Global Commission on Human Connections

Measuring Relational Intelligence (RQ) for the AI Era

Perspectives from Educational Paradigms for Human Connections:

From Measurement to Relational Practices

July 20, 2026

Working Group 4 Education Delivery and Operationalisation

Contents

1. Why Education should change in the AI era

- AI can increasingly produce explanations, examples, translations, feedback, and synthetic products.
- This shifts educational value toward **higher-order capabilities**, including **problem framing, critical evaluation of sources, metacognition, learner agency, ethical judgement, and the ability to create knowledge collaboratively.**

The Three Driving Macro-level Forces

1. Policy Re-alignment toward Human-centred AI

UNESCO and OECD (2023) converge on a clear human-centric priority: deployment of generative AI must serve and elevate human agency, rather than automate or replace cognitive tasks

2. Labour Market Demands

Economic indicators (Deming, 2017; WEF, 2025) show massive expansion in occupations where **cognitive proficiency requires intense social cooperation**.
Leadership, active listening, and social influence are the fastest growing demands.

3. Gap in Connection

With 72% of teens using companion AI and 31% finding these interactions more satisfying than physical friends (CSS, 2025), education systems are called to model relational authenticity and counter social isolation (WHO, 2025).

The educational response should be to strengthen the distinctively human dimensions of learning—**judgement, dialogue, responsibility, mutual recognition and connection**.

The evolving role of teachers

In this changing landscape, the role of teachers is evolving from knowledge transmitters to **designers of meaningful learning experiences, coaches and facilitators of learning, orchestrators of human–AI collaboration, and guardians of equity and inclusion**.

- **OECD (2023):** professionally autonomous users and evaluators of AI

  "AI should augment teaching while enhancing the relational and social experience of learning"

- **UNESCO (2023):** guardians of human agency and responsible human–AI interaction

  "Researchers and educators should prioritize human agency and responsible, pedagogically appropriate interaction between humans and AI tools."

- **World Bank (2024):** increasingly central facilitators, mentors and leaders of active learning

  "Teachers' professional autonomy and contextual judgment remain paramount."

AI may support planning, feedback and differentiation. But **pedagogical, ethical and relational responsibility** remains human.

