Digital embroidery to teach ICT skills

Objectives & rationale

Contribute to ICT education and valorize digital embroidery as subject to be taught in both making and ICT classes.

Digital embroidery:

- allows learning vector drawing, programming, image manipulation, using complex software, installing software and general making skills,
- is a technology that works since the 1980s,
- includes an artistic component and appeals to a "non-technical" audience,
- is more environment-friendly than typical 3D printing and laser cutting projects and does not present any health risk.

System administration

Installing open source software such as Ink/Stitch (inkstitch.org) requires understanding the file system, permissions, managing zip files, etc. and following instructions to the letter.

Sharing & documenting

Embroidery being a very technical field, its practice encourages sharing, peer helping and participation in online communities.

Parameterization

Using advanced commercial software such as Stitch Era (stitchera.com) allows training learners in parameterization, e.g., by examining objects, exploring menus and panels.

Physical constraints

Each fabrication method must consider different constraints. Students will learn that a model on the screen may not "print" as expected. Model design with any making technology has to take into account material parameters.

Digital embroidery

turtlestitch.org is a browser-based educational programming language (based on Snap!) to generate patterns for embroidery machines. It is easy to use, requiring no prior knowledge in programming, yet powerful in creating novel patterns for embroidery.

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