On-Demand Volume 3D Printing for Schools

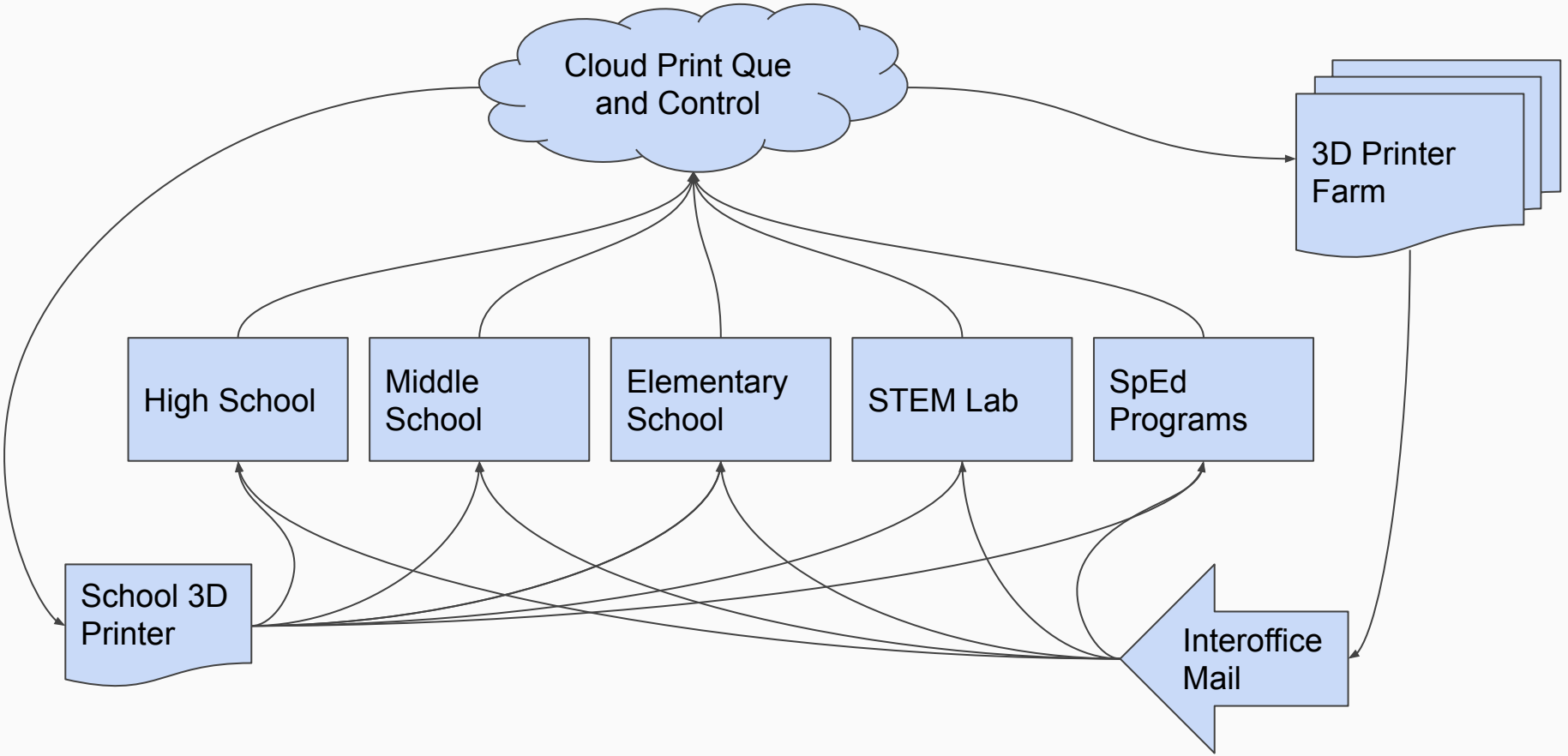
3D Printing is too time consuming to change every day learning in schools

Cloud based, 3D printing farm in districts to make class wide projects and curriculum aids easy

Description

Students and teachers can “order” 3D printed items through a school run website. They can choose color, material, and date needed. Objects are printed at a district run 3D printer farm and then delivered within 3 days through interoffice mail.

This allows users with no printing knowledge to produce 1 or 30 copies of an object in a short amount of time. A classroom of students can test their designs within a week or a teacher can get a class set of a learning aid within a week for immediate use. This turnaround of multiple copies is not possible with a single 3D printer in the classroom.


Cloud Print Que and Control
3D Printer Farm
High School
Middle School
Elementary School
STEM Lab
SpEd Programs
School 3D Printer
Interoffice Mail

Benefits

- Enable class wide printing of student projects (ie. wind turbine blades to test)
- Class sets of lesson objects (ie. molecules, artifact replicas)
- Save money
  - Share class sets of lesson objects
  - Print custom items instead of purchasing expensive commercial objects (ie. anatomy models)
- Save time
  - Only train the people running the printer farm
  - Sell service to neighboring schools
- No printer down time
- Wider adoption of “maker” philosophy in schools
  - Don’t have to be an expert with printers
  - Can find and order class sets

Impact on Education

- Mindset change of how durable physical objects are created and used in education that results in more personalized learning
- Unique learning aids designed for lesson and student needs in mind
- More use of physical objects to support learning that is otherwise impossible
  - Printing of artifacts that do not have replicas available for purchase
- “Engineering” becomes an everyday thing in all classes

Possible Downsides

- Initial cost
- Dedicated IT person. If the farm/software is run by student volunteers overseen by IT this could be a benefit for students
- Teachers/administrators have to adopt a “maker” approach for it to be successful
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Software

Cloud Printing Software

- https://www.3dprinteros.com
- http://octoprint.org/
- https://www.astroprint.com/
- https://makeros.com/
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