One of the key themes discussed earlier in the study is the steady growth in the number of e-learning courses offered by respondent institutions. Although their core strategic motives might vary, we found that institutions generally sought to:
- institutionalize e-learning, thereby transforming the entire teaching and learning experience;
- accommodate growing student enrollment;
- sustain academic diversity; and
- gain a competitive advantage.

Whatever the reason, all share the same reality: the need to foster a supportive climate in all phases and facets of their e-learning program. An important dimension of these programs is the support faculty receives from their institutions and departments as they develop and maintain their e-learning curricula. ECAR’s study *Faculty Use of Course Management Systems* touched on the importance of administrative support for course management systems (a key driver of e-learning adoption): “Administrative leadership plays a strong role in shaping and encouraging faculty CMS use. Where strong and positive administrative leadership is exercised, it has resulted in extensive and effective faculty CMS use. Where there is little or poor leadership, adoption rates are lower, CMS use is less effective, and use often engenders student resistance and resentment.”

Most respondents (83 percent) see their institutions as generally supporting the incorporation of technology into their instructional practices, as Figure 9-1 shows. The
nature of this support varies from “gentle” or “passive” support to highly activist approaches. Among the former is Colgate’s: “We help those who wish to be enabled and let them tell their colleagues about it,” said David Baird, director, innovative technology solutions for learning. “We get more interest through word of mouth and gentle leading than through any top-down kind of approach.” By comparison, according to Joel Hartman, vice provost for information technologies and resources at the University of Central Florida (UCF), “Faculty are recommended by their college or department to teach a specific course in one of our online modalities because it’s now part of their strategies, but faculty are not required to participate.” Virginia Tech uses a mixed approach: it does not mandate attendance in its Faculty Development Institute (FDI) but does tie hardware, software, and network upgrades to FDI participation.

Formal policies are important, however, especially for promotion and tenure consideration. “When a faculty member expends a great deal of time and effort to improve his or her instructional effectiveness by developing an e-learning course, that effort may count more toward tenure and promotion in some colleges and less in others,” UCF’s Hartman explained. “Partially as a result of these differences, the level of faculty participation varies from college to college. However, roughly half of the faculty engaged in online learning hold the rank of associate or full professor, which suggests that it is increasingly likely that members of departmental tenure and promotion committees are cognizant of the role and importance online learning plays within the institution.” By contrast, Marquette’s Connie Bauer, associate professor of marketing, said, “Since research publications are still the major way to be rewarded and/or promoted, faculty members focus their time and energy there.” She doesn’t see this changing until the reward system does—even among younger faculty.

While tenure and promotions represent longer-term incentives to faculty e-learning adoption, institutions have also needed to offer short-term “carrots” to tip the perceived benefit balance. As Table 9-1 shows, more than two-thirds of respondents have defined practices to encourage instructors to integrate technology with instruction. Stipends and release time are the two most frequently identified; only 12 percent offer special considerations for promotion or tenure. While almost a third of institutions overall reported no special practices, baccalaureate institutions are even less likely to have defined any, with 42 percent offering no special practices. Perhaps this shouldn’t be surprising, since baccalaureate institutions also tend to lag overall in e-learning course offerings. In contrast, only 10 percent of associate institution respondents offer no incentives.

Equally important to e-learning’s success is policy coherence across the organization. UCF’s Hartman called this the importance of “a holistic approach” to developing and supporting e-learning. “Different schools or colleges value the three basic things that faculty are supposed to do—teaching, research, and service—in different ways,” he said. “In the College of Education, where e-learning was born at UCF, research into teaching and teaching effectiveness is highly valued. In other colleges, it may be less so. It has to do with the relative teaching-versus-research focus in the respective colleges.”

