

Young Webmaster's Program- A Successful Academic Bridge Program for At-Risk students

Young Webmasters Program

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Overview

[Young Webmasters 2001](#), a.k.a. YW2001 and [Young Webmasters 2002](#), a.k.a. YW2002 programs were initially designed to prepare students with basic knowledge of web design and the inner workings of the World Wide Web. In the program's second year 2002, we have learned that there is no substitute for the value -added academic features of the program including geometry, algebra, physics, health science, social studies and chess. At its onset the YW 2002 program ran for four weeks in July and served 80 students at four area central city middle school locations. Each program week provided instruction from Tuesday to Friday, 9:00 AM to 3 PM. Mondays were used for one student field trip and three weekly staff meetings. The last Friday of the program featured an all-school celebration and graduation ceremony.

Ninety percent of the students were from middle schools supported by the Milwaukee Parental Choice Program and the Institute for the [Transformation of Learning](#) at [Marquette University](#). The remaining students represented middle and high schools from around the city.

The YW2002 program employed 12 instructors with diverse educational backgrounds. As an example, both math instructors were from the Milwaukee Public School system while the chess instructor was a teaching assistant from a private school. One of the HTML instructors was a college student majoring in IT, while the roving instructor for HTML has formal training experience at an area vocational training school for adults. The common thread of excellence that all of the instructors represented;; it was their commitment to provide a holistic approach toward ensuring the well being of the YW 2002 students. The critical element of success was that the teachers were empowered to use their 4-week experience as a teaching lab.

All program-based academic goals were reached. They included:

- 75% of students at each site developed a website for posting on the Web
- 90% of all students participating in the algebra and geometry classes presented their work to peers. With geometry, 90% of all students were to complete a geometric model.
- 90% of the students participating in the physiology and anatomy component of the program would either complete or assist in an animal dissection experiment.
- All students who presented with a reading readiness deficit were, at minimum, identified for assistance in their home school. Most of these students received assistance in a pull out support model at the host schools.

Program Evolution

The original delivery plan for YW2001 was to provide intensive background in HTML to middle school students who participated in the Milwaukee Parental Choice Program (MPCP). However, during the spring of 2001 several studies conducted by area education activists identified dramatic academic deficits in the student population that we planned to serve. I decided to supplement the YW2001 curriculum with instruction in the core academic classes of math and science as well as foreign language. Unfortunately, because of a scarcity of available teaching talent in those areas, one component that could not be integrated into the YW 2001 program was fine arts, including music, art, and theatre.

Program implementation

One of the program challenges for Year 2001 was motivating students to commit to good attendance in the project. In particular, at-risk students at one school had a difficult time staying focused and on task. As a result, 90% of these students at one school dropped out of the program after the second week.

The YW 2002 program faced similar behavior challenges with at-risk students at all four sites. While the program saw far fewer drop outs, teachers did report behavior problems. The level of confidence that students demonstrated in courses had a direct correlation to the level of disruptive behaviors that occurred. Hence, the geometry class, which was a subject foreign to most of the students in attendance, saw poor behavior from several students over the first two weeks. However, the nurturing strengths of the geometry teacher began to overcome the student confidence issues and by the end of the second week, most were on task. It was also interesting to note that several students presented with mild learning disabilities. One student admitted to being a very poor reader and could not follow written instructions on the board. Yet another student presented with problems with using a scissor to cut paper and following a pattern. Still another student could not piece together a puzzle made up of geometric shapes but could draw all of the shapes in the puzzle. All of these students were to receive follow-up letters from the teacher, which was forwarded to their incoming teacher for the fall of 2002.

