

## Elementary Magnet Themes

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**Request From:** Jeanne Collins, Superintendent of Burlington, VT School District

**Research From:** Empirical Education Inc.

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### Description of Request:

The Burlington School District is planning to open two magnet schools in the fall of 2009. The primary rationale for creating the magnet schools is to attract more middle class students to the two elementary schools that currently have very high enrollments of students in poverty. This plan has been discussed for many years but it appears that it will finally be implemented next fall.

### Questions:

1. What research exists, if any, regarding sustainability, or environmental science, as an elementary magnet theme?
2. What research exists regarding integrated arts as a theme for elementary magnet schools?

### Report:

We conducted a search for rigorous research reports in this area. The sources included federally funded organizations, additional research centers, and several educational research databases. Our results include literature reviews, journal articles, and lists of resources. We also searched for appropriate organizations that may act as a resource. We have not done an evaluation of these organizations ourselves, but offer this list to you for your information only.

We focused on identifying resources that specifically addressed sustainability, environmental science, and/or integrated arts as magnet school themes. To supplement the research findings that directly address the questions, we have also included a selection of articles reviewing more generally magnet schools and sustainability, environmental science, and arts in education.

After a search of the databases and websites, we find that little research has been conducted on the effectiveness of specific magnet school themes. However, there are several reports on successful magnet schools. According to the report *Creating and Sustaining Successful K-8 Magnet School*, a publication from the U.S. Department of Education's Office of Innovation and Improvement, when considering magnet school themes, administrators should "choose a theme based on existing resources, local needs, and interests. The theme is linked to a clearly defined mission that attracts and energizes all stakeholders" (<http://www.ed.gov/admins/comm/choice/magnet-k8/magnetk-8.pdf>).

For the purpose of this research review, integrated arts is defined as "a pedagogy in which the arts are deeply embedded within the core of interdisciplinary learning and affirms the indispensability of arts as a core curriculum subject and concurrently a catalyst to learn other subjects." (See Vermont Arts Council)

## Questions:

### 1. What research exists, if any, regarding sustainability, or environmental science, as an elementary magnet theme?

#### 1.1. Environmental Education Saves the Day. Haines, S., and Kilpatrick, C.; April 2007; *Science and Children*, volume 44, number 8, pp. 42-47.

([www.learnoutside.org/images/Science\\_Children\\_April\\_2007.pdf](http://www.learnoutside.org/images/Science_Children_April_2007.pdf))

"At the start of each school year at Oil City Elementary Magnet School in Oil City, Louisiana, eager students ask 'What's our theme this year?' This curiosity comes from their expectations that they will study a different environmental concept each year. Kindergarten classes learn to "Be a Friend to the Earth," followed by life cycles in the first grade, and continuing through forestry, aquaculture, horticulture, meteorology, and finally habitats in sixth grade. This environmental science focus has not only increased enrollment and produced dramatic increases in test scores but also brought national recognition to the school and staff."

#### 1.2. A Science Club Takes Action. LeDee, O., et al.; July, 2007; *Science and Children*, Volume 44, number 9, pp.35-37.

([http://www.accessmylibrary.com/coms2/summary\\_0286-32917412\\_ITM](http://www.accessmylibrary.com/coms2/summary_0286-32917412_ITM))

"The after-school science club at Galtier Math, Science, and Technology Elementary Magnet School in St. Paul, Minnesota, learned some valuable lessons when they took their newfound knowledge about pollution into their homes. After learning about the effects of various contaminants on health and what informed citizens can do about it, students tested their tap water and soil. As a result, both students and their parents changed behaviors. The experience proved valuable for the educators, too, by reminding us of the power of integrating science with real-world issues and how effective they can be in guiding children to make more informed decisions about their world. It is our hope that the activity described here encourages other elementary students and teachers to examine their surroundings while exploring scientific concepts and processes."

Note: Abstract only. Full text is available from the link above via the service "Access My Library."

