skill Level**

<table>
<thead>
<tr>
<th>Goal</th>
<th>Beginners</th>
<th>Intermediate Users</th>
<th>Expert Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>More interactivity among students</td>
<td>12.98</td>
<td>64.42</td>
<td>22.60</td>
</tr>
<tr>
<td>More interactivity between faculty and students</td>
<td>13.30</td>
<td>63.55</td>
<td>23.15</td>
</tr>
<tr>
<td>Greater use of digital simulations and exercises</td>
<td>14.29</td>
<td>56.19</td>
<td>29.52</td>
</tr>
</tbody>
</table>
Increasing Communication

Faculty see the ability to increase communication through CMS use as a major pedagogical goal. This goal also drives faculty CMS adoption and increases CMS use. Faculty reported that the use of CMS communications capabilities such as the announcements, discussion boards, e-mail tools, and grouping tools led to increased communication between faculty and students and increased communication and cooperation among students.

Faculty-Student Communication

Much of this communication appears to be unidirectional, that is, broadcast from faculty to students. Most faculty members believe their CMS use has been successful in this regard, as Figure 8-7 shows.

The amount of contact that faculty feel the CMS provides increases as their skill level in using the CMS increases. Therefore, if we examine the relationship between skill level and whether faculty members think they are able to communicate more, we find the results shown in Table 8-2.

Increasing numbers of faculty seem to be using the CMS’s synchronous tools, such as chat and the whiteboard, according to Cheryl Frye and Catherine Roraff of the UW–La Crosse computer science department and Kurt Liechtle of the UW–River Falls history department. Naturally, this means that the communication is much less unidirectional. But faculty still use these tools at relatively low levels.

Student-to-Student Collaboration and Communication

Many faculty use the CMS to facilitate greater communication and participation among students. This is not something they can easily do outside of the CMS. Faculty can also enhance communication among students by building learning communities within the class, a function the closed and
Faculty members most often use the discussion board to facilitate communication. Many said the discussion board encourages far more participation from students—especially shy, reticent, and minority students—than faculty can elicit in the classroom. In addition, by having discussions through the CMS, they are effectively able to slow things down. This allows for more processing time and lets students more effectively engage the text, if there is one.

Nancy Chick of the UW–Colleges Department of English made a strong case for the use of the CMS discussion tool: “It has enormous potential, for example, to encourage participation by shy students or for learning-disabled students. It gives them the opportunity to archive and go through things more slowly or repeatedly. I have good discussions in literature classes [and] I have worked to perfect that online. These discussions are superior to those that happen in a face-to-face class. They are slower, students tend to look for textual evidence more, and they are clearer in their explanations …. I have been impressed with online discussions. When I started, I was a skeptic ….

The challenge [however] is getting students to achieve a high level of discussion, and it takes a few weeks to get them there.”

Other faculty share these views, even those in the natural sciences, business, and other disciplines where we might not expect to see quite as much use of the discussion tool as in the humanities and social sciences. These faculty make extensive use of the discussion tool in small, writing-intensive classes and to conduct group projects, according to Reinhold Hutz, UW–Milwaukee Department of Biological Sciences, and Kelly Ottman, UW–Milwaukee School of Business Administration.

Although many faculty members described how online discussion encouraged participation, some noted that they had received student complaints about this feature’s use. Most of these complaints related to the policies faculty created to manage discussion. Numerous faculty members said they learned through trial and failure and by trying again the following semester. They feel that more faculty training on effective use of class discussions is needed.

Peter Burkholder of the UW–Stout Department of Social Science said he and other faculty members especially like the CMS

<table>
<thead>
<tr>
<th>Assessment of CMS Impact on Communication</th>
<th>Faculty Skill Level in CMS Use (Percentage of Users)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beginners</td>
</tr>
<tr>
<td>More communication with a CMS</td>
<td>43.12</td>
</tr>
<tr>
<td>Less communication with a CMS</td>
<td>8.26</td>
</tr>
<tr>
<td>No difference in communication</td>
<td>48.62</td>
</tr>
</tbody>
</table>
group feature that lets them divide students into groups for discussion or projects. They desire greater ease of use and flexibility in this tool, however, and they especially appreciate the students’ being able to form their own groups. Faculty would also appreciate course management systems in which these collaboration tools included an easy-to-use and powerful file-sharing system, according to Jude Rathburn of the UW–Milwaukee School of Business Administration.

Using a CMS to Provide Feedback

Faculty use the CMS extensively to provide prompt, easy, and comprehensive feedback to students. This takes several forms. First, faculty structure courses within the CMS such that they can easily monitor student work and understanding, and give students feedback on their work. Faculty commonly use the discussion boards for this task. One way to use discussion boards is to have students write about or respond to readings or case studies, said Carol Porth, UW–Milwaukee Department of Health Restoration, and John Koslowicz, UW–Whitewater Department of Political Science. This lets faculty follow student progress and identify any problems. Faculty have always assigned such exercises, but the CMS makes them more manageable and thus more likely to be undertaken. LeeAnn Garrison of the UW–Milwaukee Department of Visual Art noted that after struggling with student journals and all the problems of periodically collecting them and redistributing them, faculty found this much easier to do using a CMS.

