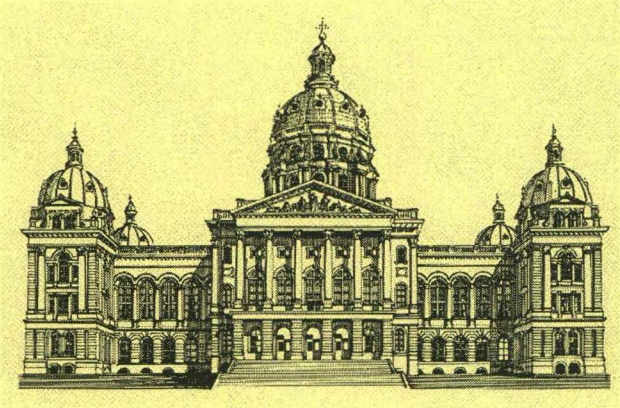
FINAL REPORT

IOWA LEARNING TECHNOLOGY STUDY COMMITTEE



Presented to the
LEGISLATIVE COUNCIL
and the
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January 2005

Prepared by the
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Legislative Services Agency

FINAL REPORT

Iowa Learning Technology Study Committee

January 2005

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Senator Daryl Beall
Senator Robert E. Dvorsky
Senator John Putney
Senator Ron Wieck

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AUTHORIZATION AND APPOINTMENT

The Legislative Council established the Iowa Learning Technology Study Committee and authorized three meeting days. The Committee was charged with developing a learning technology plan, including proposed policies and budgets for plan components; addressing professional development, implementation strategies and other phase-in issues, strategies for coordinating with existing technology initiatives and resources, and procedures for data tracking and assessment; and incorporating guiding principles outlined in 2004 Iowa Acts, S.F. 2298 (Ch. 1175), section 244.

I. September 30, 2004, Meeting.

A. Iowa School District Presentations.

1. **Mount Ayr Community School District.** Mount Ayr Community School District Superintendent William Decker noted that his countywide school district is very rural, making access to the Internet and high-speed Internet connections a challenge for families living in his district. In the 2004-2005 school year, Mount Ayr began implementing a laptop computer program, the purpose of which is to reduce the socioeconomic gap and raise achievement levels. Under the program, students and staff in grades seven and eight are provided with laptops for use on and off school grounds. The district began preparing staff for the laptops in the summer and provided laptops to the staff in September 2004. The program is already energizing the district's students and staff, though students will not receive their laptops for a few weeks. The district funded the program with local moneys, which would otherwise have been used to update two computer labs, and with a small Star Schools grant. Students are responsible for an annual $25 insurance payment. The district will measure the success of the program using assessment tools the district was already using, such as the Iowa Test of Basic Skills.

2. **Carroll Community School District.** Carroll Community School District Superintendent Rob Cordes observed that student achievement is lower at the seventh grade level than at any other grade level. The Carroll district's laptop program is intended to excite seventh grade students about education. Students have possession of the laptop day and night during the school year. Since the laptop program began in the 2003-2004 school year, students, especially those requiring special education, have become engaged, and teachers have become facilitators. The past year has seen increases in the quality and quantity of writing skills and improved critical thinking skills, though because the district also began using graphic organizers (an instructional tool used to illustrate a student's or class's prior knowledge about a topic or section of text) and using different instructional strategies, he cannot attribute the increases in student achievement solely to the laptop program. Students who are not eligible for free or reduced price meals pay an annual $15 insurance fee. Superintendent Cordes anticipates that the district will eventually move toward online textbooks. Eighth graders who used the laptops last year, and who must this year use a computer lab, were disappointed that the program is not in use at the eighth grade level.

B. Michigan Virtual University Teleconference.

Dr. Bruce Montgomery, Vice President of Michigan Virtual University (MVU), made a presentation to the Committee via teleconference. MVU is a private, not-for-profit Michigan corporation established in 1998 to deliver online education and training opportunities to the