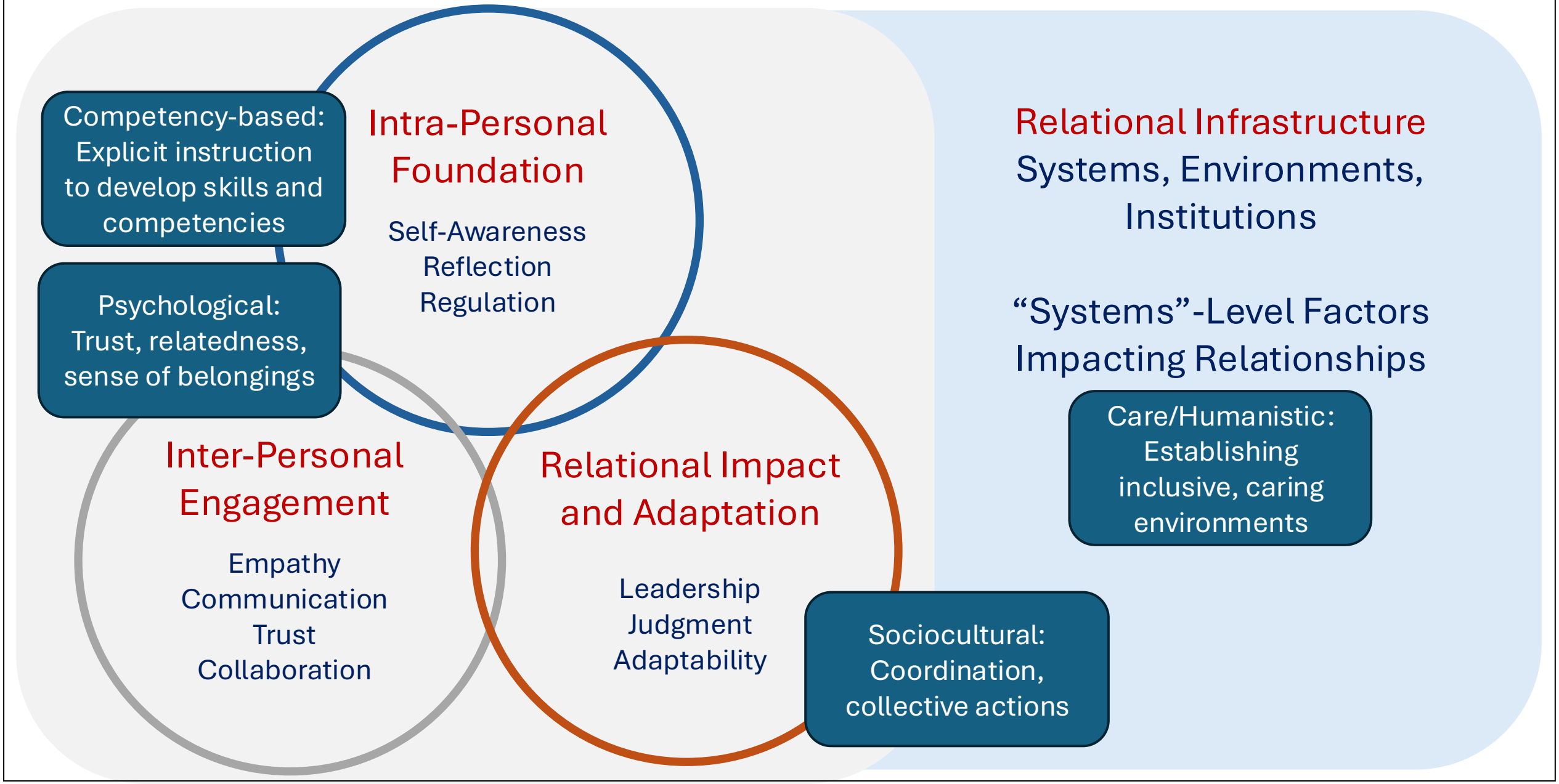
Strategic Instructional Shifts

Strategic Instructional Shifts	Instructional Implications
From information scarcity to **information abundance**	Emphasis shifts directly to curation, verification, validation, comparison, and critical appraisal • Unverified AI output harms learning (Bastani et al., 2025)
From individual tool use to **hybrid collaboration**	Active handoff planning across student, peers, educator, and AI agents with clear accountability records • Structured human-AI teaming works for mastery (Wang et al., 2024)
From static products to **visible learning processes**	Make reasoning visible through dynamic iteration, prompts, revisions, source checks, peer critique and reflection • Constructive and interactive engagement outperform passive completion (Double et al., 2020)
From personalization to **participation**	Balance adaptive support with common inquiry, reciprocal responsibility and peer interdependence • Cooperative structures improve peer relations (Van Ryzin, 2022)

2. Educational Paradigms:
How education defines human connection

Perspectives	Human Connection defined as	Key References
The Humanistic/Care Perspective: **Connection as the end of education**	Recognition, responsiveness and belonging as relational qualities of educational settings	Noddings (2013); Bingham & Sidorkin (2004); Hickey & Riddle (2023)
The Psychological/Developmental Perspective: **Connection as need and bond**	Relatedness as a psychological need; Teacher–student and peer relationships; trust, warmth, conflict, and motivation	Ryan & Deci (2020); Roorda et al (2011)
The Sociocultural Perspective: **Connection as the medium of cognition**	Learning is developed through social interaction, language, and participation/joint meaning-making; Dialogic education	Vygotsky (1978); Alexander (2018); EEF (2017)
The Competency Perspective: **Connection as teachable skill**	Teachable capacities; communication, cooperation, emotional regulation, perspective-taking and conflict management	OECD (2024); Cipriano (2023)

