

Curriculum Driven Design: Harnessing green buildings as teaching tools

PLATINUM



The Learning Gate Community School (LGCS) in Lutz, FL just completed a three-building expansion to their existing campus. The goal for these new green buildings was to use the “school as a teaching tool” while still addressing state standards. The LGCS staff found that the green buildings provided many unique and exciting teaching opportunities. The staff established a successful process for new curriculum development and a philosophy that allowed for inquiry and learning for all grade levels.

The beginning of the curriculum development process was both teacher and administrative driven. The administration scheduled staff development meetings as a catalyst for new lessons and units. The first task for the staff was to create a list of possible opportunities for lessons such as the HVAC system, the solar power system, the water conservation systems, the recycled building materials, and numerous other possibilities. In every future curriculum development meeting, the staff was focused on one of these building design features. The curriculum design committee would focus on a green building feature until they had a selection of lessons for each grade level. School principal Patti Girard reported, “Our teachers determine lessons they can develop for different aspects of the building and grounds and the students are actively part of those ideas. For example, our students have to bring water bottles to school. When they moved into the green buildings, they immediately noticed was that their water bottles weren’t sweating any longer. This began a holistic lesson in

understanding why they didn’t sweat.”

Adam Woodford, a science teacher at LGCS, presented several model examples of curriculum design. In his classes, students performed experiments and created projects surrounding the building’s air quality, water systems, insulation and UV-shaded windows. As a specific

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*-Michelle Mason,
Curriculum Coordinator*

illustration of the possibilities for green building curriculum, Mr. Woodford explained how he used the building insulation as a learning tool. Students began by researching the type of insulation used in their building and the chemicals associated with its production. Next, they researched common alternative building insulation types. Then, the students built miniature houses utilizing the various insulation materials and measured the temperatures inside and outside the buildings. Students used the data to create a cost benefit analysis for the various materials. According to Mr. Woodford, the key was to “look at materials that are there on site.” He calls this the “proximity of interest”. This emphasized the benefits of a student’s ability to see, feel and experience their lessons and how this created both deep and transferable knowledge.

Administration and staff must support the curriculum development process in order for the process to be successful. With focused work group, teachers can develop the lessons quickly and effectively. Once your school has the process for developing curriculum using the building as a teaching tool it is much easier to develop the products in units and

The LGCS used a motivated committee that consisted of multiple stakeholders to insure buy-in and motivation for the campus expansion. They understood the importance of designing a built environment to meet the needs of their teachers which also serves as a living classroom for their students. LGCS staff has successfully developed over 100 lessons and units dealing with the green building and sustainability components. The students can explain and describe the green building components; many students act as “green ambassadors” for the school.

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lesson plans. Michelle Mason states, "It's not just about the (teaching and learning) pieces, it's the whole philosophy that is around it." The teachers need to see the benefits for their work and the potential for the students. Once this philosophy is nurtured in your school, the students will become invested in their environment and the teachers will be able to create hands-on, real world problems for their students. It follows that using the school as a teaching tool supports the sense of place that the LGCS has been teaching for the last 25 years.



YouTube Video: Project Based Learning at Learning Gate

Additional Resources

- [Green Education Foundation](#)
- [School as a Teaching Tool Lesson Plans](#)

Want to learn more about the school as a teaching tool?
Here are some tips:

1. Create a philosophy in your school that emphasizes inquiry learning and creating a sense of place for the students.
2. When putting a development team together, find and choose at least one champion that has the ability to persevere and keep the project moving.
3. Involve all stakeholders whenever possible. This includes teachers, students, parents and administration.
4. The professional team of architects, designers and builders need to be invested in the philosophy of the project. They need to understand the important distinction that they are not creating a green building FOR the committee, but working WITH the committee to develop the green building.
5. To create curriculum, first start with an inventory of all of the possible features that lessons and curriculum can be designed around.
6. The administration needs to be supportive of new curriculum development. If the school is going to be used as a teaching tool, they need to provide professional development time and a focus for the teachers.
7. The students can help with all stages of green building and operation if they are provided the opportunities.
8. The best components to use in the green building for lessons are the ones that the students can see, touch and feel.

Educational Materials Related to this Case Study