ACCEL LAPTOP PILOT ASSESSMENT

Report

Lakeshore Technical College

May 5, 1998
Executive Summary

In May of 1996 a group of the faculty at Lakeshore Technical College established an objective to integrate the use of laptop computers into the Associate Degree Materials Management program. The objective received the support as a pilot project by the LTC administration. They then developed an implementation plan and started instructor training in June of 1996. With the help of a State Incentive Grant, they redesigned course curriculums to integrate the laptop computers. Students in the program are employed adults, mostly female, around 35 years of age, have high school diplomas, and will make 144 trips traveling 5,700 miles to campus before they complete their degree.

They established that five criteria evaluated the program. Current students, prospective students, and faculty were surveyed. Results show strong support by current students for the program. Prospective students also showed interest in the program. Faculty support was extremely positive. Student’s primary application has been communication with students and the instructor and accessing resources via the Internet.

They made several recommendations regarding instruction, operations, and human resources. They made three key recommendations including: (1) continue the laptop program and roll-out to other programs; (2) adopt the laptop/universal access effort as a strategic direction; and (3) select a business partner to help with the administration, training, and financing of the program.
Purpose of the Project

The purpose of the project was to develop and implement a plan to integrate the use of laptop computers into the ACCEL Materials Management program. Through this project the college will gain valuable information on applying the universal access strategy to other areas.

Objectives

Providing computer access to ACCEL students will accomplish the following objectives:

1. Provide student experiences involving technology that is being used in the workplace now and in the future.
2. Improve communication by providing connectivity between students and instructors via e-mail.
3. Increase access to knowledge bases by providing connections to data bases via the Internet.
4. Provide student experiences involving software that will enhance learning through the curriculum.
5. Develop a structure for leasing computers to students that can be applied to other programs.

Background

The faculty in the materials management program established an objective to integrate the use of laptop computers into the curriculum in May 1996. The program is delivered in the ACCEL format and serves an employed adult market. The objective received the support of the program advisory committee, the student operating committee, and the LTC administration.

The ACCEL Self Directed Work Team then developed a plan to address both instructional and administrative issues. Instructors started a training program in
June of 1996 and began redesigning the course curriculums to integrate the laptop computers. A State Incentive Grant was received and provided financial assistance for the training and curriculum development. Laptop computers were placed in two cycles. The first cycle started in April 1997 and the second in January 1998.

**Customer Demographics**

The students in the laptop program are employed adults with an average age of 35. Seventy-six percent are female and 24% are male. These demographics are similar to the overall materials management program where the average age is 35 but the percentage of female participants is lower at 64% and males in the program is 36%. Most of the students have high school diplomas with a few holding bachelor degrees. Ninety-seven percent are employed full-time. Most are employed in the Lakeshore district. Not one is employed in Cleveland. During the program students will make 144 trips to LTC traveling an average of 5,700 miles.

**Evaluation Criteria**

Evaluation of the laptop project was based on criteria that the ACCEL Self Directed Work Team in conjunction established with the research department. The five criteria were:

1. Are students more viable in the workplace?
2. Has student learning been enhanced?
3. Has faculty productivity been improved?
4. Is the laptop program cost effective?
5. Are prospective students interested in the laptop program?

**Results**

Fifteen students in the ACCEL Materials Management program were administered a survey after the first course was completed and then again after the sixth course. The survey consisted of ten questions - eight scored and two open-ended. Group Systems V electronic meeting software from Ventana Corporation was used to conduct the survey. A five-point scale was used to capture the response to the eight questions. The five points
on the scale were: (a) strongly agree - 5 points, (b) agree - 4 points, (c) neutral - 3 points, (d) disagree - 2 points, and (e) strongly disagree - 1 point.

Results suggest there is strong student support for laptop computers in the program. Overall response on July 22, 1997 had a mean of 3.73. After the second assessment on March 3, 1998 the mean had risen to 4.11. Results for each criterion follow.

“Are students more viable in the workplace?”
Criteria 1

Six questions were asked including one open-ended question. There was improvement in the mean for each question with the greatest change in the question related to using work time more effectively. Table 1 lists the means for each question.

