

**NETWORKS FOR LEARNING RENEWAL
THE CENTER FOR COLLABORATIVE EDUCATION**

and

**[INSTITUTE FOR LEARNING TECHNOLOGIES](#)
COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK**

THE EIFFEL PROJECT

**New York City's Small Schools Partnership
Technology Learning Challenge**

EXECUTIVE OVERVIEW

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Introduction.

Emerging communications forces are making a deep, lasting transformation of education both feasible and necessary. A consortium -- led by the Center for Collaborative Education (CCE) and the [Institute for Learning Technologies](#) (ILT) at [Columbia University](#) -- has joined together to demonstrate how children contending with poverty, discrimination, and urban crowding can achieve world-class education standards when liberated by fundamental efforts at school reform, empowered by the full use of advanced digital information.

The goal is to develop and implement a high profile, large scale technology learning challenge -- the Eiffel Project -- that will demonstrate that the small schools reform movement, empowered with advanced media, can break the constraints of the traditional school, thereby enabling all children to achieve unprecedented levels of excellence.

The consortium intends to improve the educational experience of disadvantaged children dramatically by connecting an increasing number of New York's urban K-12 schools to the information superhighway, developing and implementing innovative curricular strategies, and providing effective teacher professional

development, all in support of the small schools reform movement. As currently envisioned, by the end of its fifth year, the project will directly benefit over 30,000 students, most from African-American, Latino, immigrant, and economically disadvantaged families in Harlem and Upper Manhattan, the South Bronx, Queens, downtown Brooklyn, as well as Newburgh, NY, and will serve as a national model for new educational processes suited for use in all educational settings.

A New Pedagogy for Learning Communities.

To accomplish this mission, the Eiffel Project seeks to integrate technological innovations into a practical process of education, creating fresh models of educational excellence and professional development, and demonstrating to students, parents, and the public how the new educational process will meet their needs and interests more effectively than does the status quo.

Through these initiatives, the project will demonstrate how the new network technologies can lead to better education by:

- overcoming the traditional isolation of students, teachers, and schools;
- expanding the opportunity to develop skills for work and civic life in the 21st century;
- helping children build a fuller sense of efficacy and personal empowerment;
- strengthening schools as centers of communication, helping coordinate initiatives in education, health, housing, employment, and community development; and
- mobilizing the resources of private industry, foundations, and government to improve the educational opportunities of those most in need.

Small Schools, Big Payoff.

Reform efforts nurturing small, effective schools, committed to equity and engagement, are fast becoming the norm of good pedagogical practice. A networking infrastructure for education, designed to enable teachers and students in these schools to employ, at low cost and large effect, the full range of powerful educational tools, cultural resources, and social services available electronically, will enable such schools to provide comprehensive yet compelling opportunities for their students more surely and efficiently. This effect is particularly true in inner-city schools, where wide-area networking can help redress the burden of inequitable access to economic and cultural resources that children there suffer. In concept, networked multimedia can make the richest, most powerful resources of our culture available to anyone, anywhere, at any time, and in principle this change should have greatest relative value to those who presently have least access to the fullness of our culture. All children will benefit, but the least advantaged children can benefit the most.

The Eiffel Project will combine the strong leadership of CCE in the small schools reform movement with the intellectual, cultural and human resources of Columbia

University to address the complex problems of urban, K-12 education.

The Eiffel Project.

Technologies, particularly multimedia and digital networks, can enable people to change education profoundly. These technologies alter the methods and economics governing how people produce, disseminate, and use knowledge. These changes in turn affect the curriculum: what is taught, how students gain access to it, and what human achievements result. Reshaping the curriculum through digital communications has enormous potential for advancing both intellectual excellence and democratic equity. These are the goals of this project.

High-speed networks can deliver, to any person at any place at any time, digital curricular materials that integrate multiple forms of knowledge (i.e. audio, video, imagery, simulations and sophisticated tools of analysis and synthesis) in addition to traditional text. Networks provide not only access to curricular materials, but also the means to enable students and teachers at the classroom level to communicate with the world at large, thereby breaking out of their traditional isolation. In short, the world of culture becomes a significant part of each class; and creative contribution to that culture by students and teachers themselves becomes a possibility in every educational encounter. High-speed networks can unite the library and the classroom, and open the tools and the data of advanced research to curious inquiry by all, creating a rich, high-quality environment of educational resources that empowers teachers and students to take on new and liberating roles.

