EDUCATIONAL TECHNOLOGY AND THE AGE OF LEARNING:
Transforming the Enterprise

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EDUCATIONAL TECHNOLOGY AND THE AGE OF LEARNING: TRANSFORMING THE ENTERPRISE

Higher Education & the Age of Learning

If the 18th century is characterized as the Age of Reason, the 19th as one of industry and, the 20th century as an era of profound scientific and technological revolutions, then the 21st century could well be known as an Age of Learning. This will be a time when more people everywhere are involved in acquiring new knowledge and skills continuously throughout their lives and from virtually every context of daily life.

In such an age, and to succeed in the decades to come, organizations, communities, and states must:

- Create, promote, and maintain unfettered access to both information and learning;
- Make such access practical and ubiquitous; and
- Produce powerful, continuous learning by and for their constituencies.

That this Age of Learning will both force and require a transformation of higher education is a point to which virtually everyone agrees. Our challenge is to create the infrastructure – physical, human, intellectual, financial, organizational, and virtual – that harnesses the power of technology to meet the strategic needs of Georgia, Georgians, and Georgia-based businesses, organizations, and communities, while also taking advantage of global opportunities.

The University System of Georgia & Educational Technology – The Board's Vision

In recent years, Georgia has invested much toward establishing the basic infrastructure required to usher in the Age of Learning. Now is the time for the University System to organize its constituent and collective resources, capitalize on the existing and emerging technological infrastructure, focus and coordinate its efforts and those of institutions, identify the necessary leadership, and move aggressively to effect the changes that will enable more Georgians to participate in the Age of Learning.

The University System of Georgia must respond to and anticipate the emergence of a new world of "anytime/anywhere" learning with strategies and actions that apply technology effectively, promote collaboration, foster innovation, but most importantly, provide leadership in developing the infrastructure for an age of learning in Georgia.

In the 1995 Strategic Planning Report, *Access to Academic Excellence for the New Millennium*, the Board of Regents set forth a vision for the University System. The 34 Guiding Principles in the report provide the structure for development of a world-class learning environment. While educational technology should be applied across the System to support the Guiding Principles, the strategic need for technology is most succinctly embodied in the following two principles that were remarkably prophetic, stating that the University System of Georgia shall:

Use educational technology, innovation, and teaching strategies that produce the most learning by engaging students actively, collaboratively with other students, and in frequent contact with faculty. It shall promote and reward excellence in teaching, and shall maximize the benefit to students and to the state from the research, scholarship, and service activities that complement teaching. (Guiding Principle #10)

Pursue coordinated approaches to statewide, national, and international telecommunications and other technological initiatives that maximize public access to information, benefit public health and material well-being, and improve educational access, quality, and cost-efficiency. (Guiding Principle #33)

Educational Technology – The Board's Principles & Recommended Actions

The University System is committed and prepared to use technology as a central element of teaching, learning, student services, public service, research, and institutional management. Through adoption of these 16 principles, the Board of Regents of the University System of Georgia is positioned to accelerate the use of technology throughout the System, across the State and beyond by organizing its efforts and empowering all of its constituents.

By unleashing the creativity of faculty and staff, learning environments can be created which will attract and engage the wonder, curiosity, and excitement of students, as well as address their practical learning needs. Just as important, the University System can provide the State of Georgia and its businesses and organizations with a competitive edge in a global economy in which learning is critical to success.

These principles and their recommended actions are grouped under the following broad themes:

- Expanding Access,
- Enhancing Learning,
- Enriching Opportunities, and
- Effective Financing and Innovative Governance.

EXPANDING ACCESS

Principle 1: The University System will develop strategies to minimize student cost barriers associated with technology access or purchase.

Recommended Actions

- Establish and ensure basic and equitable access standards that provide all students with the maximum opportunity for electronic access to information and learning resources.
- Identify the full costs of ensuring student access to technology and determine the best mix of state funding, student technology fees, and external resources needed to meet those costs.
- On the basis of these standards and institutions' strategic technology plans, leverage the System's collective purchasing power to secure significant discounts for students and institutions seeking to acquire needed technology-related services.

- Develop and maintain a comprehensive technology plan for the System that incorporates standards, addresses cost structures, and maximizes use of partnership opportunities.

