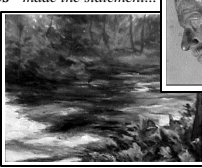


Around 500 B.C. *The Greek Philosopher*

Heracitus *made the statement...*

You
cannot
step
twice
into the
same
river."



picture source: <http://www.fortinet.org/epresocratics/heracitus.htm>
<http://www.public.asu.net/mic/minin>

Everything is changing:

Looking back.

Looking forward



What Next?

In the future we will have more computers.

...wireless networks.

...more efficient power sources.

What will we use computers for?

How will we use computers?

**Today's Computer Labs are
the training ground for
tomorrow's classroom.**

How will we use computers in
MATH?

- We can create math documents.
- We can do math using computers.
- We can model math.
- We can also **TEACH MATH.**



For the past five years
we have been working
to identify those
concepts that can be
taught more effectively
using a computer.



- Activities are planned and made available to everyone in the department.
- Last year our 35 machines were used over 19,000 times for the teaching of mathematics.

**Harnessing the Power
of the Computer for
the Teaching of
Mathematics.**



Manageable
Monitoring



Alternative
Assessment



Tangible
Teaching



Helpful
Higher-Order
Thinking



**Manageable
Monitoring**



At FHS computers assist the classroom teacher by making monitored practice more meaningful. The teacher can be present "electronically" with all students providing them with instant feedback and encouragement and still be free to work individually with those students who need the personal touch.

**Alternative
Assessment**



Computer Activities make it possible for the teacher to see if students have really understood a concept that is foundational to new work. This can be done quickly and efficiently, without the discouragement that often sets in when students are evaluated with graded quizzes.



Tangible Teaching

Computer Activities involve the students with mathematical concepts engaging them with the sense of touch, sight and sound. Students can interact in real time with consequences of changes in equations. They can "see" dynamic relationships that are difficult to understand.



Helpful Higher-Order Thinking

Students at Farragut High School who have a background in mathematics and an interest in learning computer programming work in a class called Software Design to make software that is used to teach mathematics to other students. These students are called upon to use higher order thinking skills in the preparation of their projects.

	Using Software	% correct	Not Using Software	% correct
Angle		88% (W)		87% (S)
Problems				
Logic		90% (S)		68% (W)
Name the Parallels		87% (W)		81% (S)
Purloined Parts		77% (S)		69% (W)

Sallie Ralston
compared two
Geometry

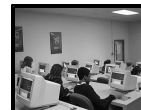
Classes.

S-stronger class
W-weaker class

Classes alternated lab use.

Class using lab did better.

More Research At Farragut High School



Kellie Ivens
administered a
pre and post test
to one geometry
class.

	Before Lab	After Lab
mean	75.7%	92.1%
median	80%	100%
mode	80%	100%
perfect papers	3/28	20/28

The tests were given on review day
before and after 10 minute lab activity

Student Attitude toward Lab



Attitude toward
Computer
Practice from
student survey.

Prefer initial practice	doing problems on computer	doing problems in class
Sallie	50	1
Ralston	(98%)	(2%)
Kellie	48	5
Ivens	(91%)	(9%)
Mary		
Emma	48	4
Bunch	(92%)	(8%)
Totals	146	10

Survey taken in 1999.

Let's take a
look at our
Software we use
to enhance
Mathematical
Instruction.

Leslie Howe
math lab coordinator
Farragut High School



Harnessing the Power of the Computer for the Teaching of Mathematics.



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