To achieve its goals, the Eiffel Project will focus on using new media technologies to allow schools, teachers and students to:

1. **Use Digital Libraries to Enhance Learning.** Digital libraries -- the distributed, on-line collection of texts, images, sound, video, simulations, and data, along with powerful tools for using them -- radically reduce constraints on cultural and intellectual participation that traditionally operate in educational institutions. To enable students and teachers to make full use of digital libraries in their daily educational work, the Eiffel Project will concentrate on four tasks:

- **Infrastructure.** Extend local area networks into classrooms and link these to the world's information infrastructure by very high-speed connections, permitting small groups of students to work collaboratively to employ digital libraries in responding to significant questions and difficult problems.
- **Content.** Work with scholars, practitioners, teachers, and community leaders to develop comprehensive and specialized collections; tools of analysis, synthesis, and simulation; and strategies of engagement to make the digital library a routinely accessible and easily usable resource in the educational work of students and teachers.
- **Support.** Provide schools and teachers with effective professional development experiences that will enable them to adapt to the emerging pedagogical possibilities and provide students with tools to consult hierarchies of on-line expertise that will sustain an inquiry-driven learning

process.

- **Evaluation.** Engage in the continuous formative evaluation of such efforts in order to assemble a record of practical experience, which can then lead through progressive reflection to improved practices and an understanding of guiding principles.

2. Interact with Mentors and Experts at a Distance. One-on-one adult mentoring is tremendously effective in helping young people cope with the complications of integrating all the disparate elements of human development. Wide-area networking can greatly lower the cost in money and time that such mentoring entails. Multimedia, wide-area networks, and desk-top videoconferencing will likewise enable problem-solving groups in schools and communities to interact with diverse strata of experts, who can help the groups advance their efforts. The Eiffel Project will work to design and implement ways to use digital technologies to enable working groups of students to interact, frequently and easily, with mentors and experts.

3. Synthesize Knowledge through Project-Based Problem Solving. As it exists, the school separates the fabric of learning into discrete strands according to grade, subject, period, and lesson, and the curriculum converts powerful intellectual means into the operative ends of educational work -- e.g., whereas the historian *uses* chronology, the high-schooler learns it. Advanced media in education permit the reintegration of intellectual activity in the school, as students use powerful on-line tools and work with the contents of the digital library to pursue answers to the questions and issues that animate scholarship, science, and professional practice.

4. Integrate Educational Experience through Portfolios. Portfolios are an educational resource that can enable students to tie together all the lines of experience indicated in previous sections, using networked multimedia tools to create a public persona that expresses the cumulative character of their studies, achievements, and interests. The portfolio -- along with the accompanying exhibitions or performances -- stands as documentation of where the student has been and what the student has done through reflective action.

5. Engage in the Civic Concerns of Public Life. Through the project, students in schools should be able to engage with representatives of their communities, to work on health, environmental, and social issues, to develop habits of service and involvement, and to form a sense that they face significant choices and that they command significant resources with which to put their choices into action. It is particularly important that children growing up under difficult circumstances learn to engage in the effort to take control of those circumstances, to experience life as a series of challenges to which people can respond purposefully. Through the Eiffel Project we intend to seek out diverse opportunities to use information technologies to engage children in thinking and acting on real civic concerns. In this project, we will work with the Upper Manhattan Empowerment Zone and other groups seeking to effect long-term social change and human betterment in health, housing,

employment, safety, and environment, to apprise children of serious issues and to engage their participation in deliberation and action. We have piloted these practices through the Institute's Harlem Environmental Access Project by using wide-area communications to encourage students to recognize the breadth and diversity of concern for the environment.

6. Achieve Productive Potential in the Workplace. If the information economy exists anywhere, it is the economy of the New York-New Jersey-Connecticut Metropolitan Area. The Eiffel Project should deploy information technology in the schools with, for, and through the diverse employers in the region who constitute that information economy in communications, media, publishing, banks, universities, medicine, and government. The Eiffel Project will use high-speed digital telecommunications to build continuous, powerful connections between participating schools and the information economy of the City, region, and world, and its volunteers from Junior Achievement and elsewhere will work with students and employers to ensure that these connections provide learning opportunities and apprenticeships that will enable students to achieve their full potential within the information workplace.

