I believe that Maker Culture should be based on the Scientific Inquiry Model and I have NOT seen a reference to it in any of my readings or workshops anywhere. Here's why:

1) Scientific Inquiry provides a structure for independent learning.
2) Scientific Inquiry starts with a hypothesis generated by the experimenting student. This when engagement begins.
3) Scientific Inquiry supports the concept of revision and it is an essential part of the process.
4) Scientific Inquiry supports reflection and it is an essential part of the process.
5) Scientific Inquiry is circular learning, just like maker learning... it's not about a finished product... it's all about the process... because that next hypothesis will be inclusive of prior experiences.
6) Scientific Inquiry is used in most math and science fields of study and/or careers.

There is a teaching/learning structure in place but it looks different... Teacher as mentor!

Take DL5 (a fifth grade student) for instance:
* He had a hypothesis in his head about how to make a robot out of cardboard triangles and limited art supplies.
* He built, modified (available materials and functionality/limitations of materials), and refined his robot creation.
* He reported/reflected to us about his robot.
* He then made support characters for his robot. They were constructed differently.
* He reported/reflected to us about the process and his now developing storyline.

Now if DL5's teacher encouraged him to write down the storyline, you will have voice, fluency, word choice, etc. All those literary elements that teachers try to evoke with dry writing prompts provided by test generators, that are of no interest to the student. With student buy in on their writing a teacher can start to talk about introductions, conclusions, transitions and continuity. Or scale. Ask DL5 how tall his robot is and how tall would the other characters be using the same ratio/scale. Or percentages... what would the weight difference be if steel or iron were used? What would the characters weigh on Mars?

There should be a great deal of teacher guidance along the way that may not be visible. Administrators don't see this part and want data to justify the methodology. It's killing the learning experience. Project based learning should be inclusive of all disciplines. Teachers may not want to individualize all lessons for all students. Many teachers do not know how to facilitate independent learning and they may even be afraid that their students won't pass state assessment tests based on this model. These are real concerns for them.

If Maker Culture looks to be too unstructured, here’s how it translates into Scientific Inquiry:

Dream - Hypothesize
Explore - Research and refine hypothesis
Design - Application of knowledge (prior and new)
Make - Application of knowledge/test and adapt
Connect - Reflect and revise