I. Executive Summary

In April of 2012 I spoke with Director of the OASIS grant director, Alma Adamez, about possible ways I might support faculty in implementation of program goals. Some of the possibilities discussed were:

- Curriculum design: working directly with instructors
- Formative assessment
- Support for Zogotech data collection
- Working with developmental case managers
- Helping with a professional development scope and sequence

Two conference calls were set up on June 7 and June 21 with faculty and staff to determine what specific tasks would be undertaken during a working day on June 29th. After the June 7 meeting I wrote up a draft agenda for a working day based on stated needs expressed by faculty and staff. During the second phone conference the agenda for the day was finalized and it was agreed that I would facilitate faculty and staff working sessions in 3 areas. These were:

- Developing Project OASIS learning outcomes
- Brainstorming assignments and learning activities that would fit those outcomes
- Deciding on a professional development scope and sequence for the following year

During the working day faculty developed language for five broad outcomes that would provide the foundation for all project OASIS classes. All faculty members identified assignments or learning activities that would fit with those outcomes.
Faculty began to brainstorm the kind of professional development they felt would help further program goals for increasing student success. A scope and sequence was not completed. The group decided to cancel an evening meeting in San Antonio and a conference call was set to discuss issues of the Every Other Weekend College, data collection and formative data analysis, setting up Zogotech to collect meaningful data, integrating services, and funding for continued professional development. In the bulk of this report that follows I discuss what was accomplished in greater detail and finish with recommendations for the direction of further work to support project OASIS in the curriculum re-design. This will support more meaningful implementation in the classrooms and lead to greater student success.

II. Developing Outcomes

In a report submitted to CBC on June 5th by an external consultant, Dr. Malcolm S. Hill, a recommendation was made to integrate “5 essential steps as part of the learning design process” (pg. 7). The first of those 5 was developing learning outcomes. During the morning session of the 29th outcomes development generally was discussed, then faculty brainstormed what outcomes should be at the core of curriculum re-design, then broke into small groups to develop draft language for each outcome. Faculty identified 5 core outcomes and then developed draft language for each one. As facilitator I also recommended that a 6th outcome, “assessment” ought to be a core outcomes in itself. The outcomes were:

1. Active, engaged Learning
2. Critical thinking and scientific awareness
3. Information technology
4. Collaborative teaching and learning
5. Integrated services
6. Assessment

After discussing and coming up with this list the small groups then developed initial draft language for core outcomes 1 through 5. I have written draft language for number 6, assessment, below.

1. **Active, Engaged Learning.** Faculty at OASIS will incorporate active, engaged learning in the classrooms and the labs. Students supported by faculty and learning activities, will learn to use measurement devices to solve problems and derive basic scientific principles by generating and evaluating measured data.

2. **Collaborative Teaching and Learning.** Students will work together to utilize team-based learning, group projects, and study groups to master course material.

3. **Critical Thinking and Scientific Awareness.** Students will utilize the scientific method in order to understand how science applies to their everyday lives. Students will take these skills and apply them critically to problems they encounter outside the classroom. This could include labs, field-based, and community research. Students will demonstrate understanding as they synergize and integrate earlier knowledge with later knowledge and apply it to real life situations.

4. **Technology.** Students will use various forms of technology to research scientific topics and complete course goals. Students will utilize technology to support basic research, as a way to evaluate sources, list and discuss a topic in an organized manner, demonstrate complex thinking and interpretation where appropriate, and demonstrate what they have learned about a topic.

5. **Integrated Services.** Students will utilize various student support services in order to successfully further their life and school goals. This will include case managers who engage students in intrusive intervention, science learning skills specialists that will provide tutoring, study skills, and general academic support.

6. **Assessment.** The OASIS faculty and staff will build a “culture of evidence” based on comprehensive formative and summative assessment of student progress with respect to the core learning outcomes. This will include systematic collection and analysis of student work, collection an analysis of institutional retention and completion data for OASIS redesigned courses, and integrated services data using the Zogotech system.

