

Project CAPSTONE

***Clark Advanced Learning Center/
Indian River Community College***

Year 2 Evaluation Report

March 2007

[Reporting period Aug. 2006 – March 2007]

Submitted by

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Introduction

Project CAPSTONE is a collaborative effort between Indian River Community College and the Martin County School District. The project seeks to create and implement an interdisciplinary, project-based model to prepare high school students for scientific and technical careers. The project is based at the Clark Advanced Learning Center, a joint high school/community college facility in south Florida.

Over the course of three years, approximately 200 high school juniors and seniors are directly served by the project. Activities include the development of integrated math, science and technology curricula; the creation of industry relevant technical experiences guided by career pathways; enhancement of high school programs that articulate to associate degrees; and provision of professional development experiences for CALC teachers. Through partnering with the South Florida Water Management District and other government/industry organizations, the project develops a school-wide learning project focused on local environmental restoration efforts. Career pathways are supported through e-mentoring as well as student internships with industry professionals.

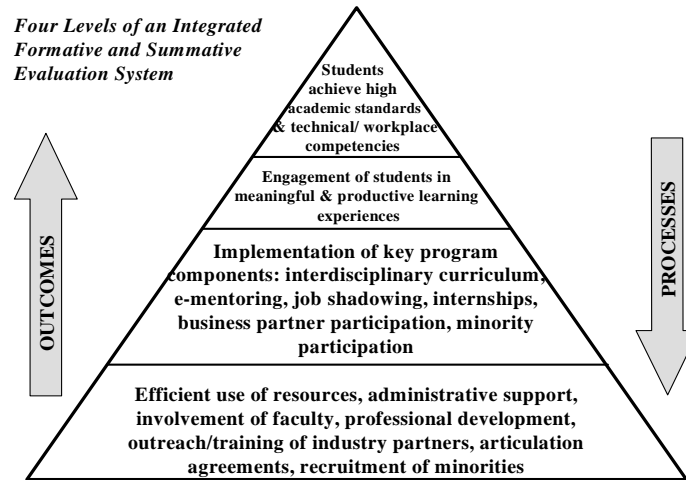
The Year 2 Evaluation Report covers the reporting period of August 2006 – March 2007, and is designed to complement the Project Annual Report. This report is a 3rd party evaluation prepared by George Reid, Ph. D. of the Performance Design Group, Sarasota, Florida. For this time period, data and conclusions primarily present a *formative evaluation*.

Overall Evaluation Plan

The evaluation incorporates both formative and summative evaluation approaches. Summative evaluation will address the overall impacts and outcomes of the project, while formative evaluation will focus on levels and quality of implementation, along with progress indicators. Progress evaluation is guided by the project timetable and schedule of deliverables/milestones. Evaluation will follow recommended NSF practices as outlined by Frechtling and Sharp (1997) and Frechtling (2002).

The evaluation process examines not only outcomes and processes, but will attempt to associate hierarchical levels of the project, as outlined in the figure below. Program components and inputs are illustrative and not a comprehensive listing.

Integrated levels of evaluation



The integrated levels of evaluation represent a logic model, similar to the model presented by Frechtling. The evaluation questions and data collection methods described below provide data on all four levels of the evaluation model. The evaluation plan provides for the communication of formative and process data to the project staff on an ongoing basis to allow adjustments to be made in inputs, processes and outputs, thereby increasing the probability that planned outcomes will be achieved.

Dr. George Reid of the Performance Design Group has been contracted to manage the evaluation process. The evaluator is responsible for communicating the evaluation design to project staff and insuring that data collection tasks are accomplished according to schedule. The evaluator communicates frequently with the Principal Investigator and school director to monitor the implementation process and provide formative evaluation feedback on products and processes. The evaluator also is responsible for developing several rubrics and/or evaluation instruments for formative and summative evaluation throughout the project.