Conceptual Mapping with RQ



3. Instructional Approaches: What the evidence tells us

Classification	Instructional/Pedagogical Approach	Example of Evidence
Established	**Project-based learning (PBL) with cooperative task structures**	• Meta-analysis of 148 studies (17,000 students): Cooperative structures improve both peer relations (ES .42–.56) and achievement (Roseth, 2008) • A RCT of project-based AP courses adds +8–10 pp exam pass rates (Saavedra, 2022) • A RCT of PBL Science learning improves self-reflection and collaboration (Krejcik, 2023)
Established	**Dialogic teaching**	• A RCT of 20-week PD cycle improved attainment by +2 months; trained discourse moves (listening, uptake, reasoned dissent) reflect RQ behaviors (EEF, 2017)
Established	**Teacher-student relationship intervention**	• A RCT of EMR improves teacher-student relationships and students' classroom behavior (Cook et al., 2017)
Promising	Explicit Socio-emotional learning	• Meta-analysis of 424 studies (575,361 students): Better peer relationships, school climate and achievement (Cipriano et al., 2023)
Emerging	Social-Belonging interventions; virtual rehearsal for pre-service teachers	• RCT across 22 institutions (26,911 students): persistence gains, but context-conditional (Walton, 2023) • Simulation for interpersonal competence: positive but small-scale evidence (Theelen, 2019)

Project-based Learning (PBL)

PBL is a comprehensive approach to classroom teaching and learning that is designed to engage students in investigation of authentic problem (Blumenfeld et al., 1991).

- **Five features include a driving question, authentic situated inquiry using disciplinary practices, collaboration, learning technologies/scaffolds, and a tangible public artifact**

Five PBL principles enacted throughout the curriculum (Krajcik et al., 2023)

01

Driving question

A compelling phenomenon or complex problem gives inquiry direction.

02

Explore + explain

Students investigate, model, analyze evidence and construct explanations.

03

Develop artifacts

Products make thinking visible and support scientific literacy.

04

Collaborate

Students exchange ideas, challenge reasoning and build knowledge together.

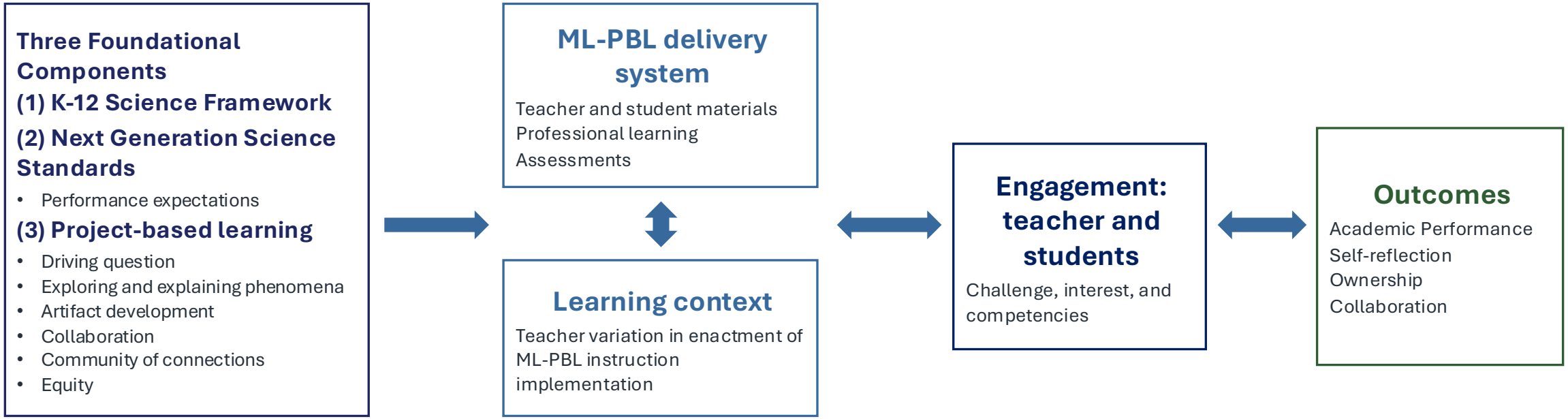
05

Promote equity

Life experience, identity and cultural histories become learning resources.