The development of core outcome areas and language to describe each area is a very important step in setting the stage for successful course re-design for the OASIS project and faculty should be praised for doing this difficult initial work. In other
projects that I have worked on it has usually taken a year or more for a group of faculty to develop this kind of language. An important benefit of this faculty-driven work is that it creates buy-in and a common shared vision of the work to come. These outcomes will help faculty focus the work of curriculum redesign, pilot implementation in the classroom, and the collection and assessment of formative data.

III. Assignment Development

The second piece of work undertaken by the group was to begin brainstorming assignment/learning activity/project examples that could be built into existing OASIS science courses where students would be working towards one or more of the OASIS outcomes. As a group faculty were at different stages in this process. Some already had learning activities that they did already where the outcomes were embedded, some had field trips, and some faculty were brainstorming for the first time for courses they would be teaching the following year. What was clear from the discussion and the examples that faculty gave was that everyone in the room could come up with assignments, projects, and learning activities that met several, if not all, of the outcomes. Below I list the 9 examples given by faculty teaching in the OASIS program.

Assignment Examples

Terri – Course: Intro to A&P
Assignment: Student group presentations where they pick a disease, disorder, or syndrome to present to the class.
Outcomes: Information Technology, Collaborative Learning, Integrated Services, Active Learning

Matt – Course: Intro to Biology
Assignment: Fake Crime Scene. Use the scientific method to assess what
Happened in a group research project
Outcomes: Active Learning, Engaged Learning

Larissa – Course: Intro to Bio
Assignment: A Project to analyze the effects of wind turbines on bats, birds, etc.
Outcomes: Critical Thinking, Scientific Method

Richard – Course: Micro Bio
Assignment: Unknown Identification project. Go through methodology to identify unknown bacterium
Outcomes: Scientific Method

Mark - Course: Nutrition
Assignment: Case study teams study the patient. Take on roles for patient assessment, nutritionist, collect life-style info, then assess and recommend – write up recommendations
Outcomes: Engaged Learning, Collaborative Learning, Critical Thinking

Danny – Intro to Chemistry
Assignment: Simulated Case Study testing for contamination, work in teams, write up a group report.
Outcomes: Scientific Method, Critical thinking, Engaged Learning

Ronica – A & P
Assignment: Student groups problem solve a patient. Patient comes in sick, set of symptoms, figure out the disease, repercussions, how to treat.
Outcomes: Scientific Awareness, Critical Thinking

Tammy – Bio Lab
Assignment: Group Project. A Plant and two animals. How much Co2 is produced. Aerobic and anaerobic pathways.
Outcomes: Integrated Services, Critical Thinking

Dan – Course?
Assignment: Research a STEM Career or major interest, degree program Requirements, companies that hire, future outlook, shadow someone in the Field.
Outcomes: Integrated Services, Active learning

Most of these assignments have qualities that should help increase student engagement, learning, and retention. They ask students to learn and engage actively with real world problems, they center learning in groups creating a student-centered learning environment, they ask students to work towards demonstration
of complex thinking, and they have student engage in public performance of learning that has taken place. All of these performances can be assessed using the core outcomes of the OASIS program. This is a very good start and a good goal for a year one pilot. However the next step is to move from pilot implementation of 1 or 2 assignments to changing, as one faculty member put it, “the whole course top to bottom.” Changing the whole course top to bottom is discussed in more detail in the next section and in the specific recommendations I make at the end of this report.

IV. Professional Development Scope and Sequence

Trying to complete these three areas of work in one day was an extremely ambitious undertaking. However, it was largely possible because of the size of the working group and because much of the work and thinking had already been done by many of the participating faculty and staff. While we were able to make a list of professional development activities that faculty wanted we were not able to create a scope (what is the beginning and ending point for professional development?) or a sequence (in what logical order should these take place so that later learning builds on earlier learning?). While we did not have an opportunity to discuss a scope and sequence as a group I would like to suggest that the comment about “changing the whole course top to bottom” gives us direction in determining both a scope and sequence. The beginning of professional development could grow out of the June 29th workshop, beginning with 1-3 assignments, projects, learning activities that will be built into the existing course structure. The endpoint or goal of the coming years professional development should be changing the whole course top to bottom for fall of 2013. With that possible goal in mind I want to list all professional
development requested by participants on June 29th and then offer a possible sequential list of PD activities for the year. Please take this in the spirit it is offered – a suggestion only. Faculty and staff should feel free to take this and re-work it so that it is useful for the OASIS project.

