

Reflections on Being Fluent with Information Technology

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What do all high school students need to know?

I believe the elements of the IT Fluency framework are still relevant and appropriate. It will be important, however, to compare these elements against other elements that have been developed. The Partnership for 21st Century Skills (2003) identified a number of skills that should be considered in a review of the initial framework for IT literacy. These include: *self-direction*, *interpersonal skills*, *accountability and adaptability*, and *social responsibility*. ETS has also developed a new assessment for ICT literacy. They have defined the following seven proficiencies for ICT Literacy:

Access: The ability to collect and/or retrieve information in digital environments. This includes the ability to identify likely digital information sources and to get the information from these sources.

Manage: The ability to apply an existing organizational or classification scheme for digital information. This ability focuses on reorganizing existing digital information from a single source using pre-existing organizational formats. It includes the ability to identify pre-existing organization schemes, select appropriate schemes for the current usage, and apply the schemes.

Integrate: The ability to interpret and represent digital information. This includes the ability to use ICT tools to synthesize, summarize, and compare information from multiple digital sources.

Evaluate: The ability to determine the degree to which digital information satisfies the needs of the task in ICT environments. This includes the ability to judge the quality, relevance, authority, point of view/bias, currency, coverage, or accuracy of digital information.

Create: The ability to generate information by adapting, applying, designing, or inventing information in ICT environments

Communicate: The ability to communicate information properly in its context of use for ICT environments. This includes the ability to gear electronic information for a particular audience and to communicate knowledge in the appropriate venue.

At the meeting, it will be important to review the 21st Century Skills and ETS ICT Literacy elements to determine if new elements should be added to IT Fluency.

Assessment of IT Fluency

In addition to the assessment instrument developed by ETS, it will be important to consider the use of more authentic and performance-based measures to diagnose and assess the extent to which a student has mastered and integrated the three aspects of IT fluency: intellectual capabilities, IT concepts, and IT skills. Such an approach may require the use of multiple forms of evidence, including student products and performances. Such an approach should not represent an "add-on" to the present assessment process, but rather a rethinking of the assessment process to more tightly couple core content knowledge with IT fluency.

Effectiveness of Current Pedagogical Practices

We should also discuss perhaps the greatest challenge in achieving IT fluency, i.e., changing pedagogical practices. Chapter 4, *Implementation Considerations*, advocates a project-based approach to developing FITness and recognizes that lecturing about IT fluency is not an optimal form of instruction. This needs expansion to more fully develop the pedagogical implications of helping students achieve IT fluency. It should offer recommendations and strategies to teacher education institutions to help them prepare a new generation of teachers who are able to foster IT fluency in their students.

Blended Learning Environments

The importance of providing blended learning environments (face-to-face and online) should be discussed as an important element in helping students become fluent in IT. Electronic collaboration is changing the ways that work is accomplished, and electronic proximity increasingly represents the new workspace. Schools need to provide opportunities for students to work effectively in both the classroom and online environments.

Authentic Contexts for Students to Develop and Apply IT Knowledge and Skills

IT fluency is best developed when students are engaged in authentic tasks, in authentic contexts, using authentic 21st century tools. Apprenticeships, internships, and service learning programs enable students to apply their academic and IT skills in real-world settings. Such programs require developing more flexible scheduling and close collaboration with local businesses, industries, medical facilities, engineering firms, and other organizations. Providing such opportunities will enhance the IT skills of all students but will be particularly important for minority students, individuals with disabilities, and students from economically disadvantaged families.

Service learning may also be used to help students develop their IT fluency as they engage in meaningful service to their schools and communities. In this context students apply their academic and IT skills to solve real-world issues and problems, working with adults as partners in the process.

Two examples of such programs include:

- the GenY Program, in which students assist teachers in technology use and support the technology functions of the school (Arizona Learning Interchange, 2005); and
- the Microsoft High School Intern Program, in which students are exposed to technology and encouraged to pursue high-tech professions (Microsoft, 2005).

Such efforts will go far toward strengthening the connection between school and work place and will enable students to develop a deeper level of understanding of the importance and ubiquity of technology in the work place.

References

Arizona Learning Interchange (2005). *GenY: "Y" students are with teacher to change education*. [Accessed online October 27, 2005: http://ali.apple.com/ali_sites/azli/exhibits/1000609/Resources.html]

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Partnership for 21st Century Skills (2003).. *Learning for the 21st Century: A report and MILE guide for 21st Century skills*. Tucson, AZ: Partnership for 21st Century Skills