
Features of Youth Technology Support Programs

Supporting School Staff to Support Students: Apple OS Help Desk

IT staff participation and supervision are essential to the success of the Apple OS Help Desk program. In this program, students work with instructors in a classroom environment to gain the necessary skills to work with IT Support staff in the operation of a help desk. Apple provides program instructors with training divided between Apple technical training and implementation of the curriculum and Help Desk project. This instruction is followed up with “Ask The Expert” sessions and ongoing online support. Additionally, teachers are encouraged to share their experiences with other teachers through a variety of methods including email, conferencing, and synchronous communication via Apple iSight instant messaging.

Any given approach to involving youth in providing technology support in schools may accommodate or be designed to involve different types of students (for example, at-risk students, girls, or other populations typically underrepresented in math, science, and technology careers; technology-savvy students; middle vs. high school students, etc.) and will emphasize the importance of the acquisition of slightly different skills (such as communication and interpersonal skills, organizational skills, technology skills, etc.). However, comprehensive programs will also include curricula and instructional materials, professional development, and tools and resources to manage technology support requests.

Curricula and instructional materials included in youth technology support programs are often aligned to a variety of state and national standards, including national IT skill standards, technology literacy skill standards, and content area standards. The curriculum web site of the Apple OS Help Desk program, for instance, includes, in addition to the course units, help desk project support links, a ticket manager system, and assessment resources. Each curriculum unit is mapped to standards (21st Century Skills/MCREL, Career/NWCET, and NETS/ISTE).

Professional development programs for school staff and administrators overseeing student involvement in technology support initiatives are critical to ensuring that students are well-trained, supervised, and are able to obtain the myriad real-world skills necessary to perform technology support work in schools. For example, at program startup, Generation TECH offers a workshop for school staff, including all those who will be key to the success of the program: the teacher or advisor for the Generation TECH class or club, the school or district technology coordinator, the principal and other administration staff, students, all existing technology support personnel, other interested teachers, and counselors who want to understand the nature of the new class. The workshop also serves to facilitate discussion among school personnel about the new roles and expectations surrounding student technical support. It consists of presenting a program overview, information about the use of the online tools, and information designed to address the individual issues that are unique to the school. Supplied print and

online materials reinforce these concepts and provide instruction after the workshop is over. In addition, Generation TECH offers a toll free telephone support line, unlimited email support, and monitored message boards.

“When teachers realized that our class would immediately fix their computers, they became a lot more adventurous with technology. While we had more to fix, the teachers were more comfortable.”

—Generation TECH Student,
Washington Middle School,
Olympia, WA

Youth technology support programs also include tools and resources to help school-based student teams to manage technology support requests, including local and/or web-based software, hardware, and other print-based materials. For instance, in addition to hardbound curriculum materials and professional development services, MOUSE provides participating schools and districts with extensive materials, tools, and services. Each participating school receives an Access 2000 Help Desk database used to track ticket and maintenance work, weekly data collection, and annual data reports. They also receive ancillary materials including a poster set, student I.D.s and lanyards, and access to online resources, including printable versions of all curriculum materials, MOUSE Squad FAQ & Forum, and the MOUSE Squad Weekly Wire email newsletter. Students have opportunities to go on field trips, participate in industry “shadowships,” take part in a monthly and annual awards program, and compete in an annual project-based applied data contest. Moreover, districts are provided with ongoing technical assistance, biannual data reports, and an annual site visit and program evaluation.

“We aren’t treated as kids—we are treated as adults—and people look up to us for being part of Student TECH CORPS. We have a say in almost everything and we take care of things. When we have a problem that we are unable to solve, we are taught new things that we use in the future.”

—Christine, age 14

One added feature of youth technology support programs that can be particularly beneficial for participating students is the enrichment added by IT mentors from the community. Programs such as Student TECH CORPS come with a team of community volunteers dedicated to helping both the lead teacher and the students with ongoing professional development. Meeting with student teams as frequently as twice a month, these mentors provide instruction and assistance with unresolved problems as well as advice on how resolved problems may have been fixed more easily. Most importantly, these adult IT mentors serve as role models for students, offering workplace experiences and expectations that can better prepare students for success.

