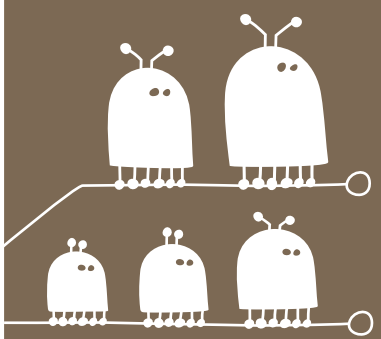
Take a giant step:

A blueprint for teaching young children in a digital age



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The Joan Ganz Cooney Center at Sesame Workshop
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executive summary

Across the nation and the political spectrum, Americans are calling for dramatic improvement of public education. At the same time, the country is in an era of scarce funding for new initiatives. In this context, this report identifies a timely opportunity and challenge: By integrating emerging digital technologies into education and lifelong learning for all professionals, beginning with teachers of children aged 3 through 8, we can establish a cost-effective and productive pathway for learning in the 21st century.

This approach is timely because years of education reform efforts have established a current policy environment where the following key factors are present:

- a core of common **standards** emphasizing 21st century skills and increased curricular depth;
- legislatively enforced **accountability** for student outcomes, which provides the needed leverage for reform;
- progress in developing **improved assessments** to test higher-level skills along with fundamental knowledge;
- an increased **commitment to learning in early childhood** in the nation's policy and business sectors as a result of new infrastructure and greatly expanded investment;
- incentives for states to develop comprehensive plans that include **improved teacher preparation and professional development**; and
- evolving digital technologies and a wealth of **public media assets** that create new possibilities for transforming teaching and learning.

With the first five factors laying the foundation for substantial education improvement, rapidly developing digital technologies can bring momentum and immense new capacity to student learning, teacher preparation, and professional development.

A particularly powerful benefit of these new technologies is their capacity for deepening and personalizing learning. Up until now, teachers typically have geared most of their instruction to meet the needs of the average child and have been limited in their ability to individualize strategies and materials to meet the needs of all learners. Today, through technology they will increasingly be able to differentiate instruction, and learners themselves will be able to have greater control of the paths and pace of their own learning.

Given the growing ubiquity of digital media in most children's lives, thoughtful integration of technology in learning environments can benefit children as young as ages 3 to 8. Enhanced, modernized early learning will improve their long-term prospects for school success. Technology is most productive in young children's lives when it enhances their engagement in the rich activities of childhood — talking, interacting, manipulating, pretending, reading, constructing, exploring — as well as in children's reflections on their actions and experiences. Digital media that can contribute in these ways and that also exposes children to new knowledge and enriching vocabulary are emerging, as evident in the examples offered in this report. Teachers in the early grades and beyond can make use of such strategies to improve learning for young children and better meet individual needs.

However, in order to be effective, U.S. teachers need more robust professional preparation as well as more ongoing support than they currently receive, especially with respect to understanding children's learning and development, providing learning experiences with rich cognitive demands, and using new technologies to promote personalized learning and 21st century skills. In the enhancing of teacher education, digital tools can play significant roles — for instance in online courses, connected learning communities, and in websites and other media offering video teaching examples, curriculum plans, and materials. Leadership at the school, district, state, and national level is essential for capitalizing on opportunities made possible by technology integration in the classroom.

The challenge of improving teacher preparation and ongoing learning led to the creation of the Digital Age Teacher Preparation Council, established by the Joan Ganz Cooney Center at Sesame Workshop and the Stanford Educational Leadership Institute, with generous support from the Joyce Foundation. Beginning in January 2010, a group of 22 experts in a range of fields, including teacher education, public service media, literacy, technology, science and mathematics, and developmental science, convened to study emerging best practices, policy and program trends, as well as innovative approaches to enhancing children's learning and teacher education and support.

The Council's work is the basis for *Take a Giant Step*, which states five key goals for the nation to meet by 2020, as well as immediate and discrete step-wise actions to provide significant innovation in instruction and teacher preparation.