### 2. What research exists regarding integrated arts as a theme for elementary magnet schools?

#### 2.1. A Standards-Based, Arts-Integrated School Wide Curriculum: Worcester Arts Magnet School. *Profiles of Successful Schoolwide Programs*; 1998; U.S. Department of Education. ([http://www.ed.gov/pubs/idea\\_profiles/worcester.html](http://www.ed.gov/pubs/idea_profiles/worcester.html))

This profile of Worcester Arts Magnet School (K-6) describes the vision, student performance results and strategies to achieve high standards. "Teachers and parents form a powerful partnership at Worcester Arts Magnet. In 1996-97, 18 committees—each comprising a mix of teachers, support staff, administrators, and parents—undertook a self-study to attain accreditation from the New England Association of Schools and Colleges. Over the course of a full year, the committees prepared a detailed status report about the school and reasserted the school's commitment to its unique integrated arts and academic program. According to the school's mission statement: 'Our faculty strives to...integrate the arts in everyday lessons [because] they help students tap into their creative strengths, raising their self-esteem and enabling them to experience both academic and artistic success.'...The accountability orientation has so increased the faculty's commitment to using test results that, in 1996, Worcester Arts Magnet students achieved the state's sixth-highest relative gain on the Massachusetts Educational Assessment Program."

## Resources on Sustainability and Environmental Studies Education in General

- **Barnard Environmental Studies Magnet School, Learning with an Environmental Focus.** (<http://www.nhps.net/barnard/>) "Barnard Environmental Studies Magnet School's mission is to offer a comprehensive education that provides students with a strong academic foundation for lifelong learning, caring relationships with others, and a passion for environmental stewardship. Environmental studies integrate the curriculum; engage students through challenging,

inquiry-based activities; and inspire a sense of wonder that encourages an active pursuit of a sustainable future.”

- **Science/Technology/Society. Focus on Excellence, Volume 1, Number 5.** *Penick, J. E., Meinhard-Pellens, R.; 1984; Iowa University, Iowa City; Science Education Center; National Science Teachers Association, Washington, D.C.*  
([http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content\\_storage\\_01/0000019b/80/22/c3/75.pdf](http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/22/c3/75.pdf))  
“This document describes 10 examples of innovative and outstanding science/technology /society (STS) programs. These programs were selected using state criteria and at least four independent reviewers. While Project Synthesis offered a desired state, these examples of excellence provided views of what is already a reality. The goals of an exemplary science program are provided along with the criteria for excellence. The programs described are: (1) Unified Science Modules; (2) Solar Project Class; (3) Environmental Science; (4) Energy and Us; (5) Mankind: A Biological and Social View; (6) Wallingford Auditing Technical Team; (7) Science/Mathematics/Computer Magnet School; (8) Contemporary Issues in Science; (9) Earthscope; and (10) Marine Environmental Program.”

### Resources on Integrated Arts Education in General

- **Learning from Six High Poverty, High Achieving Blue Ribbon Schools — 2004.** *U.S. Department of Education. Washington, D.C.* (<http://www.ed.gov/programs/nclbbrs/2004/profiles/>)  
In 2004 the U.S. Department of Education recognized Woodrow Wilson as a Blue Ribbon School. “Wilson students are motivated and high achieving, thanks in part to the school's student-centered philosophy based on an arts-infused curriculum. The vision of ‘educated, well-rounded students with self-understanding and an ability to use their talents’ is its driving force.”  
**Woodrow Wilson Elementary School, Weehawken, NJ**  
(<http://www.ed.gov/programs/nclbbrs/2004/profiles/woodrow-wilson.pdf>)  
“Most Wilson students test well above average in district-mandated tests, and show significant growth in higher order thinking on cognitive tests. And despite low-income backgrounds, students score high on measures of self such as social skills, competence, emotional balance, and physical and academic ability. Woodrow Wilson graduates tend to do well, forming the highest number of honors students at one district high school and the greatest number of 1000+ scores on the SAT exams in the district.”
- **Critical Evidence: How the Arts Benefit Student Achievement.** *Ruppert, Sandra S.* Arts Education Partnership. 2004  
(<http://www.aep-arts.org/files/research/Critical%20Evidence.pdf>)  
A new booklet published by the National Assembly of State Arts Agencies (NASAA) in collaboration with the Arts Education Partnership (AEP).” According to Ruppert, “Schools integrating the arts in the curriculum as part of a comprehensive education reform are documenting positive changes in the school environment and improved student performance.”
- **How Arts Integration Supports Student Learning: Students Shed Light on the Connections.** *DeMoss, Karen and Terry Morris. University of New Mexico.*  
(<http://www.capeweb.org/demoss.pdf>)  
“Learning in and with the arts has been linked with increased student achievement, but the means by which the arts may support cognitive growth in students is relatively undocumented. Thirty students across ten classes in veteran teacher artist partnerships were selected to help explore the processes and outcomes associated with arts-integrated learning units versus learning processes and outcomes in comparable non-arts units. The student sample evenly represented comparatively high, medium, and low achievers. Even though we observed differences in levels of arts integration across classrooms, students from all achievement levels displayed significant increases in their ability to analytically assess their own learning following arts-integrated units. No such gains associated with traditional instructional experiences. Students also described their arts-integrated versus non-arts learning differently. Arts-integrated instruction: 1) created more independent and intrinsically motivated investments in learning, 2) fostered learning for understanding as opposed to recall of facts for tests, 3) transformed students’ characterizations of ‘learning barriers’ into ‘challenges’ to be solved, and 4) inspired students to pursue further learning opportunities outside of class.”

