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In comparing my personal experiences with physical and computational objects, I have noticed that though computational devices have been an integral part of my life, they have functioned rarely as Papert's transitional objects – objects that “act as sources of examples and images for a transition to a more formal realm of abstract symbolic reasoning” (Eisenberg, 2003, pp. 5), objects that also become things “at least a little closer, in the emotional realm, to a favorite toy or stuffed animal” (pp. 5). Rather, I have perceived and treated them more like the black boxes described by Resnick, Berg, and Eisenberg (2000). They are merely non-malleable accessories with which I store and receive information.

Such was my reaction, as I attempted to render my building design for an architecture course on CAD, a very different reaction than had I constructed the model by hand. Physical construction prompts a train of thoughts from reconsideration of spatial proportions to the physics of the structures to building materials, and even to artistic representation of self. Though, it seems reasonable that the same thought processes could occur while working from a computer, it takes the tangible act of putting walls and rooms together -- instead of clicks with a mouse -- to jump-start my mind. Thus in my instance, model building served to promote the goals of design projects as outlined in Resnick (1998) rather than technology. [Naccara: Kalina, have you ever used computer software which allows you to build something on the screen, manipulate and test out what works, and then print the framework of your construction to actually guide your building in the physical sense? I know Tom Snyder puts out some such programs for children. Do you think this type of combination would help bridge the physical and computational worlds?]

In the end, if all goes well, the physical model elicits a maternal response from me: after months of intense physical and mental labor, I am the happy mother of a (hopefully) good model. In my course, the models served much like Thinking Tags (Resnick, 1998) -- each representing the person who built it, and each helping to facilitate conversation between classmates who otherwise rarely spoke to one another. Such emotions and activities seem much harder to bring about had the results simply been on a computer screen. For me “the emotional affordances of screen-based entities” (Eisenberg, 2003, pp. 7) is not enough. “...The limitations in the form [] prove insurmountable” (pp. 7) at times.

In the above example, I feel as though the computer takes the concreteness of the model and turns it into a virtual abstraction. Computers, like physical objects, however, “[have] the ability to make the abstract concrete” (Turkle & Papert, cited in Resnick, 1998). When studying fission and fusion, it is just as easy (if not easier) to see and understand the reactions from a computer model as it is with a marble presentation. Physical and computational objects also serve as tools/means with which to achieve an end -- expressing my thoughts in a Word document records my thoughts as well as pen and paper (though I have a tendency to edit more).

Given my own difficulties obtaining deeper interactions with computational objects, I'm really looking forward to our activity tomorrow!