Principle 2: ***The University System will employ technologies to expand the learning environment ensuring access to information and educational experiences independent of time, location, and physical boundaries for all types of students from undergraduate through life-long learners.***

Recommended Actions

- Promote and coordinate expanded student access to the core curriculum using both synchronous and asynchronous instruction[1] and the full spectrum of delivery methods and technologies.
- Install the most modern tools and technologies to protect the confidentiality and security of all student transactions and interactions that utilize technology.
- Empower an organization to coordinate institutional efforts to develop and deliver technology-based learning and services in ways that reflect institutional mission and status, reduce unnecessary duplication of effort and resources, and focus on statewide needs best addressed by a coordinated System approach.

Principle 3: ***University System institutions will ensure that all students regardless of participation modality (on-campus, off-campus, on-line)***[2] ***will have access to support services without time and place inconveniences as needed to provide a quality educational experience.***

Recommended Actions

- Offer students receiving instruction at a distance and/or via technology access to services and materials equivalent to those available on-campus.
- Ensure that students have access to electronic library resources.
- Provide students participating in asynchronous and/or technology infused courses with access to essential training and support services.
- Ensure a student-centered focus by developing and providing "user friendly" technology-facilitated services available anyplace and at anytime. Examples of such services include:

  - A web-based common application form.
  - An electronic database that allows on-line searching of USG courses.
  - A Systemwide student and library ID card.
  - An electronic student portfolio which enables seamless migration of student transfers between and among USG institutions and from Georgia high schools.
  - A student information system for continuing education courses and enrollments.
  - Registration procedures that allow electronic payment of tuition and fees.

- Create a single point-of-entry to essential student services for coordinated, System-wide learning initiatives.

Principle 4: ***The University System will support and keep current its existing, robust technology infrastructure that is integral to the delivery of quality education services on-campus and off-campus including educational offerings, administrative processes, and on-line library services.***

Recommended Actions

- Continue and expand support for faculty who are designing and developing instructional materials with System supported educational applications.
- Establish means for faculty, students, and staff to participate in the development and delivery of technology-based learning and services that support coordinated System-wide initiatives.
- Create an on-line repository that provides access to electronic instructional components and modules and facilitates linkages between and among faculty with common interests and needs.
- Ensure the participation of all institutions through continued research and implementation of information technology standards for data definitions, systems development, and telecommunications.
- Continuously examine and test emerging technologies and the interaction and application of these technologies with current and predicted USG projects and initiatives.
- Identify and maintain a pool of technology consultants accessible by institutions, as needed, for technology support and planning.

ENHANCING LEARNING

Principle 5: ***Student learning and development will be empowered by technology.***

Recommended Actions

- Assess student technology proficiencies throughout the learning process via performance measures such as using the computer in taking the Regents' Testing Program Essay Test.
- Solicit and support institutional efforts to determine the effectiveness of educational technology in improving student learning.
- Review all courses and programs for the appropriate uses of technology-empowered pedagogies.
- Require that graduates have experience and proficiency in the use of technology appropriate to their field of study and relevant to their career pursuits.

Principle 6: ***University System institutions will employ technologies to enrich the student experience by bringing global cultures to the education environment.***

Recommended Actions

- Connect students to relevant information resources, people, and events around the world through the use of technologies.
- Build global learning communities that join with peers around the world.
- Significantly strengthen the technological elements of international exchange relationships and agreements with foreign institutions.
- Expand the number and quality of curricular offerings in international studies and foreign languages through use of technologies.
- Extend learning opportunities to Georgians living outside the state, to Georgia-based corporations and their employees working abroad, and to non-Georgians attracted by the quality of these offerings.

Principle 7: ***University System institutions will encourage ongoing, active student involvement in career preparation planning by facilitating access to institutional data and academic services.***

Recommended Actions

- Provide web-based career planning placement systems for all students.
- Increase student ability for career planning by making student portfolio information available on-line.
- Increase the interaction between students and their future employers by providing a continual electronic "Job Fair" which facilitates communication by prospective employers and employees regarding needs, opportunities, and trends.