Summative Evaluation Questions and Management Plan

Summative Evaluation Questions	Data Source/Instruments	Timeline/Frequency/ Responsibility
1. Have students involved in Project Capstone maintained or increased their GPA while taking on- or above-level classes?	Student records	Each semester: Spring 2006 – Spring 2008
2. What changes have occurred in enrollment patterns in advanced/dual enrollment courses, science/math courses, or demographics of enrolled students?	Student records	Annually: Fall 2006, 2007, 2008
3. Has there been an increase in scores on the College Placement Test (CPT) and/or SAT/ACT test scores?	School test reports	Annually: Spring 2006, 2007, 2008
4. Have students gained additional competencies in technology, research, laboratory and field-analysis , and SCANS/ workplace skills ?	Observation, products – including the senior project, surveys and interviews with students, faculty and industry partners; assessment of job shadowing & internship experiences	Ongoing; survey annually: Spring 2006, 2007, 2008
5. Have students gained additional knowledge related to science , the environment , and the Everglades ecosystem in particular?	Pre and post survey of students; additional student and faculty surveys/ interviews. Knowledge instrument developed locally; FCAT Science.	Pre-assessment: Aug. 2006; interim assessment 12/06. Post-assessments: Annually in June 2006, 2007, 2008. FCAT Science spring 05, 06, 07
6. Have students exhibited positive changes in <i>attitudes</i> and/or <i>aspirations</i> related to science, mathematics, engineering and/or technology , including careers or advanced training in these areas?	Pre and post survey of students; interviews and/or focus groups with students, faculty and industry partners Survey developed locally – 50 items.	Annually: Fall/Spring 2007, 2008, 2009. Fall 06 results available.
7. Have student attendance rates increased and/or have incidents of student discipline decreased?	Uniform student attendance and discipline records	Annually: Summer 2006, 2007, 2008
8. Have enrollments of female/ minority /underrepresented populations increased?	CALC enrollment and demographic records	Annually: Fall 2007, 2008

Summative Evaluation Questions, <i>continued ...</i>	Data Source/Instruments	Timeline/Frequency/ Responsibility
9. Have external partners (industry/government/research) increased their (1) involvement with, (2) knowledge of and (3) appreciation for CALC and IRCC training programs and potential in the areas of science, mathematics, engineering and technology?	Surveys and interviews with external partners, including internship sponsors and advisement committee	Annually: Spring 2006, 2007, 2008
10. Has the project adequately documented critical program components in media that are exportable to other institutions , allowing for replication of the program and results?	Descriptive/product documentation; documentation of formative evaluation of product relevance and usability.	Annual documentation; end-of-project summary
11. Are the program and results sustainable and renewable , based on current capabilities and resources?	Resource, facility and personnel assessment.	Annual documentation; end-of-project analysis

Formative/Process/Implementation Evaluation Questions and Management Plan

(See **Goals and Deliverables** Table for additional information and detail)

Formative/Process Evaluation Questions	Data Source/Instruments	Timeline/Frequency/Responsibility
1. Were planned products developed on time and delivered/utilized for their intended purpose?	Actual products and task-timelines: curriculum, handbooks, training manuals, brochures, assessment tools, etc.	Determined by project schedule or quarterly/annually
2. Were all products subjected to technical and/or quality review , and indicated revisions incorporated prior to being fully utilized?	Event agendas, registration/attendance records Curriculum product rubric was developed; staff oriented to review process	Determined by project schedule and intended target audiences, or quarterly and annually
3. Did planned events , including professional development , occur on time? What was the level and nature of participation in the events/training?	Records of reviews and revisions; involvement of reviewers and target audiences.	Determined by project/development schedule – school year + summer
4. Did training/ workshops achieve their intended outcomes ? Did participants rate workshops/ events as being relevant and of high quality ?	Results of surveys, evaluations, and/or interviews/observations administered following events or professional development	Each significant event or training session/institute; project staff and/or evaluation consultant
5. Were other project milestones completed on time and consistent with specifications?	Project portfolio and documentation of stakeholder meetings, agreements, communications & approvals	Determined by project schedule or quarterly/annually
6. Were grant funds expended according to schedule and consistent with plans? Were additional or supplemental funds acquired as planned and were these funds applied to the project according to plan?	Project budget reports	Grant budget as approved; biannually
7. Were key project personnel identified and did their participation in the project conform to plan?	Project records; interviews with project staff	Biannually

Formative/Process Evaluation Questions, <i>continued</i> ...	Data Source/Instruments	Timeline/Frequency/Responsibility
8. Were external partners contacted and was their participation realized at the level specified in the plan?	Project records/partner database; interviews with project staff and external partners	Biannually
9. Were key components of the project implemented at the level intended?	Additional project records, including all the above products and deliverables; surveys/interviews with project personnel, external partners, administration and students.	Annually
10. What was the level of participation of students in all aspects of the project?	Records of participation, student surveys & interviews	Annually – data collection quarterly
11. How did students and teachers rate the relevance, quality and effectiveness of project experiences and outcomes? What was the level of engagement of students and teachers in key project activities?	Surveys, interviews, products, observations	Annually – data collection quarterly

