**A STREAM Model for Education**

Blue Sky Paper on a STREAM Education Barbara J. Smith

 A STREAM-focused curriculum emphasizes inquiry within the following contexts:

## S = Social & Emotional Learning

## T = Technology & Engineering

## R = Relating to the Environment

## E = Entrepreneurship

## A = Arts & Athletics

## M = Mastery of Core Subjects

There are STEM and STEAM programs that are quite popular in many schools, but the idea of a STREAM school focuses on a unique emphasis of environmentalism and entrepreneurship. Such a context can support social and emotional learning as charter education, service learning and health education can be enhanced in authentic learning environments outside the classroom as well as entrepreneurial inquiries inside the school setting.

A focus on the environment and entrepreneurship can be enhanced by learning how to use technology as well as the principles of engineering as students construct applications of their understandings. In a STREAM-focused schools students make things that demonstrate their appreciation for the environment as well as their capacity to design beyond what exists today.

Learning about the arts and having the opportunity to build’s one athleticism contributes to the environmental and entrepreneurial mission of the school. Expression and creativity in an outdoor setting can fuel new ideas and an entrepreneurial spirit. The mind-body connection is often lost in schools when students do not experience daily physical education. Minimizing exposure to the arts can also diminish the overall intellectual return.

In a STREAM-focused school, the M for mastery of core subjects is no longer about ranking students on standardized tests. Fewer more rigorous standards in mathematics, language arts, science and social studies are designated so that all students can demonstrate mastery. The contexts for the study of core subjects is environmentalism and entrepreneurship. Topics and projects are fully integrated into a purposeful curriculum, not disconnected ‘bits’ for consumption.

Most schools focus on mastering core subjects. There are, however, alternatives for school and curriculum design that can be more engaging for students and teachers. At one 2-room schoolhouse in Ontario we created a multi-age program around the STREAM curriculum.

One room was called the Imagination Lab and the other room was called the Innovation Lab.

In the Imagination Center, students studied English language arts and social studies, specifically focused on comparing the stories, industry and landscape of the local area with other regions around the world. A small room open to the Imagination Lab featured a comfortable library. Within the lab children rotated through several centers each day including writing, word games, drama, and the mini-lesson table where the teacher worked with one or two students at time. In this space, the teacher did not teach the same lesson to all the students at the same time; rather, the program was differentiated to support the specific needs of each students. Given there were upwards of three grades in the multi-aged classroom, it was important for the teacher to customize the teaching so that all could achieve mastery.

Similarly, in the Innovation Lab, students moved between a chess center, a Lego center, a computer games center, a robotics center and the teacher mini-lesson table. In an adjoining open room, students could use the STEM library to research non-fiction books for their projects.

Everyone started the day with a run or game outdoors. A quick meeting with some inspirational words from the school leader was followed by two rotations in the day in each of the two rooms. Midway through the day all students take part in a daily arts and world languages class. The school has twenty students with two teachers, one who teaches all the students in the Innovation Lab and the other who teaches all the students in the Imagination Lab. To further gain an appreciation for entrepreneurs, students go on field trips once a week into the community to discover the wealth of businesses and careers in the rural and urban area.

The STREAM curriculum worked for a small school, but such a focus could work in a variety of physical settings. The culture of a school community is enhanced when a school size is small (i.e. 300 or less students) and when classroom sizes are small enough to permit for customized learning (i.e. 10-14 students). It would be difficult with large class sizes to move beyond the industrial model of a curriculum where the teaches all the students at the same. In a small school with a strong program, students do not have to compromise a quality education. It is simply a myth that larger schools provide a better education. Check out the research. Students in smaller schools are more engaged and excel in school. For engaging and mastery learning to take hold, schools must embrace the ‘smallness’ rather than ‘sameness’.