Principle 8: ***University System institutions will foster academic innovation through leadership and administrative support which recognizes and rewards faculty development activities, ensuring that all faculty and staff have the training and development resources necessary to utilize educational technologies successfully.***

Recommended Actions

- Recognize and reward appropriate uses of technology through tenure, promotion, post-tenure and annual reviews.
- Establish faculty development programs that encourage innovative use of new pedagogies to address asynchronous learning and the infusion of technology thus preparing faculty to utilize educational technologies in all facets of their professional responsibilities.
- Establish institutional staff development programs that enable staff to infuse technology into all aspects of institutional services and activities.
- Review and modify, as appropriate, departmental and faculty assignments, to address issues of developing and delivering technology-infused instruction.
- Include consideration, appropriate to the position, of ability to perform in a technology enhanced environment when filling new or vacant faculty and staff positions.

- Review USG policies concerning intellectual property rights to assure the state's prerogatives; to seek incentives for faculty, staff and students to develop and update the highest quality learning and services delivered via technology; and to resolve possible conflicts.

Principle 9: ***The University System will continue to expand a digital, virtual library designed to support universal access to information and learning strategies for all citizens of Georgia. The virtual library will become a digital repository responsive to the needs of all University System faculty and students as they pursue their educational goals from any place and at any time.***

Recommended Actions

- Integrate technology as appropriate across all academic, administrative, and service elements of the higher education experience so that students will develop information literacy skills for life-long learning.
- Ensure access to an electronic reserve capability which allows libraries to provide both on-campus and off-campus students with online access to course materials which have traditionally been put on reserve in the library.
- Continue and expand leadership roles in developing cooperative arrangements with other Georgia libraries including The Department of Archives and History and private academic and public libraries to digitize unique materials that enrich lives of Georgians and enhance learning.
- Increase the number of full-text periodicals and monographs provided through the System virtual library in order to maintain access to up-to-date information and scholarship.

Principle 10: ***Recognizing the changing nature of career longevity and its implications for ongoing professional development, University System institutions will build lifelong learning relationships with students.***

Recommended Actions

- Provide on-going, on-line career planning services to students and graduates throughout their careers.
- Using technology, increase non-traditional students' and graduates' access to learning opportunities in professional fields, which improve the likelihood of productive employment and professional growth.
- Forge partnerships with businesses and organizations to create access to and maintain the currency of training and learning for employees, especially in those fields of special strategic importance to Georgia's economic vitality.
- Increase the number of certificate programs that "ladder" into degree programs.
- Develop and implement marketing strategies to promote educational opportunities to traditional and non-traditional students with special emphasis placed upon "baby boomers" and "gray power".

ENRICHING OPPORTUNITY

Principle 11: ***The University System will enable its institutions to be responsive to the workforce development needs expressed by existing or prospective economic efforts in Georgia by developing policies and procedures which:***

- Respond quickly to workforce development needs;

- Address critical workforce shortage areas in a timely manner by bringing the expertise of the System to bear on local and regional needs; and

- Produce a ready and able stream of technologically proficient graduates.

Recommended Actions

- Charge an organization to provide leadership for and coordination of System-wide initiatives deploying technology for learning that, in tandem with ICAPP, address critical workforce shortages, needs, and strategic opportunities.
- Implement mechanisms to identify workforce shortages and needs on a regular basis.
- Utilize electronic delivery in programs addressing state needs and in economic development initiatives.
- Increase the number of graduates from multi-disciplinary programs that combine technology courses with business management and liberal arts courses.
- Establish working relationships between and among the business community and USG institutions to create flexible, responsive educational models designed to meet changing needs, which often occur in short time cycles, within the business sector.

Principle 12: ***The University System will ensure that institutions, faculty, staff, and students are working with tools and technologies that will prepare graduates to contribute to and lead in the businesses in which they will establish their professional careers.***

Recommended Actions

- Provide just-in-time professional development experiences for faculty and staff who work in fields which change rapidly.
- Create inter-institutional mentoring and training programs that establish opportunities for consistency across institutions.
- Collaborate with business and industry to ensure that graduates have the critical technology skills that ensure success when they enter the workforce.

