Oracle Charter School

Technology Plan

2009-2010

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June 1, 2009

BEN# 16027214

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History

The founding group of the Oracle Charter School opened a public charter high school to offer an exceptional educational choice to students who may not be able to test into Buffalo's best public schools or be able to afford the choice of private school tuition. The Oracle Charter School offers the kind of educational programming that distinguishes the nation's top middle and high schools and effectively prepares students for the civic and economic challenges of the 21st Century.

Philosophy

A sweeping change is underway in the necessity to integrate technology into the 21st century classroom. The future of the United States economy and indeed the global economy is information and service sector jobs. The ability to compete in this arena will depend upon the extent to which today's students can use the tools and skills of the new economy. This means that computer literacy is merely square one in a larger system including: critical thinking and judgments; solving complex, multi-disciplinary, open-ended problems; creativity and entrepreneurial thinking; collaboration and communication across cultural, geographic, and language barriers; innovative use of knowledge and information; making wise choices in areas of health, finance, and civics.

Mission statement

The Oracle Charter School creates a curriculum infused with arts and technology that emphasizes interdisciplinary study and cooperative learning wherein students have the opportunity to act both as learners and as mentors. Our students have access to and gain an understanding of the academic, social, and technological infrastructures that shape their lives and communities as well as an understanding of the ways in which they, as individuals, impact upon and are influenced by their environments. Technology is a seamless tool within the curriculum to allow students to meet the challenges of the NYS assessments.

How We Define Technology

Technology is simply the utilization of seemingly sophisticated tools to achieve the required result. At some point in the history of education these tools would have been things like ballpoint pens, blackboards, slide rules, or calculators. Our modern concepts tend to focus on computers, networks, and other "high" technology, but we can just as easily point to things such as telephones or DVD players.

How We Utilize Technology

The Oracle Charter School learning community will be technologically literate life-long learners. They will successfully interact within a technological environment to achieve their goals. They will use technology skillfully in their interaction with all types of information.

Development of 21st century skills will require a new set of classroom priorities. The Apple Classroom of Tomorrow – Today (ACOT2) effort to revolutionize the approach that schools take to technology and learning outlines 6 key characteristics of the 21st century classroom.

- Involves collaboration and community
- Is based on authenticity and relevance
- Leverages real-world tools, resources, and methodologies
- Incorporates a rich continuum of teaching and learning strategies
- Is grounded in rich content with a 21st century context
- Creates linkages to the outside world

Plan Summary

The Oracle Charter School Technology Plan will:

I. establish evaluation processes to assess the plan's effectiveness
    - provide an inventory of current equipment

II. outline comprehensive approaches for technology integration
    - provide a model for technology in staff development

III. outline a budget for acquisitions and maintenance
    - establish an operating guideline for future acquisitions

IV. assess the success of previous plans' implementation

V. establish technology competency standards for all students

I. Information Technology Assessment

Our organization's hardware is comprised of network servers, desktop and portable computers, printers, network devices and the cabling that connects them.

We plan to apply for E Rate equipment funding to defray the costs of the new network equipment and applications. The application of E Rate funding will also play a major role in our network development by freeing funds currently used for basic services to be used to build out and improve our network infrastructure. The school's operating budget supports the E Rate funding by providing for IT salaries, maintenance, training, and other system operations.

A two level needs assessment process will be utilized by our organization. The first level will involve the teaching staff. This assessment will address attitudes toward technology, professional development needs, and instructional integration of technology. The second level will involve our technology committee and will address hardware and infrastructure needs.

The first level involves a comprehensive technology needs assessment that is conducted by the Education Service Director at least every two years. This needs assessment addresses attitudes toward technology, extent of technology usage, extent of classroom technology integration, and professional development needs. Surveys of teachers and staff will be utilized for this purpose.

The second level involves an assessment of current campus and organization hardware and infrastructure. Our Information Technology staff works with the technology committee to determine where additional technology resources are needed, where hardware upgrades are needed, and what upgrades/enhancements are needed to insure adequate infrastructure. The technology committee will keep current on emerging technologies to insure that these are considered in the technology acquisition budget. The committee then provides input into the technology acquisition budget. This second level does not utilize a particular assessment instrument. It is more of an analysis/discussion of needs. The technology committee identified the following needs as a result of the second level of the needs assessment plan:

- Provide more electronic classrooms
- Co-Locate servers for application and data redundancy.
- Maintain high quality server computers.
- Maintain fault tolerant backup systems.
- Add Terminal Servers at the Main location to facilitate WAN access to the network of facilities.
- Continue plans for a gigabit speed backbone.
- Continue to experiment with new technologies as they are available.
- Use the Internet for learning resources