Michigan workforce. Together with the University of Michigan and the Michigan Department of Education, MVU operates Freedom to Learn, an education program to improve student achievement in core academic subjects by providing Michigan's students with access to one-to-one wireless technology. The program's two purposes are to increase student achievement and to expand technology opportunities to students, especially students in rural and high-priority schools. Michigan experienced a major budget deficit coinciding with the program's initial implementation, requiring that the program prioritize implementation rather than implement statewide. In 2002-2003 it provided demonstration grants to 15 school districts (177 buildings) of differing sizes, for use at grade levels determined by each district, from K-12. The corporation is moving toward establishing the program at the middle school levels, starting with grade six. The program currently serves high-need, high-priority schools, but the state is interested in expanding the program to more districts. The program uses Hewlett-Packard computers and Microsoft software. Funding remains a challenge. The state is funding the program using federal moneys ($26 million) available under Title II of the No Child Left Behind Act of 2001 (NCLB) and an appropriation of $3.7 million in state funds is likely. Dr. Montgomery advised members to study the problems inherent in picking a single-solution provider when a number of schools will already have technology in place. He also suggested that each building assign someone to mentor teachers regarding professional development and opportunities for using technology in the classroom.

C. Computer Industry Presentations.

1. **Apple Computer** representative, Ms. Jodie Butler, Manager of Strategic Relations, Education Division, briefly described legislative efforts to pass technology initiatives in other states, and various statewide, county, and school district technology initiatives that are taking place in other states. She then introduced Mr. Chris Toy, Principal of the Freeport Middle School in Freeport, Maine. Mr. Toy described the Maine Learning Technology Initiative (MLTI), which was originally proposed by Governor Angus King. Governor King created a task force that worked for a year to study the idea, develop a framework, and issue a request for proposals. Apple contributed to and supported the effort. In 2002-2003, laptops were provided to seventh grade public school students and teachers throughout Maine. The initiative was expanded to include eighth grade students and teachers in the 2003-2004 school year. The state is working to expand the program into its high schools, though currently only those high schools that can afford it are participating. Mr. Toy remarked that, within his 26 years of experience as an educational professional, the laptop initiative has made the greatest impact of any reform initiative in the classroom. He identified the initiative's clear, top-down vision as its most important feature. A research center at the University of Maine is under contract to evaluate the program. He noted that every major textbook now has an Internet component. Laptops level the playing field, making access to educational opportunities equally accessible to students. Teachers are creating

their own textbooks or collections of web pages. Students are protective of the equipment. Disciplinary problems seem to be decreasing. The initiative has leveraged other resources, such as free and open access to the EBSCO Information Services database. Staff development dollars were received from vendors who wanted to make Maine's program a success.

2. **Microsoft** representative, Mr. Brice Oakley, and members of Microsoft's Education Solutions Group, Mr. Paul Baird, Ms. Nancy Forestel, Ms. Shelley Furse, Mr. Raamel Mitchell, and Mr. Tyler Petersen, used a PowerPoint presentation to outline the following topics: Microsoft's agenda, technology paradigms, and charter; connected learning communities, the current K-12 climate, Microsoft's K-12 focus, the components of a connected learning environment; portals, customized for each school and student; student tracking and accountability possibilities; Partners in Learning programs; Microsoft's Innovative Teachers web site; and peer coaching, principal leadership, the next evolution, and Microsoft's commitment to being a learning partner to educators and education in Iowa. Ms. Furse noted that Microsoft has donated $22 million in cash and software to Iowa education.

3. **Gateway** representatives, Mr. Ralph Oxley, Mr. Todd Jolly, and Mr. Joel Breyfogle, demonstrated a Tablet PC and listed the local school districts and Iowa postsecondary institutions that use Gateway's products. Mr. Breyfogle introduced Mr. Brad Brandsrud, Assistant Principal at Watertown High School in South Dakota. Watertown is in the second year of its laptop program. The community's response to the program is generally positive. The school held three public forums and surveyed parents prior to initiating the program. The school purchased filtering technology. The school has contracted for program evaluation services from Technology and Innovation in Education, a regional, nonprofit, intermediate education agency located in Rapid City, South Dakota. Other schools in the region that send their students to Watertown for advanced courses must agree to provide their students with laptops. Use of online staff development allowed teachers to learn at their own pace. Teachers in the school have become guides to self-discovery. Parents can review their student's records, which has reduced the number of phone calls to the school, but increased the number of e-mails.

   Mr. George Tuttle, Mayor of Pocahontas and a technology consultant for the Pocahontas Area School District, was introduced and asked to describe his school district's technology program. The school district has a long history of working with and improving technology for students – even constructing a special vocational-technical building. The district wired all of its buildings in the mid-1990s, provided Internet access to all staff, switched to PCs, and moved to a Microsoft Windows platform to avoid the need to support two platforms. The district has faced declining enrollment and reductions in staff. The district recently

replaced every other piece of audiovisual equipment with Tablet PCs and projectors that work with the PCs. Local funds paid for the $200,000 program.