Principle 13: ***The University System will continually focus on evolving technologies by working with both ongoing national projects and initiatives and the private sector to ensure the earliest possible transfer of the new technologies and their applications throughout the University System.***

Recommended Actions

- Establish cooperative agreements with other entities to meet Georgia's need for higher education where existing System resources are not available.
- Aggressively pursue partnerships with hardware and software industry that ensure (1) integration of educational needs in the development of products and (2) support of products that the USG adopts.
- Implement aggressive technology transfer programs which provide early access to the results of national projects, research advances, and new private-sector products and services.
- Endorse and support the establishment of technology standards that are in keeping with educational requirements and industry standards.
- Establish an electronic "suggestion box" to identify opportunities for funded research activities.

EFFECTIVE FINANCING AND INNOVATIVE GOVERNANCE

Principle 14: The University System will review, modify and/or create fiscal and academic policies, operating procedures, and new business models to support education on-campus, off-campus, and on-line. These models may include private/public partnerships, strategic corporate alliances, and distinctive governance structures.

Recommended Actions

- Continue and expand present efforts to examine the costs associated with electronic course development and delivery through limited use of technology fees, market based pricing for pilot efforts resulting from initiative funded courses, and state funded special projects.
- Establish and implement plans to evaluate the costs of the models as they evolve while examining the appropriate sharing of costs across funding sources (state, system, students, corporate customers).
- Establish an organization to provide focus, coordination and leadership for System efforts to deploy technology in a manner that addresses the most pressing post secondary learning needs within Georgia. This entity will leverage System and institutional academic, administrative, and fiscal resources to serve the state's economic development strategy and foster the growth of "knowledge" industries, employment, and Georgia's ability to compete successfully in a global economy. It will:

  - Design and implement an entrepreneurial business model responsive to economic development needs.
  - Design and implement an academic management model to coordinate offerings and provide services to USG distance education providers.
  - Review and revise existing or create new USG policies or procedures to support new delivery models.
  - Modify System chart of accounts to accommodate technology expenditures.

- Review federal and state financial aid regulations.
- Develop and test the viability of financial practices for course development.
- Develop methods for effective marketing of distance education services offered by USG institutions.

Principle 15: To reduce duplication, capitalize on expertise, and enable the sharing of resources, the University System will establish policies and incentives, which enable, and where appropriate, require institutions to utilize technologies to create inter-institutional collaborative programs that ensure a rich diversity of educational offerings, while maintaining academic program quality and efficiency.

Recommended Actions

- Empower an organization to provide leadership for, coordination of, and focus for System-wide efforts to deploy technology and address critical learning needs and the state's strategic economic development. (see Principle #14)
- Develop and maintain a set of Principles of Good Practice. These principles will identify appropriate measures and practices for assuring the quality of all USG courses.
- Establish a centralized fund to support collaborative efforts between and among USG institutions.
- Establish a centralized coordination mechanism for the distance education activities at each institution.

Principle 16: The University System will establish policies and procedures ensuring that the costs and opportunities, which accompany technology, are addressed in institutional daily operations and strategic planning processes.

Recommended Actions

- Ensure the coordination of institutional technology planning with fiscal planning, academic planning, and facilities planning as well as responsiveness to the System Technology Strategic Plan.
- Build and maintain facilities that support a flexible and robust infrastructure for technology systemwide.

  - USG facilities justifications of space needs (for new facilities or renovated space) will document consideration (life cycle cost effectiveness) of alternative ways of providing services to minimize or eliminate additional space requirements.
  - USG pre-planning and programming guidelines for facilities (new construction and renovation) will be reviewed/revised to ensure funding guidelines and structures are in place to cover appropriate technology costs.
  - The USG facilities design (new construction and renovation) review process will be revised to incorporate updated technology design criteria (guidelines) and general review of the project for conformance with campus and System Technology Strategic Plans (as they become available).
  - Traditional USG design criteria for facilities (new construction and renovation) will be reviewed/revised to encourage flexibility in layout, construction and systems for cost effective adaptive reuse of space as program(s) and technology change over time.

- Collect and report data on instructional technology and distance education activities for institutional planning purposes.

[1] Synchronous instruction occurs when students and instructors interact in real time; asynchronous instruction occurs when there is a time delay between delivery and receipt of information, such as is the case with web-based instruction or electronic mail.

[2] Today, students can participate in higher education in three basic delivery formats: On-campus refers to instruction provided in classrooms on a campus, off-campus refers to instruction provided to students at a classroom location in a facility not part of the primary campus, and on-line refers to instruction which can be delivered and received via technology at many locations including the workplace and the home.