Table 1
Student Responses to Criteria 1

<table>
<thead>
<tr>
<th>Because of your experiences in using a laptop in the ACCEL program, do you feel you can now:</th>
<th>7/22/97</th>
<th>3/3/98</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Use work time more effectively?</td>
<td>3.33</td>
<td>4.21</td>
</tr>
<tr>
<td>2. Be more productive on the job?</td>
<td>3.67</td>
<td>3.93</td>
</tr>
<tr>
<td>3. Access information more easily?</td>
<td>3.87</td>
<td>4.36</td>
</tr>
<tr>
<td>4. Accommodate changes in your job more easily?</td>
<td>3.80</td>
<td>3.93</td>
</tr>
<tr>
<td>5. Be more effective in your personal life?</td>
<td>3.80</td>
<td>3.86</td>
</tr>
</tbody>
</table>

An open-ended question was also asked: “How have you been able to apply the computer skills you have acquired through this program?” After the first survey students had not yet had a chance to apply the skills or were using their skills to take class notes. After the second survey students were applying their skills on the job, communicating with others via e-mail and using the computer in completing class work and assignments. Table 2 lists a summary of the responses to the question.
Table 2
Responses to Criteria 1 Open-Ended Question

*How have you been able to apply the computer skill you have acquired through this program?*

<table>
<thead>
<tr>
<th>7/22/97</th>
<th>3/3/98</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Haven’t been able to apply.</td>
<td>1. Use on the job.</td>
</tr>
<tr>
<td>2. Taking class notes.</td>
<td>2. Communication with others via e-mail.</td>
</tr>
<tr>
<td>3. Learned to use software.</td>
<td>3. Completing classwork and assignments.</td>
</tr>
<tr>
<td></td>
<td>4. Accessing Internet resources.</td>
</tr>
</tbody>
</table>

“Has student learning been enhanced?”

Criteria 2

Students responded to two questions. There was an increase in the mean for each question with the greatest increase in “learning to apply theory in a variety of ways.” Table 3 lists the means for each question.

Table 3
Student Responses to Criteria 3

<table>
<thead>
<tr>
<th>Question. Because of your experiences in the ACCEL program, do you feel by using the laptop, you are more often able to:</th>
<th>7/22/97</th>
<th>3/3/98</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Learn to apply theory in a variety of ways?</td>
<td>3.33</td>
<td>4.00</td>
</tr>
<tr>
<td>2. Use a wider variety of ways to learn?</td>
<td>4.20</td>
<td>4.36</td>
</tr>
</tbody>
</table>

An open-ended question was also asked: “How have you used the computer to improve learning?” Initially students used the laptop to access the Internet. After the survey their uses expanded to accessing course materials and e-mail to collaborate with classmates. Table 4 lists the summarized responses to the question.
Responses to Criteria 2 Open-Ended Question

**How have you used the computer to improve learning?**

<table>
<thead>
<tr>
<th>7/22/97</th>
<th>3/3/98</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Using Internet as a resource.</td>
<td>1. Using Internet as a resource.</td>
</tr>
<tr>
<td>2. Have not used.</td>
<td>2. Access to course materials.</td>
</tr>
<tr>
<td></td>
<td>3. Using e-mail to collaborate with classmates.</td>
</tr>
</tbody>
</table>

“Has faculty productivity been improved?”

**Criteria 3**

Five faculty members who taught in the laptop program were surveyed. Four questions, including one open-ended question, were asked. Only one survey was administered to faculty members.

An open-ended question was asked, “how have you used the laptop computer to improve your productivity? Responses showed specific areas where instructors are spending less time doing things such as making copies and overheads, and revising syllabi. It was also said that communicating with students was easier. Table 6 lists a summary of the responses to this question.

Table 5

Faculty Responses to Criteria 3

<table>
<thead>
<tr>
<th>Because of using laptops in the design of learning experiences you provided:</th>
<th>4/8/98</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Are more alternatives for learning provided?</td>
<td>5</td>
</tr>
<tr>
<td>2. Are higher level learning experiences (application/synthesis) provided than not using laptops?</td>
<td>5</td>
</tr>
<tr>
<td>3. Are class sessions the same length?</td>
<td>4.75</td>
</tr>
</tbody>
</table>
Table 6
Responses to Criteria 3 Open-Ended Question

*How have you used the laptop computer to improve your productivity?*

3/3/98

1. Less time making overheads.
2. Easier to revise a syllabus therefore less time spent reproducing it.
3. Curriculum standardization has eliminated the need to rewrite based on different instructors.
4. Communication via e-mail with students.
5. Make fewer copies.
6. Use PowerPoint.

