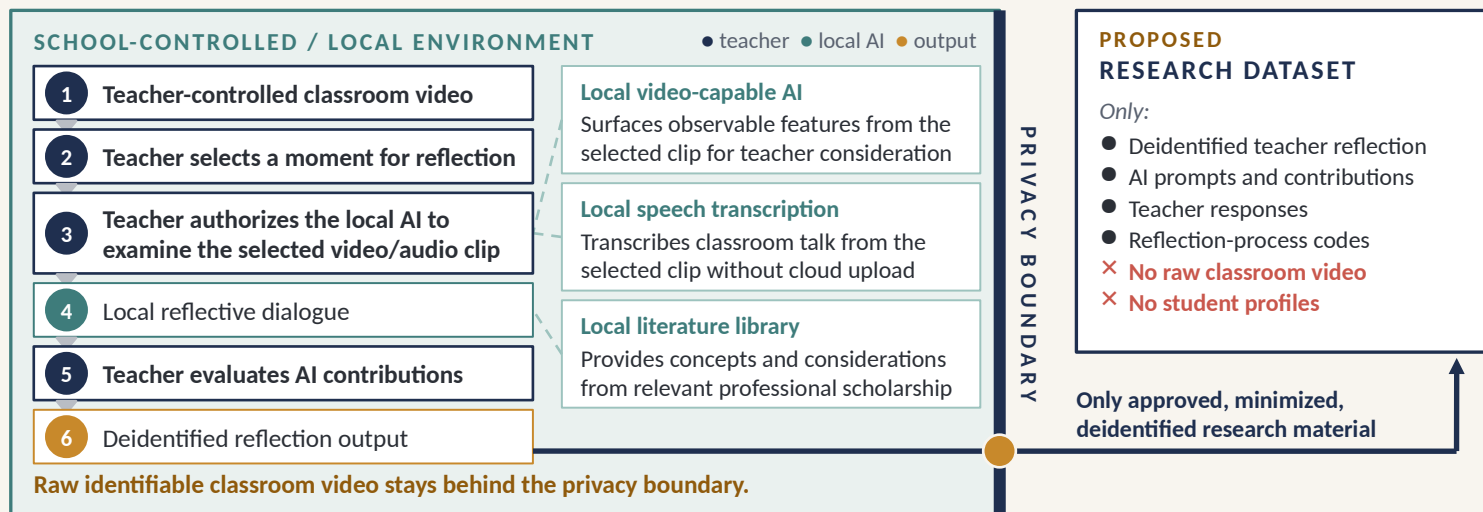


What Could a Local AI Teacher-Reflection System Look Like?

A proposed privacy-conscious architecture for video-supported professional reflection

A teacher could reflect with a multimodal AI that processes classroom video on school-controlled hardware rather than sending identifiable video to an external AI provider.

Local processing is a privacy safeguard, not a substitute for consent, IRB review, or local institutional requirements.



AI expands the field of consideration

AI CONTRIBUTES

ELICIT	"What did you notice, and why did it matter?"
SURFACE	Makes the teacher's implicit reasoning visible
CONTRIBUTE	Surfaces relevant video evidence or an additional consideration grounded in the evidence or supplied scholarship
CHALLENGE	Looks for evidence that may support, complicate, or challenge the emerging interpretation

RETURN AGENCY	The teacher accepts, rejects, qualifies, or revises the interpretation.
----------------------	---

The AI may direct attention to observable features in the supplied video and offer possibilities without deciding what the classroom event means.

A short illustrative exchange

Schematic, pilot-informed, anonymized, and condensed

TEACHER "I didn't want to interrupt the lesson more strongly because most of the class was still engaged."

AI "At that moment, much of the group is still participating while one student's behavior is drawing some peer attention. Were you managing one student's behavior, or also managing the relationship between that behavior and the functioning of the group?"

TEACHER EVALUATES Accept • reject • qualify • revise

AI "Could your smaller redirects also have communicated something to the students who were watching, even if they did not immediately change the focal student's behavior?"

Citations need not appear in every dialogue turn, but source provenance should remain available for teacher review.

Local means more than "the model is installed on the computer."

- No classroom video sent to external AI APIs
- School-controlled hardware
- Encrypted storage
- Restricted user access
- No cloud backup of raw video
- No use of footage to train external models
- Minimal logging
- A defined retention and deletion schedule
- Network egress ideally restricted during processing

Privacy should be enforced technically, not only promised contractually.

Teacher reflection ≠ student surveillance

The system should not:

- ✗ Build persistent student profiles
- ✗ Rank, label, or automatically diagnose students
- ✗ Track children across lessons unless separately justified and approved
- ✗ Treat visible behavior as proof of internal cognitive or emotional states

Instead: the unit of development is the teacher's professional judgment.

Local processing does not automatically remove consent obligations

Whether parent/guardian permission or other authorization is required would be determined through the University of Memphis IRB and the participating school's and local jurisdiction's requirements.

The proposed architecture is intended to minimize disclosure and retention of identifiable student data, not to create a loophole around ethical review.

AI can widen the teacher's field of consideration without taking ownership of the judgment.

Video evidence + teacher knowledge + relevant scholarship → deeper deliberation → teacher retains epistemic responsibility

Conceptual foundations: Schön • Dunne • Biesta • Goodwin • Sherin & van Es • Kounin & Gump • Wegerif • classroom discourse and interaction research