

Project LAUNCH –Bringing Space into Math and Science Classrooms. M. Fauerbach¹, D. P. Henry¹, D. L. Schmidt¹, ¹Whitaker Center, Florida Gulf Coast University, 10501 FGCU Blvd., Ft. Myers, FL 33965-6565.

Introduction: Project LAUNCH is a K-12 teacher professional development program, which has been created in collaboration between the Whitaker Center for Science, Mathematics and Technology Education at Florida Gulf Coast University (FGCU), and the Florida Space Research Institute (FSRI). Utilizing ‘Space’ as the overarching theme it is designed to improve mathematics and science teaching, using inquiry based, hands-on teaching practices, which are aligned with Florida’s Sunshine State Standards. Many students are excited about space exploration and it provides a great venue to get them involved in science and mathematics. The scope of Project LAUNCH however goes beyond just providing competency in the subject area, as pedagogy is also an intricate part of the project. Participants were introduced to the Conceptual Change Model (CCM) [1] as a framework to model good teaching practices. As the CCM closely follows what scientists call the scientific process, this teaching method is also useful to actively engage institute participants –as well as their students- in ‘real’ science. Project LAUNCH specifically targets teachers in low performing, high socioeconomic schools, where the need for skilled teachers is most critical.

Details of the inaugural year. The initial phase of Project LAUNCH started in the summer of 2004 with two week long summer institutes for in-service teachers and administrators. A total of three institutes were held, two at FGCU, and one at Embrey Riddle Aeronautical University’s Daytona Beach campus. A total of 68 elementary and middle school teachers from eight counties participated in these first institutes. The eight counties encompass both urban and rural school districts from Florida’s east to west coast. To ensure full support of Project LAUNCH by the school districts, district representatives were involved in the initial planning sessions. A university scientist and mathematician, as well as a professional educator led each summer institute. The inclusion of the educators was an important part of the success of the summer institutes. Not only did the institute participants open up easier to their ‘peers’, the educators were also crucial in keeping the scientists ‘straight’ when they strayed too far from the pedagogical principles. The summer institutes were designed around existing NASA material, wherever possible. There already exist a wealth of very good educational material; locating it is unfortunately not always an easy task. Therefore, part of the summer institutes was spent familiarizing participants with NASA’s educational resources.

However, the goal of the institutes was not to simply provide ‘cookbook recipes’ to the participants, but to empower them to apply concepts and activities – utilizing the CCM- to their appropriate grade level. Naturally, lesson planning was part of the institutes.

In addition to the summer institutes, Project LAUNCH employs two fulltime aerospace educators, who provide ongoing mentoring and support, with school and classroom visits during the academic year. The aerospace educators also conduct four additional workshops where institute participants are encouraged to share their experiences.

The Future. Using the feedback provided by the participants, the instructors and by a professional evaluator, we are currently in the process of rearranging and rewriting parts of the instructors and student notebooks used during the inaugural summer institutes. The original participants in Project LAUNCH are invited back for a round of institutes in the summer of 2005. The theme of these second year institutes will be astrobiology. Moreover, we anticipate engaging 90 additional participants from the original eight county target area, in the revised version of the first year institutes. Furthermore, we are currently in negotiations with rural school districts across the northern portion of State of Florida to utilize our training material.

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References:

[1] Stepan, J. (2003). *Targeting Students’ Science Misconceptions: Physical Science Concepts Using the Conceptual Change Model.* Tampa, FL: Showboard, Inc.