Ian Stuart – Rapman

At LTS we have been looking at 3D printing and software and hardware that can allow that to happen.

I'm over in Islay High School with Ian Stuart who has been working with some software and hardware.

Ian, what is it that we are working with at the moment?

The software is Cloud 9 software from Edinburgh Arts School and it is being driven by the Falcon 3D mouse with ... mouse that gives you feedback and that feeds into a 3D printer, the Rapman 3D printer.

In class this morning I saw some of the pupils working with the Falcon 3D mouse and they appeared to be building some sort of jewellery. Can you tell me a bit about what was happening?

It was a skills builder class being shown to compare and contrast different pieces of software. They were asked to design a pendant to be hung around the human neck. Not concentrating the shape the chain would be given to them and the connection would be given to them and they had to design the actual pendant hanging. They were using Google Sketch Up on their own computers and they were going to come up individually and try out the organic feel of the ..... mouse with Cloud9, 3D software.

What kind of feedback were you getting from the pupils? What did they think about interacting with the software using that 3D mouse tool?

I would say there was a bit of a learning curve when it comes to that. Having tried it yourself, I'm sure you realise that it is quite a different feel from a normal mouse – getting the position right, what's actually happening on the screen. Once they get that right, it takes 15-20 minutes, then it becomes quite natural, quite fluid, with a class it can take a bit of time but that's just an ongoing process of development. The feedback you get from the kids once they are used to the mouse is amazing, they love bouncing the mouse of the surface of the material because it gets a feedback of it. They love the way it forms and changes shape and it can be very different from the geometric shapes you get in traditional CAD packages.

For those who are new to this concept, what actually happens is when you build something in 3D we have also got a piece of kit that can produce it print it out. Can you tell us something about that?

We got the Rapman as a flat piece kit and it has taken a long time to build, an awful long time to build and it takes I reckon about 30 hours build time.

You can actually buy it flat-packed or built? *Yes.* Obviously built it is much more expensive?

Much more expensive. I think it is four times more expensive but, it's built and you can get on with using it straightaway, whereas investing the time I tried building it with kids but that became too awkward because you spent too much time supporting them rather than getting on with building it and some of it is very intricate engineering that needs to be handled very carefully.

I think our experience has been that this is a serious consideration for schools who are maybe looking to buy this.

They need to be aware that they need to commit to that. I would say that it would almost be their CPD for a year. Would be that building of it, would be for one teacher and I think that is an issue they need to be aware of in their planning.

The beauty of it is that once it is built in Cloud 9, that can then be printed, that's the idea, it's not paper printing.

It comes out as a 3D printer as a solid object in plastic it is like a hot metal glow gun that's on a trestle that moves about the place so it builds up a layer at a time and then the table drops and the layer continues to develop. It then builds the next layer and you end up with this 3D model. I'm sure we can put a link on to the videos that are on Rapman site.

We'll do that. Now that you are almost there with the building of Rapman and you have started to integrate this into the class, I understand there are some moves to have an interdisciplinary project happening.

Yes, the class we were working with this morning are second year and we are looking at an interdisciplinary project with second year in May/June time with art using all the skills they've learned through first and second year at design and technology and build them into teams and give them a brief to design jewellery and go away and let them do it and use the skills they've learned, they choose how they approach it, they have the access to the 3D printer, use that and then print-off. We have actually discovered that they can cast with this stuff so it doesn't have to be in plastic for the finished project. We actually put it in sand and cast in pewter or some other leads if you want to make jewellery but you can do all sorts of things. If you could afford it you could go for gold.

Goodness! So you could introduce gold panning to the curriculum.

Absolutely!

We'll follow the progress over the coming months and hopefully we can get some more feedback from yourself and the pupils in Islay High School.

Absolutely!

Thanks Ian.