D. Discussion.

Committee members suggested that the next meeting be used to review with the Department of Education and area education agencies (AEAs) the current state of education technology and professional development, and the available funding sources for education technology and related needs; and to hear from a computer technology coordinator from the East Greene Community School District. It was also agreed that the third meeting date will be reserved for the consideration of recommendations.

II. November 5, 2004, Meeting.

A. East Greene Community School District.

Mr. Jon Hueser, Computer and Technology Advisor for the East Greene Community School District, described his rural school district and its success in integrating technology into the instructional programs and practices of the elementary, middle, and secondary levels. The district is located in a high-poverty area and its enrollment is declining. The district has provided leased tablet PCs and projectors to its teachers, makes use of mobile labs, and has installed multiple computer labs in each building. Parents can receive progress reports via e-mail or go online to the district's Internet site to check their student's grades. The best parental communication tool, he stated, is a web-based student information system. The district sets aside 25 percent of its staff development days for technology training. The Cisco Networking Academy is offered by the district, attracting the participation of students from four other districts. Teachers are being trained to use an antiplagiarism Internet site. Students in grades three and four meet daily for nine weeks of training using a typing software program. In grades two through six a self-paced program allows the staff to determine the technology skills of students and track their progress at each grade level. The district has lesson plans to help teachers integrate technology into their curricula.

Mr. Hueser expressed admiration for online databases purchased and made available by AEAs and the training AEAs provide. He also praised the Department of Education for its support and the ease with which district data can now be submitted to the department. He stated that schools must find ways to use the Iowa Communications Network (ICN) more, share staff via the ICN, and work more closely with community colleges to provide additional advanced courses to students. To encourage technology integration, the state should provide small grants and publish the results of the efforts funded through the grants.

B. Learning Point Associates.

Dr. Gil Valdez, Deputy Director of Learning Point Associates, which includes the North Central Regional Educational Laboratory, Director of the North Central Regional Technology in Education Consortium, and Co-Director of the North Central Eisenhower Mathematics and

Science Consortium, updated the Committee regarding research on the use of educational technology, especially the contexts in which technology works best, whether technology use increases student achievement levels, and the recent national trends in the use of educational technology. Dr. Valdez covered the following major points:

- **Teacher Professional Development.** Teacher professional development is absolutely necessary and schools should allocate 30 percent of their technology budget for that purpose. Professional development should be seen as an ongoing process. Successful education technology use requires administrators who understand and support its use, sufficient access to hardware and applications that are updated as needed and are appropriate to the learning process, a high level of technical support, and ongoing evaluation. Good practitioner preparation programs that successfully integrate technology into their curriculum have strong mentor teachers who provide honest feedback to students. Schools need to employ two or three good technical experts to assist teachers in improving their curricula. Dr. Valdez praised Iowa's AEA system as possibly the best intermediate support system in the country.
- **Research.** Research has shown that educational technology use has a small positive effect. Laptops also improve student attendance and attitudes; encourage and help sustain inquiry-oriented, project-based, and long-term classroom activities; and some studies have shown slightly higher achievement in certain subjects when laptops are used, though other laptop studies did not show similar gains. Technology can produce positive changes in instructional practices and is very important for special population students, particularly for those in need of assistive technology. Computers have a significant impact on learning and practicing 21st Century skills. One of the best uses of computers in schools is in teaching difficult concepts, which computers can animate for better comprehension by today's visual learners. Schools should begin instruction in higher mathematics and science in grades two and three.
- **Trends.** Online learning is becoming a more important instructional delivery option, especially in rural schools. Increasingly, the most recent and powerful applications and content are only available on the Internet. Computer animation is growing in importance because it provides visual and representation support to abstract concepts.

C. Iowa Department of Education.

Ms. Judy Jeffrey, Interim Director of the Iowa Department of Education, provided background on Iowa's school improvement efforts; identified recent technology enhancements to requirements for comprehensive school improvement plans; explained the department's two-phase process to study the current state of technology in Iowa and the work of the State Board Technology Advisory Committee; and listed the categories of data collected from schools. She noted that in eight years, the ratio of pupils per computer in Iowa's public schools has gone from 7.2 to 3.7. Over 90 percent of school buildings in Iowa have high-speed Internet access, and nearly half of the public school buildings in Iowa have access to a wireless network. Megabit usage per second has more than doubled since 2001.