Here is the list of professional development activities that faculty listed at the end of day on May 29th.

- Peer observations
- Group sessions for people to work together on course re-design and sharing of current practices
- Workshops for course designers to get together with instructors
- Working from changing an assignment or 2 to changing the whole course top to bottom.
- Assessment and redesign (two levels). Collection and analysis of data for formative evaluation and grant evaluation.
- Website for courses with examples of assignments & syllabi
- Hybrid learning
- Learning theory applied to OASIS needs

Based on the list above important professional development work could be done by making time for faculty to work together and no one need be brought in from outside. A timeline for professional development for the following year is suggested below and would include one meeting per month of the teaching/staff OASIS group.

1-Year Sequenced Professional Development

- Sept. - Group sessions for people to work together on course re-design and sharing of current practices.
- Oct. - Group sessions for people to work together on course re-design and sharing of current practices
- Nov. – Peer observations
- Semester break – bring someone in to help design a website, work on hybrid learning, or present on learning theory applied to OASIS needs
- Feb. - Workshops for course designers to get together with instructors
- Mar. – Peer observations
• Apr/May. – Two day PD facilitated by Dr. Whitman. Day 1: Working from changing an assignment or 2 to changing the whole course top to bottom. Day 2: Assessment and redesign (two levels). Collection and analysis of data for formative evaluation and grant evaluation.

The professional development plan suggested above would give faculty time to work together creating assignments, engage in peer observation, and learn from one another during the early re-design and implementation phase. It is also an achievable plan requiring a 2-3 hour meeting once per month and/or peer observation time commitments. Depending on how the course redesign is going appropriate professional development could be brought in between fall and spring semesters. Then during spring faculty could engage in more work together and peer observation of pilot classes and learning activities. At the end of the semester OASIS faculty would be ready to spend a whole day working on re-designing the entire course. A second day would focus on bringing together all quantitative and qualitative data to discuss analysis, formative evaluation, and grant evaluation (**this date would be tied to required grant reporting date).

V. Summary Comments and Recommendations

Considering that there was only one day for faculty to work together on May 29th a very good foundation was created for continued OASIS course re-design and implementation for the following academic year. A big thank you needs to go to the faculty who worked very hard during the two phone calls and on the day that we met. Another thank you should go to Dr. Malcolm Hill who provided a wealth of insight that helped make the work of the day focused and relevant to the needs of the OASIS faculty. Based on the discussion above and in keeping with Dr. Hill’s
suggestions there are some very clear recommendations that I would make for the
following year, much of which will be obvious to someone who has read this report.

1. Most professional development for the following academic year should
provide faculty with opportunities to work together either through
assignment design or peer observation. This time should be supported
through stipends or some other appropriate form of remuneration through
the OASIS grant.

2. The goal of professional development, assignment design, and classroom
implementation in the coming academic year should have as its end goal
“redesigning the whole course from the bottom up.” A professional
development day should specifically address this in late spring so that faculty
can do that redesign over the summer and be ready to teach in fall of 2013.

3. Another professional development day should address data collection for
formative evaluation and grant evaluation. At a minimum the following data
needs to be collected and analyzed to support formative and grant evaluation
efforts:
  a. Institutional data on retention, completion, and persistence for
     redesigned courses
  b. Integrated services contact logs (done through Zogotech?)
  c. Course syllabi and assignments
  d. Examples (sampled) of student work
  e. A survey on student engagement (like CCSSE)

4. Related to 3b above, a plan for case managers and science skills specialists
that integrates their work with newly designed courses should be
implemented (this may have been done already. If so, ignore this rec!). A
data log for contact time and contact type should be developed so that
evidence of this aspect of the OASIS project can be collected and analyzed.

Respectfully submitted,

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