A. **Current program status**

1. Curriculum integration
    a. Every faculty member has been assigned a laptop computer and/or desktop computer.
    b. One 20-seat computer lab with internet access is in use for technology instruction.
    c. One 20-seat computer lab with internet access is available on-demand for class use.
    d. One 30-unit DANA cart is available for on-demand use in classrooms.
    e. Projectors are installed in 9 rooms with connectivity to teacher computers.
    f. Interactive whiteboards are installed in 9 rooms.
    g. A central computer LAN running Windows Server 2003 allows for file synchronization, remote access, and shared drive access.
    h. A network administrator and an information technician are in place to facilitate technology integration.
    i. A school website is in place to offer information to students, staff, and the public.
    j. Professional-level software tools such as the Microsoft Office Suite are integrated into core curricula.
    k. Consumer-level netware tools such as GoogleEarth are integrated into core curricula.
    l. Televisions, DVD players, cart-based projectors, and MP3 players are available on a sign-out basis throughout the school.
2. Staffing and training
    a. Individual meetings and/or assessments with all faculty.
    b. Group training sessions to differentiate faculty technology ability levels.
3. Administrative
    a. Exchange and POP accounts are in use by all staff and faculty
    b. The eschool database system is used to track all school information
    c. A financial network drive for on- or off-site business account access.

II. Technology Objectives and Plans

Overview

The 21st century classroom must transition toward teaching 21st century skills including global awareness, financial and entrepreneurial literacy, information and media literacy, civic literacy, and health literacy. Additionally, students will require skills such as innovation and creativity, critical thinking and problem solving, self-direction, adaptability, and accountability. Oracle Charter School recognizes that the teaching methods that will engage this generation of learners are fundamentally different from the methods that have engaged learners of any previous generation.

Central to the theme of technology integration is the notion that students must be "content creators" at least as often as they are "content consumers." (In this light, simply projecting a lesson via interactive whiteboards does not qualify as true 21st century technology integration.) The 21st century classroom will incorporate the tools of the real world of jobs to facilitate the creation of real-world content and solutions to real-world problems.

Students need to learn in an environment that is closely related to the environment of real life. A classroom environment that requires a student to disengage from their digital activities and devices will tend to disengage the student's attention as well. The closer we can get to a seamless integration of the student's complete digital environment, the more effective the curriculum will be.

A. **Overall Objectives**
   1. Grade-appropriate curriculum integration (See Appendices A and B)
   2. Creation of technology electives (e.g. Building a Computer)
   3. Expanded infrastructure and facilities

B. **Equipment and service purchases**
   1. Hardware/software
      a. Scheduled phase-out of antiquated/obsolete hardware and software
         I. Laptops (14)
         II. Desktops (10)
         III. Mini's (20) plus cart
      b. Licensing – to accommodate new lab, etc.
         I. Windows
         II. Office 2003
      c. Terminal Server Acquisition
         I. The terminal server will facilitate teacher planning by allowing them to work from home

with the same network functionality they enjoy within the building

d. System-wide software implementation
    I. System-wide virus protection with central deployment and management features
e. School-wide portable hard drives (400)

2. Imaging
    a. Professional Videocamera
    b. Consumer Video Cameras (3)
    c. Projectors (9)
3. Infrastructure
    a. Upgrade internet bandwidth to bonded T1 (double existing bandwidth to 3M).
4. Maintenance
    a. The salaried IT staff will provide routine maintenance and support.
    b. Intensive technical maintenance will be provided on a monthly basis by AT Technology Services.

C. **Technology Department Electives** – Create elective courses such as:
    1. Hardware, operating systems, and assembly course
    2. Audio/video engineering course
    3. Web/flash authoring course

D. **Electronic Database Management (eschool) –** Clearly assigned staff duties for the management of the school's records are crucial in maintaining an accurate and reliable database for state reporting and accountability.
    1. The CIO will be ultimately responsible for database management.
    2. Overlapping database responsibility must be avoided whenever possible to reduce errors and redundancy. Accurate state reporting and accountability is intimately connected with the accuracy of the electronic database. Therefore, authority to manage the electronic database will be delegated as follows:
        a. State reporting – CIO
        b. Enrollment and transfer processing – front office
        c. Transcripts and new student evaluations – guidance/special education
        d. Technical issues and conflicts – tech office
        e. Assessment tracking – curriculum coordinator
        f. Grade and final Reporting– tech office