The influence of reading and writing deficits

An interesting discovery occurred during the HTML and web page training held at each school site. A critical component of website development is writing a complete plan for the website. The composition skills that are required can be very basic but they must flow in a thought easily comprehended model. The program's roving HTML instructor [James Logan](#), a veteran of K-12 HTML training classes and lead instructor for YW 2001, saw significant deficits in writing skills presented at every school by a minimum of 25% of the students at each site. The YW 2002 staff devised a tutoring plan featuring a pull out support model for writing and reading for the two schools that needed the most assistance. Anecdotal accounts from several of the students indicated their relief to have a support mechanism in place to help them with these basic skills. The results of this effort were very positive. One of the students presenting with a reading and writing developmental need flourished with the individual tutoring support and identified this activity as critical for her successful completion of her website. Research from G. Reid Lyon and Jack M. Fletcher's article "[Early Warning System, How to prevent reading disabilities](#)", which appeared in the periodical Education Next, points out the value of intensive reading intervention activity for reading disabled students. The researchers surmise that the quantity of words that a child reads during the intervention is vitally important to building their capacity to become fluent readers.

Teaching Methodologies

In the programs first year 2001, instructors were encourage to use a cross-curricular approach teaching with integration of math, science, Spanish and cooking into the academic bouillabaisse of the program with the common unifying thread as the web page. The creation of cognitive tutors by the instructors provided the

students with a general IEP for learning each subject. The cognitive tutor was a method of teaching a subject that provides a hook for memorization and concept integration for students who have demonstrated prior disinterest in the subject matter. As an example, the math teacher developed simple athletic games for the male students in class to teach statistics. Students lined up to shoot baskets on the basketball court. Each student was assigned to keep a running tally of the number of free throws that each person made. The students were asked to compare the success of each student on the board in a numerical statement of comparison. The concepts of ratios, percentages and statistical analysis became very real for these students. The students were also asked to read the baseball box scores each day to apply their understanding of these concepts.

Project Based Teaching

The cooking class for Young Webmasters 2001 presented further support for the student and instructor survey data identifying the need for more "hands on" or kinesthetic learning experiences in technology for certain male students. Dubbed the "Cajun Conundrum" the cooking class presented the students with a unique setting that featured academic tension created by two real world truths of inner-city life. The first truth was formulated around the cooking and eating experience of some of the population. Students learned how to prepare authentic Cajun food in the kitchen under the watchful eye of the Chef who was also the instructor in the cross-curricular training of math and cooking skills in the kitchen. Following that experience each day, a medical doctor provided the second half of their instruction. The doctor taught the students about the problems associated with Cajun food and specifically the impact it had on blood glucose levels and hypertension. As a food staple of some parts of the community these findings had serious implications for the students. They created healthy recipes for healthy Cajun food and learned that the causative agent in the food was red pepper, which, when stirred into foods and heated actually may raise blood glucose levels and can affect hypertension. The final task for each student was to create a web site or a PowerPoint presentation that described his or her weeklong learning experience at the Cajun Conundrum.

Cost Analysis

The program budget for YW 2002 of \$52,000, supported 80 students, four school sites and 12 teaching staff. Included in the program budget were weekly lunch plans at each site, two field trips for the students, materials for model making and design, and salaries for staff. Estimated staff costs were 58% of the total budget and meals for the program represented approximately 12% of the budget.

With estimated staff costs factored out of the total program expenses, the weekly cost per student for the program's duration was approximately \$85 per student. This very low cost for participation in an academic summer program represents an excellent value for the students and the schools participating. The per student cost for YW 2002 is lower than the YW 2001 per student costs of \$125 per student because the 2002 program did not need to purchase computer hardware for the schools.

Conclusion

The Young Webmasters 2002 program fulfilled it's stated goal of providing a high quality course in web design for middle and high school students while closing the academic gap during the summer months with value added courses in core curriculum subjects. The keys to success for future YW programs are very simple.

- Hire good staff with a commitment to teaching and a track record of success in summer programs or after school programs.
- Identify good program sites that have the requisite facility support staff to keep the workspace clean and in good working order.
- Develop an interesting base of core classes that include the fine arts.

- Start the planning phase early enough to ensure commitments from school sites, students and potential staff.
- Increase the project time to six weeks or have two four-week courses, with a rotation in staff for summer vacation.
- Ensure that funding commitments are in place and that all vendor relationships are solidified three months before planning the program.
- Consider using the Young Webmasters program model as an after school enrichment program that allows teachers to expand their classroom teaching with distance learning, mentoring and other innovative teaching techniques.