Methodology for Year 2 Evaluation

The evaluator conducted a site visits to the Clark Learning Center on the IRCC campus in Stuart, Florida on November 30, 2006. During that visit, discussions were conducted with the Maria Mosley, Executive Director of CALC, Patty Winterburn, IRCC Provost, Susan Roark, Principle Investigator, Craig Sprafka, Project Director, Pat Della Penta, Co-PI, Beth Mazzouccolo, Career Specialist, and several members of the teaching staff. Agenda items for the visit included Project Vision, Project Wiki, Current Status, Professional Development, Career Path Programs, and Curriculum Planning. Throughout the project year, the evaluator communicated via e-mail and phone to the school director, principal investigator, and occasionally with the teaching staff. The evaluator was included in the e-mailing list for project activities and had password access to internal and public project Websites. In addition, a communication link was established with the IRCC provost's office to arrange for data reports specified in the Data Source table of the design.

Data Sources for Report

- **October 2006:** E-mail exchanges and conference calls with new project director and executive director to plan for data collection and site visit
- **November 2006 Site Visit:** Met with PI and Executive Director to review grant and coordinate evaluation design with project design and timetable. Assisted PI in detailing evaluation and monitoring activities associated with Goals and Deliverables Action Plan. Met for several hours with project teachers to review plans and products and to review data collection needs for formative and summative evaluation. Observed planning workshop for year's events conducted by PI and Executive Director.
- **January- March 2007:** E-mails and phone conferences with project director to exchange data and planning for annual report and evaluation report
- **Products and events portfolio:** (August 2006 – March 2007) Reviewed Web references, links and attachments from <http://calcadmin.pbwiki.com/Evaluation> and <http://calceverglades.pbwiki.com/Career-Training?doneSave=1>
- **School and student data:** Date printouts, electronic and Web-based data elements from IRCC, CALC, and Florida Department of Education/NCLB data elements
- **Communications:** Primarily e-mails from and among project staff detailing events, data, meetings minutes, and summary documents.

Formative Findings by Goal Area: Through March 2007

GOAL #1: Develop & strengthen math, science and technology curriculum		
ITEM	DESCRIPTION	EVALUATION
Interdisciplinary curriculum outline	<p>Workshop: grant concept & role of PI, Co-PI & teachers</p> <p>Workshop: developing thematic, interdisciplinary units and project based learning</p> <p>Curriculum outline development</p>	<ul style="list-style-type: none"> ● Curriculum development and planning was focus of 9 day professional development session in July-August 2005; 3 days in December 2005, with follow-up work in the spring of 2006 ● Additional planning occurred during a workshop conducted 7/24-/06-8/4/06
Interdisciplinary learning modules	Development of interdisciplinary units including syllabi, student assignments and student assessments	<p>Products/outcomes documented by the evaluator:</p> <ul style="list-style-type: none"> ● Reviewed 5 completed modules posted on calceverglades.pbwiki.com (3/07): Mathematics, science, social studies, and (2) technology modules. Components include objectives, background, activity (time, materials, location), resources, assessment, and teacher notes, plus examples of student projects. Each module contains correlations to Florida Sunshine State Standards ● E-commerce Everglades project (Web-based business: <i>Everglades Tourism Company</i>) ● Electronic Jeopardy-type game developed to review interdisciplinary facts related to wetlands, marine environments, Everglades
e-mentoring program	<p>Development of e-mentoring curriculum, including syllabus, student assignments and assessments</p> <p>Recruitment of business partners</p> <p>e-mentoring database</p> <p>Training of e-mentors</p> <p>Matching of e-mentors to students</p> <p>Monitoring e-mentoring progress</p>	<ul style="list-style-type: none"> ● Program has begun in medical careers area ● Program commenced in fall of '06 with partial implementation. Increasing implementation spring '07 (planned May 2007)
e-mentoring handbook	Mentor handbook with student and mentor guidelines	<ul style="list-style-type: none"> ● Complete Fall 2006

