

Research Brief Future Skills

Question: What skills will students need in the future?

Summary of Findings: Most of the occupations for which students need to be prepared have not yet been designed, however, it is acknowledged that the majority of employment will be in service related fields. According to the research, the jobs most people will perform will only exist for three to five years, therefore, training for a specific job is not what is important. What will be critical for them to have is a common skills set that will allow them to be qualified for subsequent lifelong employment. Those necessary skills are: being adaptable, multitasking, making decisions, using different types of techniques to problem solve, participating in the community, having flexibility, being aware of and respecting diversity, working as a valuable member of a team, having strong interpersonal skills, being aware of the global community, speaking and communicating well in English, using numbers appropriately, and thinking critically. Having strong literacy skills was continuously referenced in the research, yet in more than just the areas of reading and mathematics. One article cited Toffler's definition of literacy, "The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn" (SCANS, 2000).

It was repeatedly recommended that educators should not add to their already overflowing plates, but rethink and reconceptualize education in a 21st century frame of mind. Some suggestions to do this included a development of partnerships with businesses, incorporation of work force skills into and throughout the curriculum, set up programs that will support the needs of the "real world," connect curriculum and projects to the students' lives, inform students about the expectations the world of work will have for them, and educate parents about those expectations and things they can do to support their child(ren) and the school.

Major Findings and Conclusions:

According to enGauge, in agreement with other reports and findings, there are four general areas in which the future work force will need skills: Digital, Inventive Thinking, Effective Communication and High Productivity.

Digital

- Basic: Have English language proficiency. The ability to deal with mathematical and arithmetic concepts.
- Scientific: Know and can apply scientific ideas and concepts to solve problems.
- Technology: Know how to use it in meaningful ways to reach targeted goals.
- Visual: Create and utilize images to stimulate thinking and communicate ideas.
- Information: Use and evaluate appropriate sources to respond to tasks.

- Multicultural: Be responsive to, and have an appreciation and respect of one's own and others' cultures, values, and beliefs.
- Global: Have an awareness of current and past climates and the interrelationships of those to social, economic and political events.

Inventive Thinking

- Use information to think and process at high levels.
- Work on several projects at one time.
- Be flexible, able to adapt and change ways of thinking and processing as situations dictate.
- Set goals and work toward them independently.
- Make mistakes and be able to figure out how to correct them.
- Go beyond the easy answer to solve tasks.
- Be a creative problem solver.
- Know how to learn and be willing to be a life-long learner.

Effective Communication

- Have strong interpersonal skills.
- Work as an integral member of a team.
- Provide leadership.
- Be an interactive communicator.
- Be a listener.
- Be respectful of others.
- Have and effectively use negotiation skills.

High Productivity

- Plan for results then follow through.
- Effectively use "real world tools."
- Produce authentic work.
- Obtain, organize, use, and interpret information.
- Use resources to the best advantage.
- Use the appropriate tools, especially technology, to get the job successfully completed.

Big 6 Skills

- Task definition: Determine the problem and the needed information.
- Information seeking strategies: Determine the sources that will best respond to the problem.
- Location and Access: Find sources and explore others that were referred to within the sources.
- Use of information: Examine sources and make use of the pertinent information.
- Synthesis: Organize and present the information.
- Evaluation: Judge and assess the product and process.

Online Resources:

- Contemporary Literacy: Essential Skills for the 21st Century.
A summary of the Big 6 procedure for processing information and a description of information literacy are given.
<http://www.infotoday.com/MMSchools/mar03/murray.shtml>
- Elementary and Secondary Education
This site provides links to and descriptions of the grants available from the Federal Government, including the recently proposed Striving Readers Initiative, Mathematics and Science Partnership Program, and Advanced Placement Program under No Child Left Behind.
<http://www.ed.gov/about/overview/budget/budget05/summary/edlite-section2a.html>
- Fact Sheet: Better Education for Better Jobs
Reasons are given for initiatives from the Federal Government to support reading, math and science programs, especially for students who come from low income backgrounds.
<http://usinfo.state.gov/usa/edu/fs040604.htm#top>
- Fact Sheet: Jobs for the 21st Century
A brief rationale and descriptions of the high school initiatives and grants sponsored by the Federal Government are provided. These funds are available in reading, mathematics, science, advancement placement courses, adjunct teachers, and state scholars.
<http://www.whitehouse.gov/news/releases/2004/01/20040121.html>
- Learning for the 21st Century
A thorough description of the skills students need to have in order to be better prepared for their future is provided. It also includes an annotated list with links to places where the principles outlined are being implemented.
<http://www.21stcenturyskills.org/>
- Secretary's Commission on Achieving Necessary Skills (SCANS): Final Report Available
This is a brief summary of the SCANS report that includes an overview and a glossary of basic and workplace skills that people will need to have in order to be successful.
<http://www.academicinnovations.com/report.html#foundation>
- Skills for a New Century: A Blueprint for Lifelong Learning
This was commissioned by Vice President Gore. It includes the recommendations for developing partnerships with businesses and the community.
<http://www.nifl.gov/nifl/skills.htm>

- 21st Century Skills
Brief definitions and descriptions of Digital Age literacies, Inventive Thinking, Effective Communication, and High Productivity are given. It also brings up critical questions for consideration about the world for which students need to be prepared, in particular, in the area of academic achievement.
<http://www.ncrel.org/engage/skills/exec.htm>
- What Work Requires of Schools. A SCANS report for America 2000
This includes the entire first SCANS (Secretary's Commission on Achieving Necessary Skills) report from June 1991. It describes and defines the world for which students need to be prepared, along with the role parents, business, and education should play in preparing students for the real world.
<http://wdr.doleta.gov/SCANS/whatwork/>
- Workplace Basic Skills
This is a one page summary and list of basic skills that are important to bring to the workplace.
<http://www.workplacebasicskills.com/begin.htm>

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