

SCRATCHED

working with teachers to develop design-based learning approaches to the cultivation of computational thinking

Design-Based Learning



designing
creating things,
not just using or
interacting with
things

personalizing
creating things
that are personally
meaningful and
relevant



collaborating
working with
others on creations

reflecting
reviewing and
rethinking one's
creative practices



Scratch (<http://scratch.mit.edu>) is a programming environment that enables young people to create their own interactive games, art, stories, animations, and simulations.



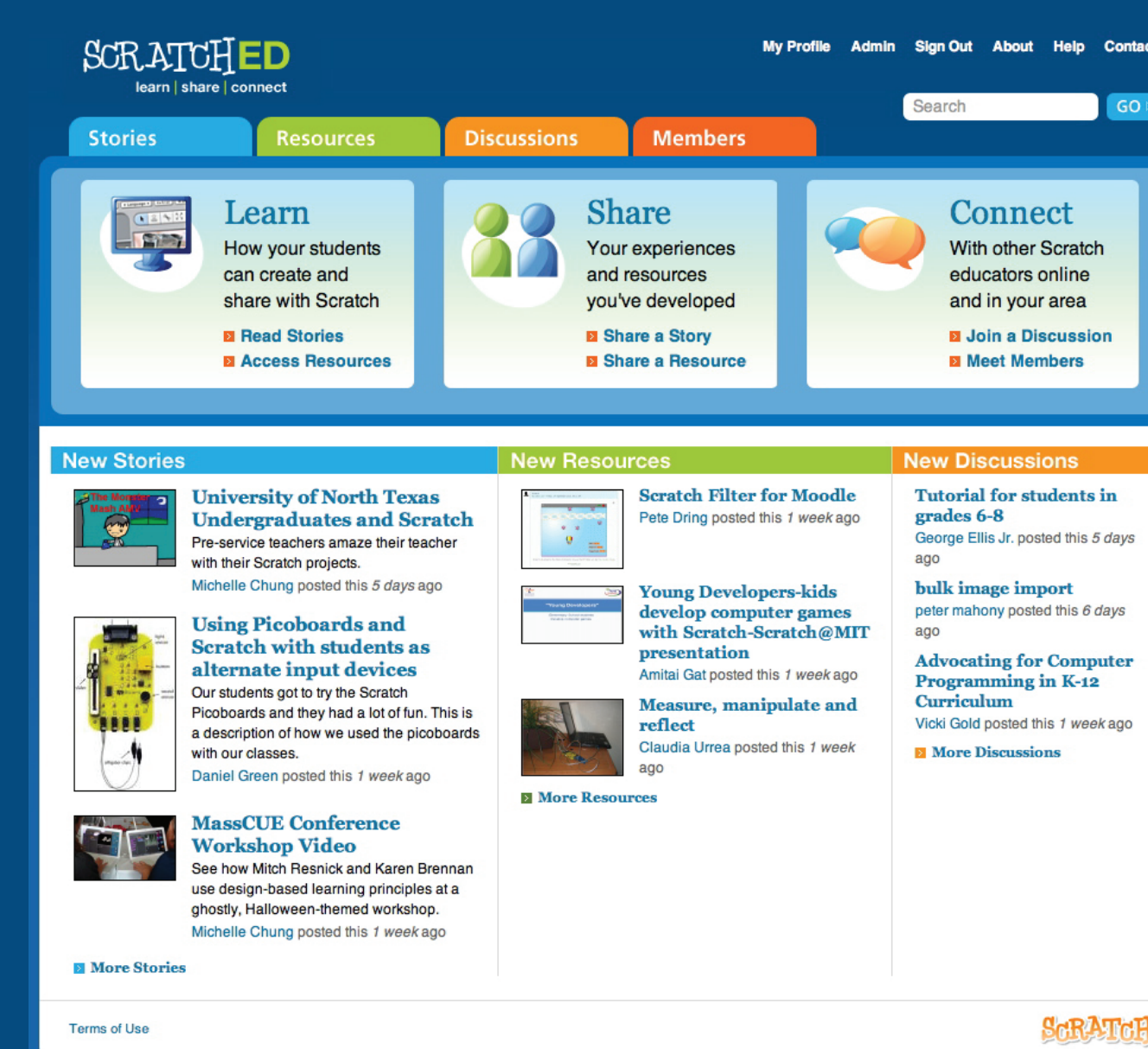
This project is designing, developing, and studying an innovative model of professional development for K-12 teachers who use Scratch to help their students develop as computational thinkers.

Key research question

How does participation in this professional development support educators to: (1) practice design-based approaches to instruction, (2) understand computational thinking (CT), and (3) foster students' learning of CT concepts, practices, and perspectives?

