

Choosing a 3D Printer

3D printing is not a requirement for Engineering³ but many schools want to include this technology and it can certainly enhance student learning. Buyer Beware: 3D printing can come with challenges so here are a few of the critical variables to consider from the end user perspective when choosing a 3D printer.

Are You/Do You Want to be a Technician?

This to me is the bottom line steering question regarding 3D Printer selection. There are multiple companies offering everything from hobby and self-built to professional level models, and each sets different demands on the end user.

If you like tinkering around, making adjustments, adding solar lamps, realigning the head, re-zeroing the bed and gantry... basically spending hours to make parts with variable levels of precision then looking at the hobby level of 3D printers may be an option. Understand, if you go this route you will have issues doing production work (i.e. 30 usable parts a day for students). I can manage one of these level 3D printers, but have no intention of doing so in my classroom. Time is money, and as a classroom teacher I see no value in spending hours trying to make parts on a machine at the hobby level. Yes, you can get a 3D printer for a fairly low INITIAL cost at this level, but the human cost to tweak it and get parts out is disparate.

My recommendation: if this is all you can afford, save your money and don't do 3D printing. Almost all of this level 3D printer found in classrooms just sit on the shelf unused.

Production Level 3D Printers

If you want a plug and play, highly reliable, accurate 3D printer that can output useable parts all day, every day you need to get into this division of devices. 3D printers at this level will have a controlled environment, separate Support and Model materials that make for significantly higher levels of part complexity and ease of post processing (all parts need some type of post processing and with a Support specific component this is so much easier).

Also, the demands on the end user at this level of 3D printer are minimal (turn on the machine, wait for it to heat up, purge the head, load the part, hit Go, set machine to auto shutdown when complete, go home, remove completed parts in the morning before class).

Even at the Production Level

Not all production level 3D printers are appropriate for the classroom. 3D Systems makes great production printers if you have your printer running 24/7. They are not the most user friendly if you only need to run the printer once a week, or for only a few hours at a time.

What teachers need is something they can turn on when they need it, and leave off when they don't. This is why I'm a big fan of the Stratasys 3D printers. They are not without a few nits, but overall the Stratasys 3D printers are user friendly without technician level competencies.