She also provided funding and expenditure information by school district and by the state and federal governments. The state provided funding specifically for education technology from FY 1997 to FY 2002, expending $163 million in total over the six-year period. The state also receives federal funding under the Star School Program, the Technology Literacy Challenge Fund, the Enhancing Education Through Technology Program, and Evaluating State Educational Technology Programs grants. A change in the use of federal funds would significantly jeopardize some of those federal dollars. Districts using federal moneys for long-range plans could see their funding withdrawn. The state technology plan approved by the U.S. Department of Education will be valid until 2007. The state would need to submit a new application to the federal department and receive federal approval for any changes to the state plan. Under a Bill and Melinda Gates Foundation Data Driven Leadership grant, participating administrators received a $900 credit to buy technology. She promised to place the guiding principles the State Board Technology Advisory Committee developed during FY 2004 on the department's Internet site, and to provide to members a list of the school buildings that do not have access to the Internet

D. Loess Hills AEA 13.

Ms. Marilyn Weber, Administrator of the Loess Hills AEA 13 Learning Resource Center, described the agency's services and consumers, provided a history of technology use in schools, described how teachers and districts currently use technology, identified the challenges of providing and maintaining adequate instructional technology in the schools, and listed the technology support AEAs make available to school districts. She also noted the amount of financial support AEA 13 has provided for local district Internet access over the past 10 years. She noted that Iowa is required to have a strategic plan for technology by the U.S. Department of Education.

E. Des Moines Area Community College.

Ms. Ann Watts, Instructional Design Coordinator at Des Moines Area Community College (DMACC), addressed the Committee about technology at the community college level, discussed the changing focus of teaching and the importance of visual learning, and described the college's use of the SharePoint Internet portal. The portal facilitates communication within the college and is used as an outreach tool with communities, including high schools. Instructors use the portal to customize class web sites, which enables students to access information and contributes to a successful learning environment.

F. Discussion.

The Committee requested that staff provide members with a copy of the Committee's charge, the State Board Technology Advisory Committee's recommendations (as soon as they are made available by the Department of Education), and a copy of the legislation passed by 2004 Iowa Acts, Chapter 1175 (S.F. 2298), §244. Senator Dvorsky asked members to consider adding a presentation by a representative of the College Community School District

in Cedar Rapids to the November 22 meeting agenda. Cochairperson Boal encouraged members to consider during the weeks prior to the final meeting date the direction the Committee should take with its recommendations. It was agreed that the final meeting would focus on consideration of recommendations.

III. November 22, 2004, Meeting.

A. College Community School District.

Mr. Alan Rowe, Executive Director of Learning Services for the College Community School District located in Cedar Rapids, reviewed his PowerPoint presentation, which illustrated the way in which teachers and administrators in the district use an Internet learning portal (at www.prairiepride.org). His presentation included the following subject areas:

- **Learning Tools and Professional Development.** The portal's learning tools support professional practices and result in increased and more efficient use of student data, including attendance, discipline, and achievement measures; more effective professional learning practices; and an increased sharing of teaching tools and strategies. The district establishes and reviews measurables to determine if professional development efforts are achieving the intended "USE" results, which he defined as "Use of best practices, Sharing level among colleagues, and Effect on student achievement and teacher quality." Technology introduced to the district must be "SIF"-compliant, meaning it must be compatible with the school's interoperability framework. Technology accelerates the information teachers can use to meet student needs. Isolation is a barrier to school improvement, and while teachers often know what tools are available to help achieve improvement, they do not have the time or opportunity to avail themselves of the tools. The need to increase time for professional development efforts has led to a plan to delay the school daily start time to 8:40 a.m., to allow teachers more time to collaborate.
- **A Community School.** The popular perception is that the district primarily serves an affluent suburban community; however, the district's special education "move-in" growth rate is three times the state average, 25 percent of its students are eligible for free or reduced price meals, and approximately 100 students are from homeless families. The district truly is a "community school," acting as the Internet service provider to the community for 10 years. The community expects access to the district. The district has successfully passed 22 of its last 24 bond issues. The district received little or no help from its AEA in its technology efforts.
- **Information Service Plan/Standards.** The district has moved beyond the technology plan required by the state to developing an information service plan that focuses on attendance, behavior, and academics. The district has created standards of performance, uses common definitions so that data can be interpreted in the same manner, and employs clearly defined achievement growth indicators.
- **Leadership Team.** A district leadership team, which Mr. Rowe recommends be composed of, at a minimum, the superintendent, business manager, curriculum director,

web master, community relations specialist, volunteer coordinator, and technology specialist, is of great importance to achievement. The district maintains a library of best practices. The district has hosted more than 50 school districts which have come to study its achievements.