Professional development model

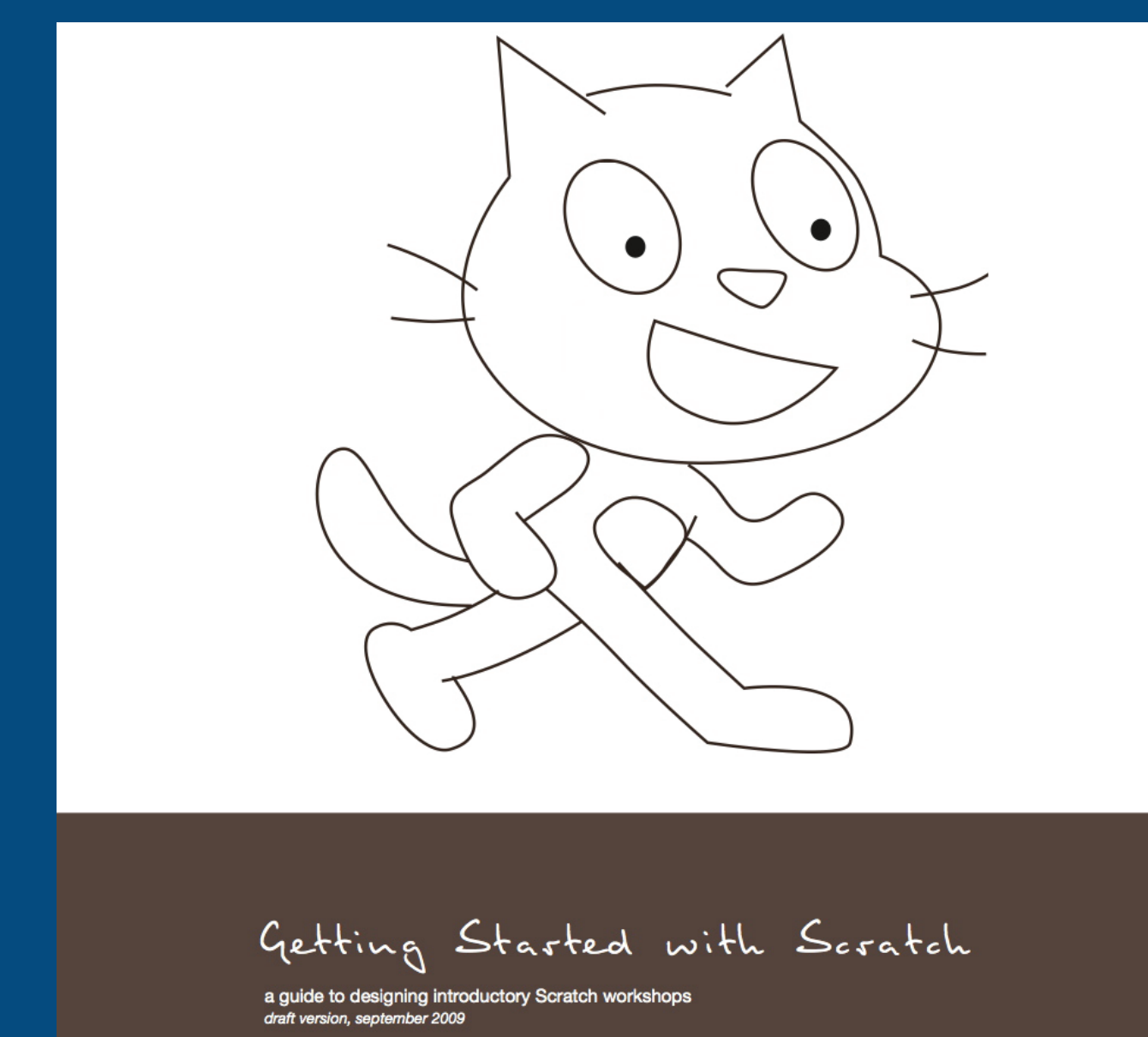
Our model of professional development includes three components:



an online community



workshops & webinars



curriculum guides

Computational Thinking

computational concepts

- sequences
- parallelism
- conditionals
- variables
- loops
- events
- operators
- lists

computational practices

The process of putting computational concepts into action is supported by computational practices, including:

- being incremental/iterative
- testing/debugging
- reusing/remixing
- abstracting/modularizing

computational perspectives

Engaging in computational practices leads to new perspectives, including:

- expressing
seeing computation as an expressive medium
- understanding
seeing and negotiating the sociotechnical realities of the world
- connecting
seeing who and what is made accessible via networks

Project members

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EDC is designing and coordinating the evaluation of the model, using a combination of survey, interview, and artifact analysis methods.

For more information

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