GOAL #2: Create industry-relevant technical experiences that develop student career pathways		
ITEM	DESCRIPTION	EVALUATION
11 th grade job shadowing	Job shadow data base of business partners Job shadow manual Job shadow curriculum Job shadow coordination	Products/outcomes documented by the evaluator: <ul style="list-style-type: none"> ▪ Job shadowing invitation, procedures and permission forms ▪ Evaluation procedures: rubric and essay guidelines ▪ 13 job shadowing business partners participated in the 06-07 school year ▪ 33 juniors participated in job shadowing experiences in the 06-07 school year
12 th grade internship	Internship data base of business partners Internship manual Internship curriculum (skills) Internship coordination	Products/outcomes documented by the evaluator: <ul style="list-style-type: none"> ▪ Senior Internship Manual describes school, program advantages, student responsibilities, internship course content, and calendar ▪ E-portfolio details methods of documenting skills & experiences ▪ Internship training agreement, training plan & time card tools ▪ Business partner 's evaluation of student: forms/procedures ▪ Capstone Project planning and guidelines ▪ 61 (100 %) seniors participated in internships the 06-07 school year ▪ Career specialist and student presented example internship project with local environmental engineering company (LBFH, Inc.)
Business partner training	Business partner workshop Internet training, guidance and support	Products/outcomes documented by the evaluator: <ul style="list-style-type: none"> ▪ Business Partner Manual describes school, program advantages, partner responsibilities, internship course content, calendar and involvement in e-portfolio ▪ Internship training agreement, training plan & time card tools ▪ Business partner 's evaluation of student interns: reviewed 3 completed sample evaluations (12/06); detailed objective and narrative evaluations of participation (all positive)

GOAL #3: Provide support for program improvement and enhancement		
ITEM	DESCRIPTION	EVALUATION
Procurement of materials to support grant	Selection of items to support curriculum projects PO and purchasing coordination	<ul style="list-style-type: none"> ▪ As of 2/20/07 the project has encumbered or expended ~89% of fiscal year funds. Funds utilized for professional development, salaries, instructional materials, software, required conferences and science instructional equipment.
Industry Partner advisement committee	Recruit business partners to assist CALC with curriculum and classroom activities Organize workshops two times per year (summer/spg)	<ul style="list-style-type: none"> ▪ 6 major partners participated in January 07 "Headwaters" event ▪ Coordinating partners include South Florida Water Management District, Florida Fish & Wildlife, Florida Sportsman, University of Florida (IFAS), Smithsonian Institute ▪ The CALC Management Board members are the first contacts for industry and business partner input and advisement. They establish a core base of industry and business partners who provide curriculum guidance, support work-based learning experiences and assist with project, curriculum, financial and operational advisement.
CALC recruitment of female, minority under-represented groups	High school visits Civic organization visits in Indian town & other appropriate locations	<ul style="list-style-type: none"> ▪ School recruiting visits include descriptions of Everglades Restoration project, capstone, shadowing, internships, college credit, career pathways, and related opportunities ▪ Save the Earth Day at CALC, April 29, 2006 was a major showcasing and recruiting event for the center: Theme: Saving the Everglades ▪ Techno Camp offered July 17 – 21, 2006 ▪ Increase to 16.5% from 12.5% previous year (February) ▪ Decrease in female percentage from 50% to 44%
Articulation Agreements	Formalized articulation agreements	<ul style="list-style-type: none"> ▪ Formal articulation with Indian River Community College and State University System institutions for acceptance of dual enrollment credits (via IRCC)

GOAL #3: Provide support for program improvement and enhancement		
ITEM	DESCRIPTION	EVALUATION
Evaluation Plan	Create evaluation plan/design Develop program evaluation instruments Develop curriculum evaluation instruments Develop student evaluation instruments Create data collection methods Analyze data, write reports and provide feedback Conduct site visits Write NSF annual report	<ul style="list-style-type: none"> ▪ Plan developed November 2005; year 2 adjustments in data collection procedures ▪ Formative evaluation instruments developed and included in staff orientation in December 2005; reviewed in 2006 ▪ Student assessment instruments reviewed May 2006: 62 item knowledge assessment + 50 item attitude instruments refined for Fall 2006 baseline assessment ▪ Data elements table communicated to IRCC Provost's office; data, products reviewed in interactive meeting May and Nov. 2006 ▪ Site visit conducted in November 2006 ▪ Annual report submitted March 2007; evaluators report submitted March 2007
Program dissemination	Presentations at national conferences Project information on CALC website	<ul style="list-style-type: none"> ▪ Second year: Developed Web-based products and tools for internal use at this time; transitioning to public and external partner access in 2007