- **Champions of Change: The Impact of the arts on learning.** Catterall, James S.; *The Chicago Arts Partnerships in Education Evaluation*; Washington, D.C.; Chief Council of State School Officers; 1999.

(<http://www.capeweb.org/CAPEChamp.pdf>)

“The purpose of this monograph is to highlight the development of CAPE and its effects through the multiple inquiry lenses trained on the program over its first six years. The story is one of development and learning by school communities, teachers, and artists as they became increasingly and more deeply involved in arts-integrated instruction. It is also a story of increasingly tangible and measurable effects on student learning as the program matured.” Monograph p. 48.

Linked from the **Vermont Arts Council Arts Integration** page:

<http://www.vermontartscouncil.org/ArtsEducation/Partnerships/tabid/164/Default.aspx>

“Research in Support of Arts Learning: Champions of Change: The impact of the Arts on Learning (Fiske, 1999) highlights some of the nonacademic benefits of the arts that carefully controlled studies demonstrate:

1. The arts reach students not ordinarily reached, with methods not normally used, which keeps tardy, truancy, and dropout rates down.
2. Students connect to one another better and experience greater camaraderie, fewer fights, and less prejudice when the arts are central to their learning.
3. Arts education requires an environment of discovery that can rekindle the love of learning in students who are tired of being filled up with facts.
4. The arts provide challenges for students at all levels, from delayed to gifted. In the arts, all students can find their own level of performance.
5. The arts connect learners to the world of real work in which theater, music, visual arts and dance appeal to a growing consumer public.”

### Additional Organizations to Consult

- **Connecticut Outdoor & Environmental Education Association (COEEA)** (<http://www.coeea.org/>) is an association that supports Connecticut's outdoor and environmental educators as they promote responsible environmental stewardship.
- **National Science Teachers Association** ([www.nsta.org/](http://www.nsta.org/)) has extensive collection of information about the teaching of science.
- **Magnet Schools of America** ([www.magnet.edu/](http://www.magnet.edu/)) provides leadership for innovative instructional programs that promote equity, diversity, and academic excellence for all students in public school choice programs.

### Key words and search strings used in the search:

Elementary Magnet School, Sustainability, Environmental Science, Magnet School, Environmental Education, Science Education, Integrated Arts, Integrated curriculum, Magnet School Themes, Student Achievement

### Search databases and websites:

Sources For Rigorous Research Reports: Regional Educational Laboratory Program (REL); What Works Clearinghouse (WWC); National Center for Education Statistics (NCES); Institute for Education Sciences; IES; Doing What Works (DWW); The Campbell Collaboration; Data Quality Campaign; IES Practice Guides

Other Federally Funded Sites: The Assessment and Accountability Comprehensive Center; Education Statistics Quarterly; National Center for Education Statistics (NCES) Datasets: K – 12; Access Center for Improving Outcomes for All Students K-8; Center for Comprehensive School Reform and Improvement; Regional Comprehensive Centers; The Center on Innovation and Improvement; The Center on Instruction; Education Commission of the States National Assessment of Educational Progress (NAEP); Early Childhood Longitudinal Study (ECLS); National Household Education Survey (NHES); National Center for Research on Evaluation, Standards, and Student Testing; National Center for Performance Incentives; RELNEI: Elementary Magnet Themes

National Research Center on the Gifted and Talented; National Research and Development Center for English Language Learners; National Research and Development Center on School Choice, Competition and Achievement; Access Center for Improving Outcomes for All Students K-8; National Dropout Prevention Center/Network;

Additional Data Resources: Education Development Center; Just for Kids; Great Schools; PSK12; Kids Count; School Data Direct; SRI International; American Institutes for Research; The Education Trust; ERIC; Sage Publications; ProQuest Databases; JSTOR; Education Development Center; West Ed; <http://www.google.com>; <http://www.goglescholar.com>; U.S. Department of Education

### **REL Northeast and Islands**

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