Deliberative Construction: Social Influences as a Resource in Software Development

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Culturally Situated Design Tools (CSDTs)
Cornrow Curves CSDT

- Transformation Geometry:
  - Rotation
  - Dilation
  - Translation
  - Iteration

- Cartesian Coordinate System
  - X and Y axes
  - Angles
  - Reflection
How does an awareness of these social issues help guide the software design process?
Outline

- Problems that arise without social influence consideration
  - Productive Tensions
- How to allow users to move from specific to general
- How software architecture allows open-endedness
- Acknowledgments
- References
1\textsuperscript{st} Productive Tension

- Allowing users to choose their own designs
- Or
- Introducing new ideas for users ethical/intellectual development
Too General - Allowing users to choose their own designs
Too Specific – ethical and intellectual development
2nd Productive Tension

- Providing high-end graphics for cultural materials
- Or
- Lowering computational demands on the software
High-End Graphics

Customer Review

7 of 7 people found the following review helpful

★★★★★ Have the people who rated it 5 stars actually played this game?, August 18, 2009

By Nancy

Amazon Verified Purchase (What's this?)

This review is from: Math Blaster: Master the Basics (CD-ROM)

Let's assume that like most people browsing these games, you want a game that will help your child either practice his math facts or reinforce/learn math concepts. If this is what you want, then keep on looking because this is not the game for you. If you want a game that has lots of noise and moving around with a very minimal amount of math added in an awkward manner, then this would be the game for you.

As someone who actually wanted a math game for my child to practice math with, this is by far the worst math program for my son. As others have pointed out, you're required to run around and jump from ledge to ledge to catch numbers that will add up to the correct answer. That means that even if you know the correct answer, you spend almost all of your time trying to catch numbers.

There may be lines at some people's houses to play this, but I can guarantee that those kids aren't getting much math practice. Nice idea for a game, abysmal execution.
Lower Computational Demands

“Kids do not like vegetables, they do not like lame school lessons, and they can tell when adults are trying to make them consume one or the other. As one former educator put it, ‘They know that Football Spelling has nothing to do with football and everything to do with spelling. And by and large they don’t want that much to do with it.’”
3rd and 4th Productive Tensions

- 3) Heritage culture identification vs. flexibility of design

- 4) Freedom for developers vs. cohesive system outcomes
Flow From Specific to General

How to Create Braids
Lesson 3: Dilation

In the simulation each plait is the same size. Sometimes we want the plaits to dilate, either grow larger or smaller in each iteration. Let's figure out how dilation works.

Question: Let's say the original plait is 1 inch wide. And let's make this first iteration 50% of the size of the original. How wide is the first iteration plait?

Now you see how iteration works: you dilate the current plait to make the next plait. By dilating each time, you make increasingly smaller copies. The changes accumulate pretty soon we have tiny plaits.

Play with the dilation value in this simulation to get as close as you can to this braid. Write down your answer in your notebook and then continue to the next lesson.
Flow From Specific to General

How to Position Braids

Lesson 3: Starting Angle

The braid in this simulation is going sideways, along the X axis. But the braid in this target image is going straight up. Try changing the starting angle so that your simulated braid is going straight up, like the target image braid. How is this different from the iterative rotation?

Starting Angle
(degree)
-45
Flow From Specific to General
Flow From Specific to General
Flow From Specific to General
Flow From Specific to General
Flow From Specific to General
Open Ended Software Implementation
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References