Benefits of Youth Technology Support Programs

Meeting Individual Learning Goals While Balancing Workflow: Generation TECH Learning Contracts Keep Students Focused

When a student joins Generation TECH, a learning contract is created between that student and their advisor. A learning contract may involve, for instance, programming a web site, creating a set of help guides, using a particular piece of software, or creating a reusable resource on how to install a software application from the school network. This project is for the student to work on whenever there is a lull in solving technology support issues. Recognizing the importance of a balance between providing just-in-time technology support and pursuing more personal technology interests, the Generation TECH advisors work with their students to balance the technology support work and learning contract projects so that students reach both their personal learning goals while helping meet the technology support load in their school.

When well implemented, the potential benefits of youth involvement in school technology support programs are numerous and can accrue to participating students and their schools, if not also to the wider community in which the school is located. Variation in approaches notwithstanding, students participating in such programs can benefit by:

- **Acquiring 21st century skills** through increased fluency in applying information technology in authentic, meaningful ways, and developing the necessary interpersonal and teamwork skills to interact with teachers and other school staff
- **Improving academic achievement**, as evidenced by improved grades and academic test scores in related subjects, such as English/language arts, science, and mathematics
- **Increasing confidence and engagement in schooling** through meaningful involvement in school operations as evidenced by improved attendance, better relationships with peers and teachers, and improved citizenship
- **Gaining workforce skills**, including skills for IT or IT-intensive science, technology, math, and engineering careers, as well as interpersonal, communication, leadership, and organizational skills
- **Obtaining industry-recognized IT certifications**, including opportunities to obtain both vendor-neutral and vendor-specific certifications
- **Engaging in a service learning** initiative by sharing their time and skills within their school community
- **Earning course credits toward graduation**, including community service credit, as determined by participating schools and districts

To take one example, students participating in the C·R·E·A·T·E for Mississippi program are expected to maintain standards set by the schools for academics, conduct, and professional behavior. These expectations have encouraged many participating students to improve their academic standing and maintain good conduct records. In addition, participating students are developing leadership and technology skills that reach far beyond the

“We have had no computer downtime since the Student Tech Team began at our school.”

—Linda Clifton, Tupelo Middle School, Tupelo, Mississippi

classroom. Service projects in the South Delta, Hollandale, and Tupelo school districts expanded the impact of the program beyond their schools and into their communities through parent workshops and technology support for community organizations. Their work with senior citizens won the Tupelo Middle School team a Youth Entrepreneurship Education Springboard Award from the Appalachian Regional Commission. A sixth grade student in West Point won second place in the Mississippi Educational Computing Association’s multimedia presentation design contest, and a ninth grade student in South Delta has established a business called “Stephen’s Creations” designing business cards, presentations, flyers, and other products using a computer that he helped rebuild. Students using their new technology skills to springboard into today’s workforce is just one of the positive outcomes of participation. Program leaders report that when talking with the students and observing them at work in their respective schools, it is obvious that participation is valued by the students. Additionally, they report that conversations with parents, teachers, and administrators affirm that the presence of the support teams in the schools is equally valued by the students, the teachers, and the community members receiving support.

One of the most exciting features of youth technology support programs is that students of all academic levels and of different ages are participating in them. Because such an array of students is reaping the benefits of participation, changes to the school environment should be expected. The potential benefits of operating such programs and initiatives for schools and districts include:

- **Changing the school culture**, through empowering students to lead by example and encouraging increased technology use by previously reluctant staff members
- **Engaging a broader group of students** in playing an active role within their school community
- **Improving the responsiveness of the overall school technology support system** by adding competent student assistance
- **Improving the effectiveness of technology coordinators**, who can spend more of their time to pursue the “higher order” goals of long-range technology planning, providing intensive staff development, curriculum consulting, and follow-up support to teachers and other school staff
- **Providing cost savings** relative to the costs to provide such support through other mechanisms internal or external to the school

For instance, as a component of its 2002-2003 program year evaluation, MOUSE worked with industry partners to establish metrics to attach a financial value to the work that participating students performed in their schools. By analyzing weekly help desk data, MOUSE was able to determine that an optimally operating MOUSE Squad provides an estimated \$14,400 of technology support services to its school community. In 2004, New York City MOUSE Squad students will provide technology support services valued at an estimated \$770,000.

The investment schools make in their students through technology support programs is reciprocated by the students as they put their newfound skills and knowledge back to work in their schools. Schools are helping students gain greater self confidence and valuable skills as they successfully complete tasks and see how their work benefits the school community, while at the same time schools are receiving the assistance they need to make effective use of their technology investments.