E. **Staffing and Training**

Professional Development is perhaps the most crucial area of large-scale technology integration. A great deal of the resistance to

incorporating technology can be traced to the *tendency for teachers to teach what and how they were taught*. Here it must be reiterated that a multi-media presentation does not fulfill our highest goals for integration. Those goals revolve around content-authoring, creativity, problem-solving, and collaboration. Integrating these activities in the curriculum does require significant planning and training. While Oracle faculty are generally very knowledgeable in the day-to-day use of technology, there are several areas where improvement can be achieved (see also part IV). To facilitate this difficult transition, we will enact the following procedures and ensure the support of the IT department in all aspects of training:

1. Recommend the creation of a school-wide Technology committee to oversee:
    a. Implementation, assessment, and further refinement of the Tech Plan
    b. Research and approval of software for curriculum integration
    c. Research and approval of pilot projects for 21st century skills focus
2. Recommend the creation of one or more "media-librarian/facilitator" positions to staff computer labs and provide "push-in" support for mobile labs and media/technology projects as well as assisting the IT department with school-wide staff training.
3. Require faculty training/independent study on the topic of 21st century skills and ACOT2 initiatives.
4. Require off-season/free-time professional development on the 21st century skills pilot projects approved by the Technology Committee.
5. Recommend and/or enforce a policy of IT department administration, deployment, and storage of all software titles and licenses.
6. Require faculty training on proper utilization of network resources.
7. Require a school-wide technology inventory every summer.

F. **Evaluation**

The technology committee will meet annually to revise the plan for each upcoming year. The plan is reviewed semi-annually to make mid-course corrections in response to new developments and opportunities as they arise.

Progress towards technology goals will be monitored through regular reports made by Information Technology department.

Committee Members Name	**Committee Members Position**
Julie Jackson-Forsberg	Executive Director
Laura Chestnut	Fiscal Manager
Mike McKee	IT Director
Rob Heim (AT Tech)	Consultant
Jim Cammarata	Chair-Social Studies
Matt Cheman	Student Technology Rep.

III. Plan Budgeting

Item	Quantity	Unit Cost	Total Cost
Projectors	9	650	5850
Infocus	IN2104EP		
Desktops	10	519	5190
Dell optiplex 760			
Laptops			
Sony Vaio VGN NS105	14	565	7910
Mini's Asus EeePc	20	276	5673
Apple MacBook	10	949	9490
Laptop cart	1	1500	1500
video cameras			
Consumer			
Canon ZR 950	3	279	837
Prosumer			
Canon GL2	1	2799	2799
Production computers	2	3800	7600
Misc			5000
WAP	4	400	1600
48 port unmanaged 10/100Mb switch with 2Gb ports	1	550	550
Remote Access Server with licenses	1	3232	3232
virus protection	50		1700
USB HDs 1G	400	7.6	3092
Internet plus phone (incl. upgrade)	12	1050	12600

Email Service	12	175	2100
Prof Development		10000	10000
IT staff salaries	12		
Maintenance (Attech)	12	180	2160
Cell Phone	12	400	4800
Total			**93683**

Our organization provides funds for those items that support the E Rate request from its operating budget as part of the Information Technology department's budget. These unfunded items include such things as technical support staff and desktop software. Hardware purchases, such as personal computers and server computers, are funded through our capital budget for Information Technology.

IV. Assessing Prior Plans

Previous technology plans have been instated successfully insofar as hardware acquisitions and infrastructure are concerned. One less successful area, however, is the utilization and management of the available resources

The network features such as storage capacity, shared folders, or student drops, for instance, are greatly under-utilized. Many faculty members do not exploit the network utilities to any substantial degree. There continues to be occasional resistance to implementation of these resources. This could be due, in part, to the technical issues that have haunted the network in the recent past, but general technophobia is more likely to blame.

Another area of concern is the lack of clear policy for software acquisition, or, more importantly, the administration of said software. The current IT staff has noticed a great deal of documentation on software acquisitions that have disappeared into the depths of the school somewhere, likely in a faculty member's desk or closet. Policy must be revised and implemented to employ a central storage and administration system for software acquisitions. Similarly, a school-wide mandatory technology inventory should be conducted over the summer to root out items that have been misplaced.

The faculty laptop plan will likely be revised to assign laptops to teachers only as necessary. The cost-effectiveness of desktop machines by comparison provides grounds to phase out faculty-wide laptop assignment.