LittleBits Go LARGE: Investigating Affordances

Equipment

Set of extended littleBits. There are 13 in total, plus the power modules. The bits we now have are: pulse, toggle switch, motor, servo, pressure sensor, light sensor, bargraph LED, sound trigger, std LED, vibration motor, bend sensor, RGB LED and push switch. Two power modules.

Video recorders. Two would be sufficient, plus perhaps a voice recorder, although the video recorders often ave reasonable microphones in them (we could also use external microphones plugged into the recorders)

Set of symbols and objects that can be placed alongside the modules to help in understanding what they are supposed to do. We already have a set of symbols, but it might be a good idea to extend these as much as possible so that we have alternatives. Same for objects that could be placed alongside the modules.

Dough/plasticine and paper and pencils. Might be useful to have paper and pencils so that people can draw their own ideas on how to improve the affordances of the modules. They might prefer to sketch something rather than try to articulate in words.

Anything else?

Method

We need to ensurethat carers/helpers do not 'help'! The investigation must be by the Tower group members only.

Each group consists of 6 members, working together. We'd like them to help each other as much as possible, brainstorm, make suggestions and play with the bits as much as possible. As there are two power modules, we could have two groups of three trying different bits.

Explain that we would like them to try to figure out what each of the bits does. They can do this by experimenting with different triggers to see how they work, by assembling basic circuits using power – trigger - output. We'd like them to tell us if and how we can improve them.

It might help to ask the group to draw their ideas whilst they are undertaking the task, as this might be useful in the analysis later – a recorded history of what they are thinking.

The question to keep in mind throughout is WHY?!

1. We start with a very short demo to explain about littlebits, and to show how to create a simple working circuit using the power module (blue), the push button (pink) and a simple LED (green). **[5 minutes]**

2. Let people in the group try to discover for themselves how each bit works. We may need to ask questions to help them to say which things they can make sense of and which they don't. (This is needed for video evidence) **[About 10 minutes]**

3. We'll place symbols and/or objects alongside any module with which the purpose is not understood. If we have more than one alternative for a module, then try with one first, and if that does not work, then remove it and try the alternative (i.e. don't put alternatives together, as it might be confusing). Again, we'd like to group to say out loud whether they understand the purpose of a module, and just make guesses about what they think it is for. We need to note which symbols/objects worked and which didn't. **[5-10 minutes]**

4. Finally, we can have a brainstorming session for the modules which were not understood. At this stage we can explain to them the purpose of each module and see if they can come up with suggestions for making them more easily understood if we were to take the modules to another group. Draw or model ideas. **[10 minutes]**

What we're looking for/questions

1. Is it clear what a module is supposed to do? If not, then what did you think it was for? [Misunderstandings about what a module is supposed to do could be quite revealing]

2. Did you understand how to put the modules together [i.e. using the arrangement of colours blue-pink-green]?

3. Are there other ways of triggering sounds/light/movement that we didn't have?