ICEE 2026 · 9th International Conference on Elementary Education · Universitas Pendidikan Indonesia

Learner Identity and Social-Emotional Development in AI-Mediated Elementary Education

A Conceptual Research Agenda

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What the current debate misses

What we usually ask

- Are the grades better?
- Are the answers accurate?
- Is the child copying?

What we rarely ask

- Does the child believe they can think on their own?
- Does the child feel part of the class?
- Does the child believe their own thinking matters?

Why the elementary years matter

7–11

years: the age when children form a stable view of themselves as learners

- Children compare themselves with peers and form beliefs about what they can and cannot do (Harter, 2012).
- Core social-emotional skills develop: self-awareness, self-management, social awareness, relationship skills, responsible decision-making (CASEL).
- A meta-analysis of 213 school programmes found that social-emotional learning improves both these skills and academic performance (Durlak et al., 2011).

These skills grow in relationships

Children learn best with a more experienced person who guides them a little beyond what they can do alone.

Vygotsky (1978), zone of proximal development

? **The open question: what happens when part of this guidance starts to come from a machine?**

A framework of three linked questions

1

Confidence

How does early reliance on AI answers affect children’s confidence in their own reasoning?

2

Relationships

How does AI-mediated interaction change the place of teachers and peers in social-emotional development?

3

Agency

What forms of guided AI use strengthen rather than replace a child’s agency?

1 Confidence in one’s own reasoning

- An answer that arrives before the child tries teaches two things: the answer itself, and that the child’s own attempt is not needed.
- Repeated, this may train children to look for answers outside rather than in their own thinking.

Evidence from older students

~1,000 high-school students (Bastani et al., 2025, PNAS)

- Unrestricted AI: better during practice, worse once access was removed.
- AI giving hints instead of answers: the harm largely disappeared.

Not elementary pupils; the direction of risk, not a direct transfer.

2 The place of teachers and peers

A chatbot always answers. It never gets tired, never gets annoyed and never says “I don’t know”.

1. **Waiting for one’s turn**
2. **Listening to a different view**
3. **Making a mistake in front of others**
4. **Helping someone else**

Learned with people, not with machines. These moments also build belonging, which is linked to motivation and well-being (Baumeister & Leary, 1995; Goodenow, 1993).

3 Think first, check with AI second

1

Think

The child gives their own answer, even a wrong one

2

Check

The child asks the AI

3

Compare

The child sets both answers side by side

4

Discuss

The teacher asks: What differs? Which do you prefer? Why?

The question is not whether to use AI in school, but how.

Implications for teachers and curriculum

1

Show that AI makes mistakes

When a child finds an error in the machine, they learn that their own thinking has value.

2

Keep group work central

AI can be part of the task, but children keep talking to each other.

3

Widen digital literacy

Not only which button to press, but trust in one’s own thinking.

Scope of this paper

What it does

- Connects research on self-concept, social-emotional learning, belonging and digital literacy
- Derives questions that need testing

What it does not do

- Report new data from children
- Draw firm conclusions before developmentally appropriate studies

A research agenda

1

Longitudinal studies

Follow the same children over several years

2

Age-appropriate measures

Adult questionnaires do not work for seven-year-olds

3

Compare modes of use

Ready answers vs. teacher-guided AI vs. learning without AI

4

Involve teachers and parents

They see the child every day

We ask whether the child has learned the lesson.

Let us also ask what the child has learned about themselves.

Thank you

Prof. Dr. Stoyana Natseva · Universidad Azteca · Happy Life Institute for Direct Change Science

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