Case 1: Multi-literacy PBL model in Science Learning

(Logic model by Krajcik et al., 2023)



CLUSTER RCT — 46 MICHIGAN SCHOOLS (INCL. DETROIT), 2,371 STUDENTS

Science achievement
+0.277 SD (g = 0.289);
+0.379 SD among implementing teachers

Self-reflection
+0.544 higher score vs. control

Ownership
+0.434 score

Collaboration
+0.416 score

Equity
Effects consistent across gender, race/ethnicity, SES

4. RQ-ADAPT Model

Convert measurement into classroom action

A ASSESS

Measure RQ

- Administer the RQ measurement instrument;
- Review individual/class/school profile
- Collect contextual information to improve the accuracy of interpretation

→

D DISCUSS

Interpret results

- Interpret data with colleagues, school leaders and students;
- Identify strengths and areas for growth
- Set priority targets related to RQ constructs

→

A ACTIVATE

Select the project/intervention

- Match target to the project/intervention pool
- Choose activities that are integrated into subject teaching and RQ competencies
- Plan for inclusion, equity and feasibility

→

P PRACTICE

Implement

- Embed in subject teaching, PBL and other structured experiences
- Use structured dialogic routines or tools;
- Observe activities and provide feedback

→

T TRACK

Monitor

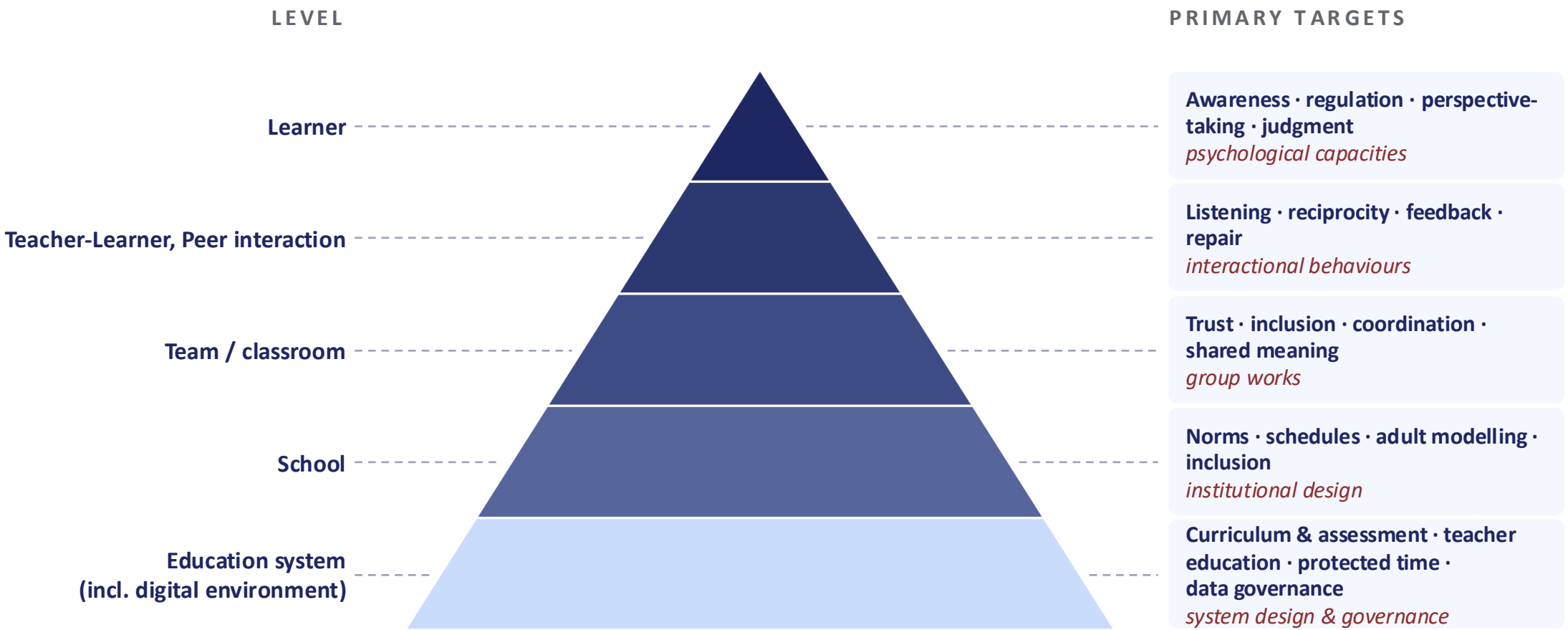
- Re-measure RQ;
- Compare with baseline and targets
- Disaggregate analysis for equity
- Use insights to refine practice and strengthen the system

Measurement has educational value when evidence informs **appropriate action**—and that action leads to **further learning, reassessment, and continuous improvement**.