To achieve coherence across e-learning practices, survey respondents believe adequate funding presents the leading institutional challenge to supporting instructors’ technology use in class, as Figure 9-2 shows.
Table 9-1. Institutional Policies to Encourage Technology Integration with Instruction
Base: Total Respondents \((N = 258)\), Multiple Responses Allowed

<table>
<thead>
<tr>
<th>Incentive</th>
<th>Associate Institutions ((N = 40)), Percentage</th>
<th>Baccalaureate Institutions ((N = 48)), Percentage</th>
<th>Master’s Institutions ((N = 77)), Percentage</th>
<th>Doctoral Institutions ((N = 57)), Percentage</th>
<th>All Respondents ((N = 258)), Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stipends</td>
<td>65</td>
<td>35</td>
<td>57</td>
<td>46</td>
<td>47</td>
</tr>
<tr>
<td>Release Time</td>
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<td>19</td>
<td>47</td>
<td>44</td>
<td>43</td>
</tr>
<tr>
<td>Special Consideration for Promotions/Tenure</td>
<td>13</td>
<td>15</td>
<td>12</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Other</td>
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<td>31</td>
<td>25</td>
<td>44</td>
<td>30</td>
</tr>
<tr>
<td>Mandatory (No Special Considerations)</td>
<td>10</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>No Institutional Practices</td>
<td>10</td>
<td>42</td>
<td>25</td>
<td>26</td>
<td>29</td>
</tr>
</tbody>
</table>

Figure 9-2. Respondents’ View of Institutional Challenges to Support Instructors’ Use of Technology in Class
Base: All Respondents \((N = 260)\)
The Importance of Administrative Support

As mentioned, institutions interviewed stressed the importance of building a common vision about e-learning’s role in their institutions and promoting it from the top down. A common vision provides a communication platform from which administration and instructors can build consensus and buy-in either through task forces or advisory committees. It lets an institution create a set of e-learning expectations and promote cultural change as these expectations filter down throughout the institution. “We’ve understood that e-learning is at root an instructional activity,” UCF’s Hartman said. “It has to fit into the faculty culture and the campus environment, and finally it has to meet institutional goals.”

The Changing Nature of E-Learning Support Requirements

During e-learning’s introductory phase, instructors and students become accustomed to adapting, teaching, and taking e-learning courses. At this point institutions focus primarily on establishing a base skill set—for example, CMS proficiency and basic computer skills. Over time, resource requirements evolve as training begins to yield higher proficiency, new hires and students possess better technical skills, and late or reluctant computer adopters retire. As early adopters gain mainstream technical skills, some institutions have noted that new technical requirements emerge. In some cases, the technical issues evolve from basic “how-to” support to more advanced issues. One key example is multimedia.

Technical proficiency also spawns more pedagogical requests. “Every new faculty member comes to us a lot more computer savvy, and the need for basic training declines,” noted Colgate’s Judy Doherty, director of technology education. “The next time we see current faculty, their requests represent the next notch up—moving from how to scan a picture to how to use a series of images across courses or use more visual aids in their instruction.” Fort Hays’s Dennis King, director, Center for Teaching Excellence and Learning Technology, concurred: “Three or four years ago, we spent a lot of our time teaching the technology as well as trying to teach the content. Now I think we have centered enough on the effective uses of the technology that we can focus on the content.” The shift to pedagogical needs proves especially important because some institutions do not offer resources to address pedagogically oriented course/curriculum and support requirements.

As needs change, institutions like Virginia Tech evolve training course topics and design accordingly. “We use our training and workshops as channels to help introduce faculty to new ideas, new interventions, and innovations,” explained John Moore. “Our early training work was ‘one size fits all.’ We respond to emerging faculty needs by adding program tracks and online training. For example, we now offer 12 different training tracks at the Faculty Development Institute; [that’s] 12 choices to learn rather different topics in each of those three-day workshops. One track is an independent study approach, so if ‘none of the above’ suits the faculty member, then we’ll try to do something on a custom basis.”

Others review resources constantly to provide the optimal mix. “If it is not giving you a good bang for the buck, you have to replace it or find something else,” explained Georgia State’s Carolyn Gard, director of university educational technology services. “You cannot keep your core services relevant if you don’t discontinue your old services.” Staff member departures also present an opportunity to evaluate staffing needs and ad-
just accordingly. One area for staff expansion is instruction design, to address the growing emphasis on pedagogical issues.