- **Recommendations.** Mr. Rowe recommended the formation of a "data academy" to support school districts and recommended that the physical plant and equipment levy (Iowa Code §298.2) be revised to allow districts to buy technology hardware with preloaded software.

B. Iowa Department of Education.

Mr. Jeff Berger, Legislative and Policy Liaison for the Department of Education, was invited to respond to questions from Committee members. He noted that the state does not utilize a consistent nomenclature, so the State Board of Education's Technology Advisory Committee decided to gather additional information to improve the state's knowledge base regarding educational technology and its use in Iowa's K-12 system. Because the advisory committee is still formulating its survey, he suggested that the Committee could at this time request changes to the advisory committee's survey. The department heavily uses Learning Point Associates, located in Chicago, as a clearinghouse for educational technology information.

C. Committee Discussion.

Cochairperson Angelo distributed recommendations suggested by Mr. Hueser, a presenter from the second Committee meeting. Senator Beall distributed a draft recommendation for a state appropriation of $250,000 for an Iowa Learning Technology Pilot Program which would provide competitive grants to school districts that meet specified standards. Co-chairperson Boal distributed proposed recommendations to establish a student achievement learning technology initiative using one-to-one student learning technology through public-private partnerships; identify and coordinate revenue sources for K-12 technology; establish a clearinghouse for purposes of sharing the projects and results of K-12 education technology initiatives occurring in the state; and create a common understanding of the current status of technology in Iowa's classrooms supported by reliable data. Representative Roberts proposed the creation of a research park, to be located perhaps at the University of Northern Iowa, which could develop intellectual property of value to school districts across the nation. Representative Winckler identified a need to develop a matrix showing where districts are in efforts to integrate technology into the classroom and that would identify phases for reaching the optimum level.

IV. Recommendations.

The Committee unanimously approved the following recommendations:

A. Iowa Learning Technology Commission.

The Committee recommended the establishment of an Iowa Learning Technology Commission, composed of stakeholders, to administer a student achievement learning technology initiative to be implemented through local and public-private partnerships that may include, but is not limited to, using one-to-one student learning technology.

B. Pilot Program to Encourage Innovation.

The Committee recommended the establishment of a pilot program, to be administered by the commission to encourage innovation, increase student achievement, and ensure that technology is used on the basis of best practices. The pilot program should be designed to obtain valid and reliable evidence of the impact on student achievement from the use of technology, which may include a "one-to-one" initiative; further demonstrate successful district-to-vendor relationships and possibilities; identify local district educational and fiscal planning and implementation strategies; and gain a better understanding of the current status of technology in Iowa schools. The goal of the pilot program is to provide results and additional information necessary for the General Assembly to commit state funds toward implementation of a statewide technology initiative. The pilot program should consist of state-funded competitive grants to Iowa school districts that are matched locally with public or private, federal, state, or local financing as determined by the applicant school district. The pilot program would include the following key components:

1. **Leadership.** Public and private partners should be involved in the development of the planning, implementation, and outcomes for the initiative. Members of a leadership group should include K-12 education and community college and other higher education stakeholders, as well as members of the General Assembly, and representatives from the Governor's Office, business, economic development, technology, and finance.
2. **Focus on Increasing Student Achievement Opportunities Through Quality Teaching and Learning.** The focus on student achievement should include an identification, for purposes of this pilot program as well as for statewide implementation, of the age and developmentally appropriate use of educational technology that will engage the learner and result in improved student achievement opportunities.
3. **Professional Development.** The effective use of technology in the classroom includes quality ongoing professional development.
4. **Curriculum and Assessment.** Students' technology skills should be integrated into the curriculum and assessed through the demonstration of learning within content areas.
5. **Equitable Access.** All Iowa students should have equitable access to education opportunities offered via the use of technology and telecommunications.

6. **Educational Technology Planning.** Consideration should be given to future sustainability of learning technology resources by adapting to future educational needs and technology changes and by avoiding obsolescence of learning technology resources.
7. **Economic Development.** The initiative should foster economic development across all regions of the state and the preparation of students for an economy that embraces technology and innovation.
8. **Accountability.** The focus on accountability should include methods of measuring progress in the areas of increased student engagement; decreased disciplinary problems; increased use of computers for writing, analysis, and research; movement toward student-centered classrooms; increased parental involvement; and increased standardized test scores.