RQ-ADAPT Model: Questions and Actions

Stage	Core Questions	Required Actions
A-Assess	What relational competencies does this learning task require? What strengths, needs, and barriers are evident?	• Measure students' RQ using validated tools • Analyse task demands alongside RQ profiles • Consider contextual factors (e.g., classroom climate)
D-Discuss	What explains these patterns? Whose perspectives are needed? What should be prioritised?	• Teachers and school leaders interpret data • Examine participation, opportunity gaps, and equity • Agree on one or two priority relational competencies
A-Activate	What does successful relational behaviour look like? How will it be taught?	• Select appropriate pedagogical strategy or intervention • Explicitly model the target competency • Provide examples, decision rules, and guides
P-Practice	Where will students apply the competency in authentic learning?	• Embed RQ into collaborative tasks, PBL, dialogic teaching, inquiry, or human–AI teamwork • Scaffold participation through structured dialogue and peer interaction • Observe and provide formative feedback
T-Track	Did relational behaviours improve? For whom? In which contexts? What should change next?	• Monitor behavioural and learning outcomes • Collect self-, peer-, and teacher feedback • Re-measure RQ and refine instruction and learning settings

5. RQ Education Delivery: Multi-level Approach



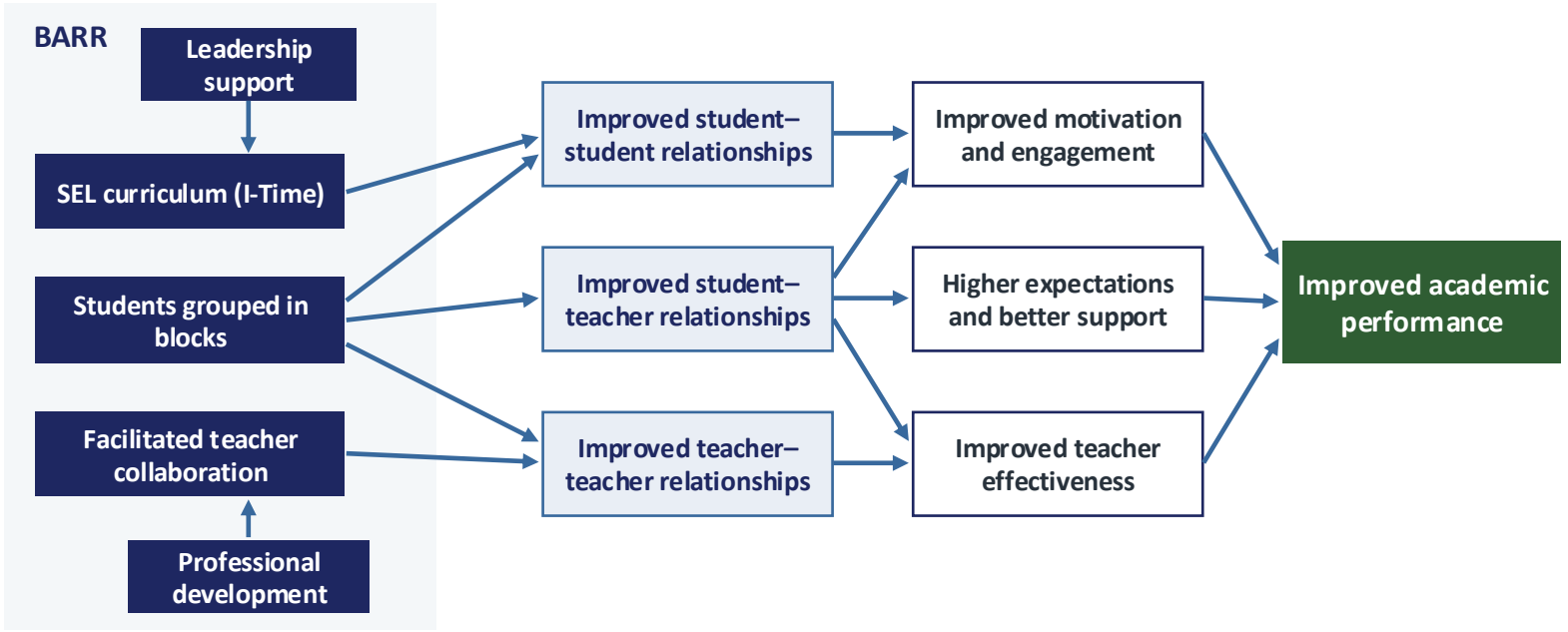
Case 2: Building Assets, Reducing Risks (BARR)