Institutions interviewed find they must scale as well as evolve e-learning resources over time. This is especially true if institutions must support both early adopters’ evolving needs and the basic technical needs of the second wave of e-learning participants, who, as St. Philip’s Julia Briggs, director of instructional technology, suggested, “have a steeper learning curve than the initial innovators.” Current resources may no longer be able to handle the resulting support volume. Institutions interviewed suggested various solutions, some of which are just plain common sense: for example, use each support request as a means to promote technical self-sufficiency or to incorporate easy-to-use tools to facilitate adoption, training, and support. Other solutions also emerged:

✦ **Integrate resources as much as possible to promote greater efficiencies.**

Colgate’s Case Library and Information Technology Center is centralizing IT staff, librarians, networking infrastructure, multimedia facilities, and library collection into one location. “We are taking a traditional library where students and faculty go to consume information and transforming it into a place to access content, to manipulate it, and to create unique and new content,” said Colgate’s David Gregory, chief IT officer.

✦ **Use technology as much as possible to refocus staff members.**

“We are constantly looking for ways to let a software package do something for us where we once used personnel,” said Georgia State’s Gard. “One example is lab management software.” Other examples include online training tools, tutorials, and FAQs.

✦ **Leverage resources in consortium, system, or open-source agreements.**

For example, Georgia State is working with Georgia Perimeter College (a Georgia State feeder college) to develop objects for a commonly offered WebCT course. “We have already developed the course,” said Gard. “Now we’re looking at the different modules that both schools will be offering, to create designs that will benefit both institutions.” Georgia’s University System has an advanced learning technology group that is developing an online version of many core courses offered across the university system. “It gives us a set of fully developed online courses,” Gard said. “I see more sharing at the state level as it gives us rich resources that we don’t have the staff to create ourselves.”

✦ **Develop common processes and tools to achieve economies of scale.**

A good example is UCF, which employs a highly systematized process to develop and maintain its online courses. “We take a systems approach and use scalable processes,” explained UCF’s Hartman.

✦ **Augment central resources at the department level.**

For example, an institution might use locally based instructional designers to fulfill department-specific pedagogical needs. “We feel that instructional expertise has to be decentralized in the departments—one instructional design specialist per department,” said Penn State’s David DiBiase, head of the E-Education Institute, College of Earth and Mineral Sciences. “Everyone agrees that faculty members will be more inclined to adopt e-learning when there is somebody right down the hall that is familiar with them and their specialty.”

### Funding Increasing E-Learning Resource Demands

The need to enhance e-learning support resources comes at a time of tight budgets, with public institutions facing significant cuts in their state revenue allocations. Pri-
vate institutions that depend highly on rising tuition and endowments face similar pressures. “As more technology is used,” stated Pace’s James Stenerson, executive director, Center for Teaching, Learning & Technology, “there hasn’t been a corresponding growth in the budget.” He estimates his area needs an overall 10 percent budget increase to address technology needs. These pressures have made funding one of the most important challenges to institutions with current e-learning programs. In fact, the largest proportion of respondents identified the issue of securing funding for e-learning as a major challenge to their programs (Figure 9-2).

Figures 9-3 and 9-4 reflect the same general sentiment. Indeed, fewer than half of the institutions surveyed feel that funding is adequate for e-learning support for both faculty and students; the same level of sentiment was expressed for all e-learning types. Just one in 10 respondents feel strongly that e-learning is adequately funded. Lack of funding threatens to curtail e-learning activities at some institutions. Specific departments or colleges will create new e-learning courses only if the funding is available. At other institutions, lack of funding threatens some basic e-learning support resources.

Although the budgetary issues are difficult to overcome, respondents have considered some potential solutions:

- Leverage consortia and system-wide solutions to scale resources and spread costs across several institutions. This solution is particularly popular for course management systems, through either licensing agreements or open-source solutions.
- Increase reliance on fees, such as student technology fees, to fund resources such as online training.
- Recycle department dollars whenever possible, especially redirecting staff money as it arises from a staff resignation or retirement. “Times are tough and new money is hard to come by,” stated Penn State’s DiBiase. “Recycled funds are always available, and if you can get people to think strategically about it, a lot of things are possible. People retire, and as things change administratively, you can reallocate funds.”

