



What ThinkSmith Is, and Why We Built It This Way

The problem we set out to solve

For most students, schoolwork's like this: a teacher delivers information through a lecture, students try to memorise it, and a later test measures how much stuck. This works for some children. For many others — including a great number of homeschool learners — it does not. They arrive at class without having engaged with the material, the lecture covers more than they can absorb, and learning happens to whatever extent it does almost in spite of the structure.

ThinkSmith was built around a different idea: that **children learn most deeply when they are asked to think before they are told**. Faced with a real, open-ended problem before any explanation, a learner has to make a genuine attempt. That attempt — including everything she gets wrong — becomes the foundation that explanation can later build on.

The research this is based on

In 2008–2009, the ThinkSmith framework was tested at Ubon Ratchathani University in Thailand. Over one semester, **1,742 students across 22 courses** were taught using the framework instead of traditional lectures. The framework gave students a weekly cycle: try a challenging problem on their own first, then exchange feedback with three anonymous peers, then work with a small team, and only then attend the instructor's class — now arriving prepared to engage rather than just listen.

For ten of the courses, the same instructor had previously taught the course as a traditional lecture. This let us compare. **Students in the ThinkSmith courses scored, on average, 17.31% higher on their final exams than students in the prior lecture-based offerings of the same courses.** In one course — Calculus III, taught to students who had previously failed — the improvement was 27.62%, with one student failing under ThinkSmith versus eight under the lecture method. The framework also produced large shifts in student attitudes: 93% reported developing stronger critical thinking and problem-solving skills, and 89% found that working with their peers gave them a richer learning experience.

The peer-reviewed pilot study was published in 2009 by Leslie Richards, Dr. Utith Inprasit, and Dr. Hathaikarn Wattanataweekul. It is the empirical foundation of everything we build today.



How ThinkSmith works for your child today

The original framework needed a classroom full of peers and a teacher to lead discussion. Your homeschool child has neither. So today's ThinkSmith uses AI to perform the functions that classmates and an instructor provided in 2009:

- **AI peers** — three different "students" with different reasoning approaches — produce solutions to the same challenge your child faces, sharing their thinking out loud rather than just their answers. Your child reads them, gives each one constructive feedback, and learns from comparing her approach to theirs.
- **AI peer feedback** — the same three peers then offer feedback to your child's own solution, in writing that responds to what she specifically wrote.
- **Ms. Rivera, a learning coach** — available whenever your child asks for help, reading her writing in context and asking questions that push her thinking rather than handing her answers.
- **A portfolio** — at the end of each activity, ThinkSmith produces a written summary of what your child's thinking demonstrated, organised around five qualities: knowledge, creative thinking, critical thinking, communication, and the ability to apply ideas. Levels range from *not yet* to *strong*. You see your child's actual writing, with specific notes on where her thinking is developing.

Parents have a read-only view: you see everything your child has done and how her thinking is progressing, but only your child can write within her own account. This protects what makes the portfolio meaningful — it is genuinely a record of her thinking.

What we promise, and what we don't

The framework works. That was shown clearly in 2009 with real students, real teachers, and real exam results.

The new AI-powered version is built carefully on that foundation, but its own outcomes have not yet been independently studied at the scale of the 2009 work. We are open about this. We chose this design because the underlying methodology had been proven and because today's AI is capable of performing the social functions the framework requires. That is reasonable ground for confidence, but it is not yet proof. **We do not claim that ThinkSmith will produce a 17.31% gain for your child.** What we claim is that the way ThinkSmith works — the active engagement, the peer feedback, the prepared-before-class learning rhythm — comes from a methodology that worked when it was tested.



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