(Logic model by Borman et al., 2021)

BARR helps 9-graders succeed during the high school transition through strong teacher–student relationships

8 Interlocking Strategies

- Whole-student focus
- PD + coaching
- Weekly I-Time lessons
- Shared student-teacher blocks
- Block/team meetings
- Risk Review meetings
- Family engagement
- Administrator engagement



CLUSTER RCT — 11 SCHOOLS (CA, ME, MN, TX, KY), 4,000 STUDENTS

Core Credit earned	NEAP MAP Math	Supportive Relationships	Teacher Expectation and Rigor	
D= 0.19, p < 0.001	D= 0.11, p < 0.01	ES = 0.33, p < 0.001	ES = 0.22, p < 0.01	Engagement, SEL, Belonging, Grit are not significant

RQ Education Delivery: Potential Use of Technology

FOR STUDENTS

1 · MEASURE: RQ Assessment

- Use in-task activities and game- or AR/VR-based platforms to assess students' RQ
- Use assessment to support learning, reflection, and continuous improvement

2 · PRACTICE: AR/VR practice of relational situations

- AR/VR simulations let students practise relational situations safely
- Students identify social cues, make choices, observe consequences, try different approaches
- Include guided reflection and application in real-life projects
- The goal is practice and learning (not technology proficiency)

FOR TEACHERS

1 · INFORM: Data-to-action dashboard

- Provide a set of reliable, useful indicators of students' relational development
- Help teachers move from **Analyze** (understand patterns) → **Alert** (highlight areas needing attention) → **Advise** (suggest teaching strategies)
- Link each indicator to practical classroom actions and resources
- Supports the Assess and Track stages of RQ-ADAPT

2 · ACTION: RQ-Aligned Professional development

- Offer an online lesson-plan library aligned with RQ for PBL
- Provide AI-assisted support to adapt lesson plans, activities, scenarios, and examples to local classroom contexts (e.g., Claude teachers)
- Equip teachers with practical resources to foster students' RQ
- Technology supports teachers' professional judgement only

Questions for Education Delivery and Operationalisation

How should human connection be integrated into education systems and learning environments?

- How could it be included in curriculum, teaching practices, teacher education, assessment, or school culture?
- How can it be integrated without becoming an additional burden for teachers?
- How might implementation differ across educational levels and contexts?

How can educators model and cultivate human connection in teaching practice?

- What teacher behaviours demonstrate human connection?
- How can teachers develop these capacities?
- What support, training, and conditions do teachers need to build meaningful relationships with learners?

Our task is to move from measuring connection to designing the conditions in which human connection can be learned, experienced and sustained.

References

Alexander, R. J. (2018). Developing dialogic teaching: Genesis, process, trial. Research Papers in Education, 33(5), 561–598.

Bastani, H., Bastani, O., Sungu, A., et al. (2025). Generative AI without guardrails can harm learning: Evidence from high school mathematics. PNAS, 122(26).

Bingham, C., & Sidorkin, A. M. (Eds.) (2004). No education without relation. Peter Lang.

Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. Educational psychologist, 26(3-4), 369-398.

Borman, T. H., Bos, H., Park, S. J., & Auchstetter, A. (2021). Impacting 9th grade educational outcomes: Results from a multisite randomized controlled trial of the BARR model. Journal of Research on Educational Effectiveness, 14(4), 812–834.

Cipriano, C., Strambler, M. J., Naples, L. H., et al. (2023). The state of evidence for social and emotional learning: A contemporary meta-analysis. Child Development, 94(5), 1181–1204.