“*Is the program cost effective?*”

Criteria 4

Students were asked if using the laptop was worth the extra cost. The mean improved from 3.80 to 4.21 suggesting agreement that it was worth the extra cost. Table 6 list the means.

Table 6
Student Responses to Criteria 4

<table>
<thead>
<tr>
<th></th>
<th>7/22/97</th>
<th>4/8/98</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Is the laptop worth the extra cost?</em></td>
<td>3.80</td>
<td>4.21</td>
</tr>
</tbody>
</table>

Four other areas were looked at that impact the cost effectiveness of the program. Impact on staff, curriculum development, retention, and other courses/services generated were studied.

1. *Impact on Staff.* The staffing levels for support were also analyzed. Table 7 lists the support staff position and the impact the program has on their workload.
Table 7
Support Staff Impact

<table>
<thead>
<tr>
<th>Position</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Administrative Assistant - ACCEL</td>
<td>Additional time spent generating invoices and problem solving. Coordinates all paperwork.</td>
</tr>
<tr>
<td>2. Computer Services Technician</td>
<td>Sets up computers and trouble shoots problems.</td>
</tr>
<tr>
<td>3. Help Desk Specialist</td>
<td>Conducts orientation session and helps students with problems.</td>
</tr>
<tr>
<td>4. Financial Services</td>
<td>Accounting and billing for PCS.</td>
</tr>
<tr>
<td>5. Computer Instructor</td>
<td>Three training sessions totaling 9 to 12 hours.</td>
</tr>
</tbody>
</table>

2. **Curriculum development.** A total of 19 course curriculums were redesigned. Four faculty members were paid a total of $17,005 to redesign the course curriculums to incorporate the use of laptop computers. A state incentive grant was received for $16,000 to offset these costs.

3. **Retention.** Demand for the laptop program was such that when a person dropped there was always someone waiting to enroll in the program. This has allowed program enrollments to be maintained at 18 per cycle compared with other materials management cycles where there is an average of 16 enrolled. That is 12.5% increase. Additionally, program starts have doubled. In 1996 and 1997 one new cycle was started each year. In 1998 two new cycles were started. This additional start was due to the demand for the laptop program.

4. **Other courses/services generated.** A total of 10 credits in computer related training were taken by the 18 students in the enrolled in the first laptop cycle. These 10 credits added .33 to the college’s full-time equivalent student count and generated $542 in additional revenue.
“Are prospective students interested in the program?”
Criteria 5

A survey was conducted in June of 1997 to determine if prospective students were interested in the laptop program. Seventeen students responded to three questions related to their interest and sentiment regarding the requirement to purchase a laptop as part of the materials management program.

Table 8 lists the responses to the questions. Seventy-six percent of the respondents indicated they would be interested in a program that required a laptop computer and saw an advantage to using it. When asked if they would be willing to pay $100 per course, 35% indicated “yes” they would and 41% indicated “maybe.” Twenty-four percent indicated “no” they would not be willing to pay the $100 per course.

Table 8
Responses to Criteria 5

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Maybe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would you be interested in a program that requires a laptop</td>
<td>13</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>computer?</td>
<td>76%</td>
<td>24%</td>
<td>0%</td>
</tr>
<tr>
<td>Do you see an advantage in learning with the use of the</td>
<td>13</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>laptop computer?</td>
<td>76%</td>
<td>0%</td>
<td>24%</td>
</tr>
<tr>
<td>If computers were required, would you be willing to pay</td>
<td>6</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>$100 per course in addition to the tuition?</td>
<td>35%</td>
<td>24%</td>
<td>41%</td>
</tr>
</tbody>
</table>

Prospective students expressed interest and see the value but hesitate with making the additional expenditure. Students in the course agreed it was worth the value. Students need to experience the laptop integration in the course before they see the value.
Recommendations for ACCEL

Based on the results, the ACCEL Self Directed Work Team has the following recommendations for the ACCEL Materials Management programs.