7. Create Cultural Relevance within Community Experience. New technologies can radically alter the traditional politics of the curriculum, which have been narrow and exclusionary for centuries. As the Eiffel Project proceeds, it will build more and more channels linking the advanced study of the world's cultures and traditions with interested groups in the schools. It is often incanted as cause for dismay that New York City's school children speak over a hundred different native languages. By building links to the full range of cultural scholarship in universities, museums, and institutes, the Eiffel Project will make this multiplicity of linguistic and cultural identification one of the great strengths of the emerging educational system.

Advanced media have great educational significance because they enable students to master a fuller, more powerful curriculum. The Eiffel Project is advancing these possibilities by drawing creatively on the talents and intellectual property base of Columbia University and collaborating groups from both the public and the private sector.

The Coalition Partners.

The Center for Collaborative Education has been at the forefront of the small schools reform movement in New York City since 1987, providing on-going leadership to a growing number of schools that are restructuring on the model Deborah Meier created through the renowned Central Park East Schools. The [Institute for Learning Technologies](#) (ILT) at Columbia University has been a leader in the application of emerging technologies to the process of educational innovation since its founding in 1986.

Many of the strategies put forward in the Eiffel Project have been developed and tested by CCE and ILT through their existing projects. CCE has been a pioneer in

the use of portfolios and exhibitions of student work as a means of assessment and a key graduation requirement for students. ILT has been a leader, through the Dalton Technology Plan, the Living Schoolbook Project, and the Harlem Environmental Access Project, in restructuring the educational process through advanced media. (See [ILT School-based projects](#) page.)

The coalition -- led by the Center for Collaborative Education and the Institute for Learning Technologies -- currently consists of Community School District Five, Community School District Four, Countee Cullen Public Library, Eastman Kodak Company, Educational Video Center, Environmental Defense Fund, Fund for New York City Public Education, Harlem Parents Tutorial Project, Junior Achievement of New York, Inc., Lander Street Partners, National Center for Research on Education, Students and Teachers (NCREST), Newburgh Enlarged City School District, New Lab for Teaching and Learning, NYNEX, State Education Department Office of New York City School and Community Services, Upper Manhattan Empowerment Zone Development Corporation, and forty-six K-12 schools in New York.

The Eiffel Project represents a major initiative for Columbia University as a whole, involving groups from all its different parts: Teachers College (Education), the Center for New Media (Journalism), the Center for Research on Information Access (the Libraries), the Image Technology for New Media Center (Engineering), the Institute of African Studies (Graduate Faculties), Lamont-Doherty Earth Observatory (Environmental Research), and so on. Columbia University is distinguished among leading research universities as a leader in education through curricular innovation and is committed to improving the quality of life in its surrounding communities. The Eiffel Project is a key element in the University's strategic initiatives, particularly the New York City Initiative, through which Columbia seeks to serve the human needs of the City and its region.

Financial Support

Participants are aggregating funding for the project from four sources: first, the project has received a grant of \$7 million over five years from the U. S. Department of Education through its Challenge Grants for Technology in Education; second, the sponsoring coalition will provide substantial matching resources through contributed effort, equipment, services, and talent; third, the coalition is raising funds for component activities within the project from other diverse granting agencies ó federal, state, local, and private; and, fourth, the project seeks to raise funds systematically to support the project from a wide cross-section of New York City businesses and philanthropies.

The total projected budget over the initial five years of the project is expected to exceed \$20 million.

A Call for Participation.

A sound strategy makes it feasible to overcome impediments to educational innovation, provided one has the capacity to act in a sustained effort on a large scale. Through the Eiffel Project, the coalition is bringing together substantial, enduring enterprises -- ones capable of long-term, compelling action. Working together through this project, the coalition partners have the potential to effect significant educational change; and the potential to make innovations that will stand the test of time as a model for an effective information-based society, one that people will experience as both empowering and equitable.

Education is the process by which society takes the best of its past and present and gives it to its young to make the best of the future. The Center for Collaborative Education and the Institute for Learning Technologies at Columbia University, on behalf of the Eiffel Project and our coalition partners, invite participation and support on all levels from all those seeking to improve education in New York, the nation and worldwide.

More information.

A fuller description of the project, including the technology plan, is included in the [Challenge Grant Proposal](#). For additional information please contact:

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