The first goal emphasizes creating communities of practice with a great deal more teacher collaboration and planning than is currently evident. This kind of professional environment for teachers — pervasive in high-performing countries — can exist far more widely in the United States, but first, education leaders need to restructure time and staffing so that teachers can work together and with groups of students in new ways that are supported by technology.

Beyond restructuring time and staffing in schools, we need to give American teachers significantly better preparation, professional development, and supports than they receive today. Enhancing technology infrastructure and capabilities will bring fresh potential for teachers' preparation and professional development at relatively low cost. To date, higher education, K-12 schools, and early learning programs have made only slow and scattered progress in changing their educational practices. By working together they can take a major step forward in providing

productive educational support across grades and settings by adopting shared standards for student outcomes — standards that reflect the developmental and learning sciences, national common core approaches, and the full range of learning associated with new technologies. A vision of developmentally connected learning from ages 3 to 8 can drive coordinated efforts of teachers, families, and the community. This report outlines specific recommendations for advancing this goal.

The second goal is to train early educators to integrate digital and screen media into their teaching practices in developmentally appropriate ways. The Council recommends that every accredited early childhood setting be assessed against new technology integration standards to be developed by field leaders such as the National Association for the Education of Young Children (NAEYC). The Council also concludes that a step-wise approach to introducing new professional development capacity to early education programs of diverse professional need should take place via cost-effective distance learning methods.

The third goal articulated here is to expand use of public media as a resource for teachers. The public media assets developed by highly trusted, research-based organizations for educational media distribution are a largely untapped and very low-cost resource. Moreover, they have the potential to extend and connect the learning that takes place at home and in school. New models for preparing teachers to use these assets for educational impact can be constructed efficiently without starting from scratch; emerging models for teachers to share their innovations in both the private and public sectors appear promising. This report offers a range of examples and descriptions of how public media assets may be brought into play. Further, the creation of innovative models for public-private partnership investments in public media assets to help align and strengthen the impact of teacher quality improvements is worth pursuing.

The fourth goal is to integrate technology supports into standards, curriculum, and teaching. The Council recommends that the federal government partner with states and the private sector to ensure that a technology infrastructure exists in every school and community. At the highest levels of policy, new priority must be accorded to promote better teaching and learning from the start. Government agencies at the national and state levels can help ensure that new media technologies are deployed equitably for underserved children and their teachers.

Other proposed actions at the national level include providing states with funding and accountability incentives to align the instructional system of standards, assessments, and curriculum frame-works. At present, states hoping to "race to the top" are called upon to align both expectations for contemporary technology use and models of best practices for teaching with technology resources. A useful initial step would be to organize online curriculum repositories around instructional units and use them as interactive data collection systems; states and districts could then organize professional development around these materials, and teachers could customize individual, group, and online instruction for their needs.

Finally, the report calls for creation of R&D partnerships suited to the digital age. At present, public funding of technology tools and approaches is unevenly distributed, highly fragmented, and lacking in research priorities or mechanisms to foster interagency coordination and interdisci-plinary collaboration. Better mechanisms are needed to identify the added value from integrating digital media in instructional and assessment practices, as well as to develop rigorous design and performance metrics to advance teacher effectiveness.

An important first step is to carry out a strategic inventory of current R&D initiatives to determine more precisely what is being done to modernize the field of teacher education and professional development. Investing in infrastructure that supports R&D collaboration is also critical. We need to develop faster, cheaper multimedia sharing and delivery in order for teachers to access vital digital resources and to collaborate.

Useful first steps have been taken by the current administration in outlining new commitments to high-speed broadband access in most schools with priority to reach low-income communities.

In brief, *Take a Giant Step* identifies key challenges in moving U.S. education to the level required in our global age. Because the teacher is the key to educational effectiveness, we must direct much of our effort toward teacher preparation and support. In this endeavor, emerging digital technologies can be powerful tools, but to achieve our goals we must have a blueprint and the concerted efforts of pivotal sectors, including national policymakers, states and districts, local communities, business, researchers, and public media. This report aims to provide input for such a blueprint and spur the engagement of all parties to evolve the plan and move forward together, starting now.