Faculty also monitor student learning and help students monitor their own learning by using the CMS assessment tool. Many faculty use the CMS for practice tests, either in coordination with or instead of “real” quizzes. These assessments help both faculty and students gauge their progress and weaknesses. Faculty members also use the quiz tool as a survey and feedback instrument to gauge student learning and experiences. These CMS features are frequently the only tools of this type to which faculty have easy access. Most likely, as these tools become more robust and easier to use, faculty will use them more often and more extensively. Many CMS quiz tools are quite limited in their functionality, and faculty dissatisfaction currently discourages them from using these features.

Transparency

Faculty members make quite creative and extensive use of course management systems to increase the transparency of their courses. In the survey and interviews, numerous faculty members cited transparency as an important factor, as Figure 8-1 illustrates.

The CMS allows for greater transparency in three related ways. First, having the various parts of a course available in a CMS makes the course goals and processes more visible to students. Second, having students’ work visible to other students in the class—through student postings to the discussion board or their participation in a group project, for example—appears to make students more accountable for their performance. Course management systems enable this more public kind of learning, which many faculty value as contributing to greater educational gains. Finally (and this appears to be faculty’s most common understanding of transparency), the use of the CMS gradebook tool increases the transparency of the grading process. Laura Fingerson of the UW–Milwaukee sociology department said, “Now there is no secret gradebook …. It has also improved my relationships with students.”
Student Technology Skills

As discussed in Chapter 7, faculty members who are discouraged by students’ poor technology skills are often dissuaded from using or increasing their use of a CMS. However, a few respondents use the CMS in their teaching in an explicit effort to force students to learn important technology skills. This appears to be especially pronounced in disciplines such as business, where faculty members feel that students will need certain skills by the time they leave the institution.

Accidental Pedagogy

Thinking about how faculty use course management systems in their teaching forces us to confront an odd paradox. Course management systems are really organizational tools. Ideally, they enable faculty to do such things as manage groups, post announcements, and distribute presentations more easily and effectively. This is how faculty largely use the software, and they would likely resist and reject programs that try to force a certain teaching style or pedagogy upon them. Faculty want control, and they want to make their own decisions about how to teach.

Using course management systems as an organizational tool, however, seems to trigger a process of rethinking and restructuring for many faculty. Quite possibly, the extended use of any technology would do the same thing. But as it happens, most faculty members come to e-learning by using a CMS. It is their starting point, and it becomes the focus of a lot of their thinking about how to teach well. A sort of accidental pedagogy happens.

Dick Cleek, chief information officer of UW–Colleges and a major champion of CMS use, tells of one faculty member who described the process of using a CMS for the first time as a “mini-sabbatical” in that it was exciting and energizing to have to think about a course in a way he had not done in a while. The CMS forced him to ask questions about what he was trying to achieve and how, something that teaching the class in the regular manner hadn’t required. Other interviewees spoke about having to organize courses in different ways and divide them into new kinds of pieces. Sharon Giroux of the UW–Stout Department of Hospitality and Tourism said this was thought-provoking and had the effect of improving the class and her teaching.

Faculty do not do all of this CMS work by themselves. Staff members at the campus Learning Technology Centers describe how faculty members come to them with what they perceive to be technology problems. In the process of addressing them, they uncover pedagogical challenges, and faculty either address that themselves or work with others at the Learning Technology Centers to do so.

Some faculty are skeptical about the extent to which CMS use improves pedagogy, even inadvertently. Bill Cerbin, assistant to the provost, as well as a psychology department faculty member at UW–La Crosse, argues that course management systems have not changed pedagogy, with the possible exception of the brave souls who have really experimented with them and pushed them to the limits. As a thoughtful observer of technology use, Cerbin believes that most faculty simply assimilate the technology into what they already do. He adds that technology use does not force a process of rethinking; rather, faculty use it only where it fits and where it is convenient. While some of this skepticism may be quite appropriate, the evidence presented here makes it hard to deny that CMS use is changing faculty teaching.
Endnotes

1. As one respondent to the online survey commented, “It doesn’t make any sense to take extra time to put syllabi and assignments on a Web site when the information can be more easily distributed in class. How is it pedagogically sound to make it easier for a student to pass a course by skipping class and getting the information another way?”

2. Numerous UWS departments and campuses have used, are using, or are experimenting with a range of tools to facilitate class discussions outside of a CMS. These tools include public folders and Outlook in an Exchange server environment, as well as third-party tools such as WebBoard. Some campuses are now taking steps to build discussion tools into the campus portal. It is interesting to consider what impact this will have on CMS use.