GOAL #4: Provide relevant professional development for educators		
ITEM	DESCRIPTION	EVALUATION
Curriculum training	40 hours of training/development opportunity on the creation of school-wide projects, integrated curriculum, contextual teaching, subject specific topics	<ul style="list-style-type: none"> ▪ The staff participated in 10 days of professional development in July 24 -August 4, 2006 + 3 days in December 2005, with follow-up work in the spring of 2006. Topics included model school conference, technology, safe schools and student relationships, career assessment, internships, Web-CT, learning styles, project-based learning, ESE accommodations, CRISS strategies, differentiated learning, FCAT, student organization, block instruction, teaching strategies, and ethics/classroom management. ▪ Staff meet bi-weekly to plan & evaluate learning modules for curriculum; workshops on Modules and Web CT (November)
Work-based learning training	40 hours of training in job shadowing, internship, other work-based instruction	
In-service training	Create a bi-monthly workshops on relevant topics	<ul style="list-style-type: none"> ▪ Additional professional development experiences include weekly work sessions on curriculum development; Character Counts (Aug.); Online Library Databases (November 2006); St Lucie Estuary and Indian River Lagoon conference (September 2006); Business Partner breakfast/Learning Symposium (September 2006) ▪ Model Schools Conference June 2006 ▪ Professional Enhancement Day ▪ Tech Prep Conference ▪ Additional professional activities outlined in Fastlane Annual Report

Conclusions and Recommendations

Based on available documentation for Year 2, the external evaluator has addressed each of the formative evaluation questions below:

1. Were planned **products** developed on time and delivered/utilized for their intended purpose?
 - Additional integrated curriculum products were developed and have been utilized with students beginning fall 2006. Five (4) learning modules built around the wetlands/environment/Everglades theme have published on the evergladesproject.org website; these products serve as models for continued development of interdisciplinary lessons
 - E-mentoring manual published in fall 2006 for initial application in spring
 - All products published to internal Website
2. Were all products subjected to **technical and/or quality review**, and indicated revisions incorporated prior to being fully utilized?
 - Review rubrics were utilized by the faculty development team and were used to guide initial development.
 - Products including learning modules and publications, Website, training manuals were reviewed by IRCC administration and faculty
3. Did planned **events**, including **professional development**, occur on time? What was the level and nature of participation in the events/training?
 - Professional development took place as scheduled during the summer 2006 and was attended by all CALC faculty and staff
 - Faculty/staff attended the NSF conference in Washington, DC in November 2006
 - PI attended NSF-ATE conference in Washington, DC in fall 2006
 - Bi-weekly everglades faculty meetings were conducted for planning and sharing/critique of developed products
4. Did training/ workshops achieve their **intended outcomes**? Did participants rate workshops/ events as being **relevant** and of **high quality**?
 - Professional development sessions included a debriefing discussion to assess quality, relevance and implementation capacity. An evaluation survey ranked the summer workshops as effective.
 - Numerous opportunities for professional development were provided and are listed at <http://calceverglades.pbwiki.com/Professional-Development?doneSave=1>
5. Were other project **milestones** completed on time and consistent with specifications?
 - Milestones for 2006-2007 were achieved on time and per specification (See previous table: Formative Findings by Goal Area)