**Instruction**

- Continue the laptop program for materials management and other ACCEL programs. Current students and faculty both indicated through survey responses positive support for the program.
- Integrate instructional television and laptop for the delivery of ACCEL Health Care Materials Management. Because students in the program are working adults this would help improve communication and access to resources.
- Integrate into the general education core. Students did not perceive the laptop to be of value unless it was integrated into the course.
- Computer training needs to adapt to the needs of the laptop student. Students and faculty have both indicated that the current training is not consistent with the expectations of the program. Timely and accessible training should be provided to students delivered in a variety of ways to accommodate the time, pace, place, different skills levels of individual students. Training needs to more closely align with the courses and skills need to be reinforced many times throughout the program.

**Operations**

- Place laptops when students enter the program. Students should begin using the technology immediately. This means that all courses in the program need to integrate the use of the laptop. Students indicated a need to use the laptop immediately so they could get as much exposure as possible.
- Develop an option for students to use their own hardware if it meets the standards set by the college. Some students have laptops and should not be required to duplicate the purchase.
- Continue providing help desk support to students in the ACCEL program. The help desk provides a single point of contact and a system for tracking customer problems.

**Human Resources**
• Staff involved need to engage in continual skill building tailored to their needs. Development needs to be progressive, building on previous successes. Exposure to new technologies and methods of integration are critical.
• New staff hired should be receptive to the integration of technology into courses and have the appropriate skills.

**Recommendations for the College**

Based on the results, the ACCEL Self Directed Work Team offers the following recommendations for consideration by Lakeshore Technical College.

**Instruction**

• The laptop initiative should be identified as a strategic objective in the strategic plan.
• Expand the implementation of the laptop program by targeting specific programs. Some programs that may benefit from the integration of laptops into the curriculum are: (a) accounting, (b) quality assurance, (c) paralegal, (d) distance education programs, (e) CIS network specialist, (f) marketing, (g) administrative assistant, and (h) court and conference reporting. Programs where there is a workplace demand, serve students that travel from a distance, and where electronic commerce is prevalent in the workplace are ideal candidates.
• Incorporate into general education courses.
• Integrate ACCEL/distance learning/laptops to meet student and employer needs.
• Use Lotus Learning Space to manage the web based training environment.
• Provide remote access to services such as library, student services, and job placement.
• Provide staff access to CBT systems training software to meet their training needs.
• Address the issues created by having a general education core curriculum and a technical curriculum core. Conflicts are created for students and staff.

**Operations**

• Select a business partner to assist with the training, administration, and financing of the program.
• Resources need to be allocated to support curriculum development and integration efforts.
• Redesign administrative systems and processes to accommodate the needs created by the ACCEL laptop program for invoicing, registration, and scheduling.
• Appoint a team responsible for administration of the laptop initiative across the college. The current team should continue as this team with expanded goals. This team has the authority to make decisions regarding the administration of the initiative.

• Assign the help desk as the single point of contact for problem resolution for all laptop issues.

• Wire classrooms to accommodate laptop use.

• Provide network ports and power for laptops at locations throughout the campus.

• Assemble a handbook outlining the policies and procedures for the program and incorporate into the Green Book.

• Expand technology support in the evening to support instructors and students.

• Enrollment specialists and program counselors should be assigned responsibility for communicating specifics of the program to students.

• Computer services establish hardware specifications consistent with LTC purchased equipment.

• Programs integrating the laptop into their programs should have the support of a team to include instructional design, computer services, help desk, and program counselors. This will help address consistency issues in the communication.

**Human Resources**

• Provide CDROM software to students to meet their training needs.

• Additional support staff should be allocated to the ACCEL and laptop initiatives.

• Provide awareness sessions to staff.
**Next Step**

The following steps should be taken to implement the initiative.

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 5</td>
<td>Report out.</td>
</tr>
<tr>
<td>May 21</td>
<td>Executive committee action.</td>
</tr>
<tr>
<td>May 28</td>
<td>ThinkPadU inservice in Madison</td>
</tr>
<tr>
<td>July</td>
<td>Program administration detail with business partner and staff.</td>
</tr>
<tr>
<td>August</td>
<td>Awareness session with interested staff.</td>
</tr>
<tr>
<td>September</td>
<td>Place computers in 4th ACCEL Materials Management Cycle.</td>
</tr>
<tr>
<td>September</td>
<td>IDIC begins working with interested staff.</td>
</tr>
<tr>
<td>February</td>
<td>School-wide inservice.</td>
</tr>
</tbody>
</table>
References