Measuring the Effectiveness of E-Learning Support

Stacks of e-mail and glowing testimonials are the qualitative feedback that e-learning support providers receive from satisfied instructors about their experiences. Such comments lift department morale, but in difficult financial times, more substantive measurements may be needed to justify additional expenditures for e-learning support. These may not be easy to find.

Course management systems can provide some statistics—the number of instructors using it, the number of students enrolled in a class, and so on—but these do not show the entire picture. “We keep looking for the best metric. In some ways if you only look at faculty use, you get a skewed figure,” explained Penn State’s John Harwood, senior director, teaching and learning with technology. “In a department where all its faculty members teach low-enrollment courses and course management usage is high, you would say that we have a lot of faculty teaching with technology. The overall impact on Penn State, however, is small. That has a very different implication from faculty use at the College of Business, which is huge at Penn State.”

Another commonly used quantitative tool is the survey, used to assess students’ e-learning class experiences or instructors’ central resource experiences. For example, the University of Washington uses student and instructor evaluations not only to assess
the course’s content and the faculty member’s performance but also to solicit opinions about technical help, course design, and the learning management system.

But Penn State’s Harwood described the real problem. “With our technology systems, I can pull a lot of data,” he stated. “What I can’t access easily is how people feel about things, so we use the surveys to take the temperature of our users. But I don’t have solid data on our impact or our success. I can give you numbers, but I think our numbers are really soft.” Colgate’s Gregory stated, “I need nonanecdotal data or nonspurious research that shows the effectiveness of e-learning. If I am going to invest in an enterprise version of our course management system, I want some hard data that says here is how it has improved student performance.”

Colgate mentioned using the Teaching, Learning, and Technology Group’s Flashlight program as one way to study and assess technology’s impact in its classes. Virginia

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### Figure 9-3. Perceived Adequacy of IT Spending to Support Various Modes of Students’ E-Learning Needs
Base: Respondents Providing Type of Course (Online, \(N = 213\); Hybrid, \(N = 224\); Traditional, \(N = 260\))

- Spending is adequate to address traditional courses with technical support:
  - Strongly Agree: 8%
  - Somewhat Agree: 33%
- Spending is adequate to address hybrid course support:
  - Strongly Agree: 8%
  - Somewhat Agree: 28%
- Spending is adequate to address online distance learning support:
  - Strongly Agree: 9%
  - Somewhat Agree: 30%

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### Figure 9-4. Perceived Adequacy of IT Spending to Support Various Modes of Instructors’ E-Learning Needs
Base: Respondents Providing Type of Course (Online, \(N = 216\); Hybrid, \(N = 227\); Traditional, \(N = 260\))

- Spending is adequate to address traditional courses with technical support:
  - Strongly Agree: 7%
  - Somewhat Agree: 29%
- Spending is adequate to address hybrid course support:
  - Strongly Agree: 7%
  - Somewhat Agree: 27%
- Spending is adequate to address online distance-learning support:
  - Strongly Agree: 11%
  - Somewhat Agree: 26%
Tech has performed some quantitative measures comparing its Math Emporium (a computer lab-based course alternative to classroom-based math instruction) to similar classroom-based courses. “To build our Math Emporium, we received a Pew Course Redesign Grant. This enabled us to get really good metrics on costs, retention, persistence rates, and more by using algorithms designed for the grant process,” said Virginia Tech’s Anne Moore, associate vice president for learning technologies and director of information technology initiatives.

“For students who have taken courses at the Math Emporium, we found failure rates are down, persistence rates are up, retention rates are up, and, over time, the students’ GPA has averaged out to the usual curve.” The Math Emporium courses also cost less than traditional classroom-based math classes. Moore said that teaching the course traditionally in a classroom cost $74 per student, versus $24 per student in the Math Emporium. With faculty salary increases and improved economies of scale over several years, the differential increased from $91 per student in the traditional course versus $21 per student in the technology course.

Moore admitted, however, that “when you compare a standard course with a course that is technology based, you are comparing apples and oranges. What you want to know, regardless of delivery mode, is whether the students are learning the things that they should know and be able to do after studying a subject, and whether they are engaged in the kinds of activities that underpin learning.”

Endnotes