6. Were **grant funds** expended according to schedule and consistent with plans? Were additional or **supplemental funds** acquired as planned and were these funds applied to the project according to plan?
 - Approx. 90% of grant funds had been expended at the writing of this report (March 2007). Funds utilized for professional development, salaries, instructional materials, software, required conferences and science instructional equipment.
7. Were key **project personnel** identified and did their participation in the project conform to plan?
 - Craig Sprafka was hired as Project Director in October 2006. Craig's coordinating role in the project was immediately obvious in communications with the evaluator. Planning, scheduling, and product development have become more transparent in 06-07, and the publishing of various products and planning tools on the Web has been a big asset to internal staff as well as external observers.
 - Pat Della Penta continues as the Co-PI
8. Were **external partners** contacted and was their participation realized at the level specified in the plan?
 - Beth Mazzouccolo has created a database of business partners for e-mentoring, job shadowing and internship programs
 - Seniors are currently giving their presentations re: their internships
 - Fall of 2006 the E-mentorship program was introduced and detailed during a business partner breakfast. Summer 2007 the CALC will hold a one-day workshop for E-mentoring with our business partners, run by Beth Mazzouccolo
 - Students and business partners Will be interviewed regarding their participation and satisfaction of the plan, and make adjustments where necessary
 - External partners such as South Florida Water Management District, Oxbow, Florida Fish and Wildlife, Martin County Chamber of commerce, University of Florida and others have become important partners in the CAPSTONE Program
9. Were **key components** of the project implemented at the level intended?
 - Many key components of the CALC program have been initiated or are being expanded due to the Capstone project (see previous table). A review of project Web pages presents an integrated system of high quality components that are receiving a positive reception from students and business partners. **E-mentoring** has expanded beyond the current level of use in the medical careers program, with students participating in conjunction with their e-portfolio projects. More will be implemented in May 2007. **Field-based projects/lessons** (e.g., environmental sampling/water testing) have been developed in learning modules.
10. What was the level of **participation of students** in all aspects of the project?
 - 100% of juniors and seniors are involved in job shadowing or internship programs
 - Students will be involved in Summer of 2006 at our Boot-Camp for technology, implementing plans from our curriculum creation
 - The introduction of the interdisciplinary curriculum targets students in all CALC classes and grade levels – every student will be introduced to key elements of the grant during their matriculation at the CALC

11. How did **students** and **teachers** rate the **relevance, quality** and **effectiveness** of project experiences and outcomes? What was the **level of engagement** of students and teachers in key project activities?
- Both faculty and staff were active in the efforts associated with the grant and express overall satisfaction with the progress
 - An affective student survey (pre and post) will be completed in April or May of 2007 and will be included in the Year 3 report
 - A locally developed Everglades knowledge assessment was administered in August 2006, with an interim administration in December 2006. Interim results indicate a slight gain in average score (results of an end-of-year administration will be presented in the Year 3 report.
 - Results of the Florida Comprehensive Assessment Test of approximately 50 juniors at CALC indicate that 55% of the students scored at or above Level 3 (“acceptable”) in 2006; this score is higher than the other large high schools scoring at 53% and 47%, and much higher than the state average of 35%. Scores for 2007 will be included in the Year 3 report.
 - The level of student engagement has increased during the 2006-2007 school year, indicating that the Capstone project, once fully developed, will add significant value to the overall student experience at CALC

Recommendations

1. Continue to publish instructional as well as administrative and communication documents on one or more of the **project Websites**. The various media published to date are an excellent method of communicating the project wares to internal as well as external stakeholders, and serves as an effective medium for insuring **continuous updating** as well as **quality assurance**. This product will become the primary vehicle for **dissemination and sharing** the project with others once the project is fully developed. (Kudos to Craig and the staff in creating this medium!)
2. Continue to develop components of the **e-mentoring** program to insure that this aspect of business partner support is included in the project.
3. Continue to update and revise the **Goals and Deliverables** table/work plan which guided development of deliverables in 06-07, including assigning responsibility, to insure that specific plans are in place for the 2007-2008 school year. This process should be interactive, involving the entire faculty team.
4. Review the instructional role of various **field and laboratory experiences** as planned or currently described in the learning modules. Insure that these activities are implemented to the extent needed for learning impact, including the involvement of **external partners** and the coordination of **science supplies and equipment** required for the student activities.

5. Revisit the goals and plans for **external partners** (number and type of partners), including their involvement in each component of the project. Agree on measurable milestones for the 2007-2008 school year.
6. Continue to **document** all project activities, events and products by publishing appropriate material on the project Websites.
7. Continue to **evaluate each activity**, including professional development, by utilizing a standard instrument or by creating a simple survey for (1) students, (2) faculty, (3) external partners and (4) other external stakeholders (parents, visitors). Summarize and utilize this information in planning.
 - Administer the **(1)** knowledge instrument as well as the **(2)** attitude surveys as close as practical to the end of the school year (2007), providing detailed – student-by-student results to the evaluator.
8. Continue to keep the **evaluator apprised** of project events and products.