C. Coordination.

The Committee recommended that the commission identify and coordinate current public, private, federal, state, community college, and local revenue sources used for K-12 technology at the school district, area education agency, and state level as a means of determining the need for renewing state appropriations for technology. It was recommended that the commission collaborate with the Department of Education in this effort.

D. Research Triangle and Clearinghouse.

The Committee recommended the establishment of a research triangle and clearinghouse administered by the Regents universities for purposes of sharing the projects and results of K-12 education technology initiatives occurring in Iowa districts, AEAs, and community colleges and other higher education institutions with the education community within and outside of the state. Dissemination of and access to planning, financing, curriculum, professional development, preservice training, project implementation strategies, and results should be centralized to allow school districts from across the state to gain ideas from each other on integrating technology in the classroom.

E. Technology Inventory.

The Committee recommended that the commission create a common understanding of the current status of technology in Iowa's classrooms supported by reliable data. This should include an accurate assessment of the number of computers and their appropriate corresponding use; costs for hardware, software, staff development, instructional staff, and technology support staff; sources of funds used for technology budgets; and an inventory of curriculum and technology-based K-12 courses. The Committee further recommended that the commission collaborate with the Department of Education on the collection of data and review the data collected by the department prior to starting the pilot program.

F. Levy.

The Committee recommended that the physical plant and equipment levy (Iowa Code § 298.2) be expanded to allow districts to finance the purchase of computer hardware, servers, and preloaded software.

V. Materials Distributed to the Committee.

Materials distributed at or in connection with Committee meetings are on file with the Legislative Services Agency and may be accessed from the Committee's Internet page at: http://www4.legis.state.ia.us/aspx/Internet/Committees/Committee.aspx?id=60

A. September 30, 2004, Meeting.

1. Background Information on Iowa Learning Technology, submitted by Ms. Kathy Hanlon.
2. "Laptops for Learning," submitted by Ms. Jodie Butler, Manager of Strategic Relations, Apple Computer, Inc.
3. "Learning in a Connected World: Harnessing the Potential for Technology," submitted by Mr. Brice Oakley.
4. Mr. Jon W. Hueser's e-mail to Senator Daryl Beall.
5. "Microsoft Total Regular Program District Cost Comparison — FY 2004 through FY 2006," Iowa Department of Education, submitted by Dr. Lee Tack.
6. Pocahontas Area Community School District handout submitted as part of the Gateway presentation.
7. Blueprint for School Transformation, January 1993.

B. November 5, 2004, Meeting.

1. "Technology in Schools," PowerPoint Presentation presented by Mr. Jon W. Hueser.
2. Mr. Jon W. Hueser E-Mail to Committee members.
3. "Effective Educational Technology Research - Context, Achievement & Trends," presented by Dr. Gil Valdez, Learning Point Associates.
4. "State of Technology in Iowa," PowerPoint Presentation presented by Ms. Judy Jeffrey.
5. "Community College Leverages Microsoft SharePoint Software, HP Infrastructure to Create Multi-Campus Educational Portal," submitted by Ms. Ann Watts.
6. Des Moines Area Community College PowerPoint presentation, presented by Ms. Ann Watts.

7. "DMACC's Vision for the SharePoint Portal," submitted by Ms. Ann Watts.

C. November 22, 2004, Meeting.

1. Memorandum (cover sheet) prepared by Ms. Kathleen Hanlon, LSA Senior Research Analyst, which included the following:
   - A copy of 2004 Iowa Acts, Chapter 1175, Senate File 2298, sections 242-246, substantially item vetoed by the Governor.
   - A copy of House File 693, which was introduced 4/23/04, but failed to pass out of subcommittee in 2004.
   - An e-mail sent by Mr. Jeff Berger with attached documents, "The Guiding Principles of the State Board Technology Advisory Committee," and "Method of Internet Access by District and Building," November 8, 2004.
   - An e-mail sent by Mr. Jeff Berger with attached document, "State Board Technology Advisory Committee Status Summary," November 17, 2004.
2. PowerPoint presentation of "PrairiePride" web pages, submitted by Mr. Alan Rowe.
3. "Draft Recommendations for Committee Consideration" submitted by Cochairperson Boal.
4. Draft legislation submitted by Senator Beall.

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