Common Sense Media (2025). Talk, trust, and trade-offs: How and why teens use AI companions. Common Sense Media (2025). Talk, trust, and trade-offs: How and why teens use AI companions. https://www.commonsensemedia.org/research/talk-trust-and-trade-offs-how-and-why-teens-use-ai-companions

Cook, C. R., Coco, S., Zhang, Y., et al. (2018). Cultivating positive teacher–student relationships: Evaluation of the Establish–Maintain–Restore (EMR) method. School Psychology Review, 47(3), 226–243.

Deming, D. J. (2017). The growing importance of social skills in the labor market. Quarterly Journal of Economics, 132(4), 1593–1640.

Double, K. S., McGrane, J. A., & Hopfenbeck, T. N. (2020). The impact of peer assessment on academic performance: A meta-analysis of control group studies. Educational Psychology Review, 32, 481–509.

Education Endowment Foundation (2017). Dialogic Teaching: Evaluation report. https://eric.ed.gov/?id=ED581114

Hickey, A., & Riddle, S. (2022). Relational pedagogy and the role of informality in renegotiating learning and teaching encounters. Pedagogy, Culture & Society, 30(5), 787-799.

Krajcik, J., Schneider, B., Miller, E. A., Chen, I. C., Bradford, L., Baker, Q., ... & Peek-Brown, D. (2023). Assessing the effect of project-based learning on science learning in elementary schools. American Educational Research Journal, 60(1), 70-102.

Noddings, N. (2013). Caring: A relational approach to ethics and moral education (2nd ed.). University of California Press.

OECD (2023). OECD Digital Education Outlook 2023: Towards an effective digital education ecosystem. https://www.oecd.org/en/publications/2023/12/oecd-digital-education-outlook-2023_c827b81a.html

OECD (2024). Social and Emotional Skills for Better Lives: Findings from the OECD Survey on Social and Emotional Skills 2023. https://www.oecd.org/en/publications/social-and-emotional-skills-for-better-lives_35ca7b7c-en.html

Roorda, D. L., Koomen, H. M. Y., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement. Review of Educational Research, 81(4), 493–529.

Roseth, C. J., Johnson, D. W., & Johnson, R. T. (2008). Promoting early adolescents' achievement and peer relationships: The effects of cooperative, competitive, and individualistic goal structures. Psychological Bulletin, 134(2), 223–246.

Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective. Contemporary Educational Psychology, 61, 101860.

Saavedra, A. R., Rapaport, A., et al. (2022). Knowledge in Action efficacy study: Project-based learning raises AP exam performance. Educational Evaluation and Policy Analysis, 44(4), 638-666.

Theelen, H., van den Beemt, A., & den Brok, P. (2019). Classroom simulations in teacher education to support preservice teachers' interpersonal competence: A systematic literature review. Computers & Education, 129, 14–26.

UNESCO - Miao, F., & Holmes, W. (2023). Guidance for generative AI in education and research. UNESCO: Paris. https://www.unesco.org/en/articles/guidance-generative-ai-education-and-research

Van Ryzin, M. J., & Roseth, C. J. (2021). The cascading effects of reducing student stress: Cooperative learning as a means to reduce emotional problems and promote academic engagement. Journal of Early Adolescence, 41(5), 700–724.

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.

Walton, G. M., Murphy, M. C., Logel, C., et al. (2023). Where and with whom does a brief social-belonging intervention promote progress in college? Science, 380(6644), 499–505.

Wang, R. E., Ribeiro, A. T., Robinson, C. D., Loeb, S., & Demszky, D. (2024). Tutor CoPilot: A human-AI approach for scaling real-time expertise. https://arxiv.org/abs/2410.03017

World Bank. (2024). AI Revolution in Higher Education: What you need to know. World Bank: Washington, DC. https://doi.org/10.1596/43298

World Economic Forum. (2025). The Future of Jobs Report 2025 — Skills outlook. https://www.weforum.org/publications/the-future-of-jobs-report-2025/

World Health Organization. (2025). From loneliness to social connection: charting a path to healthier societies. WHO: Geneva. https://www.who.int/publications/i/item/97824011236