NARRATIVE REVIEW WITH ORIGINAL MODEL PROPOSAL
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SEQUENTIAL INSTRUCTIONAL MODELS IN CHILDREN'S AND YOUTH MENTAL HEALTH EDUCATION

From Skinner's operant conditioning (1938) to World Health Organization standards (2025): an analytical narrative review with an intervention model proposal and systemic recommendations

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ABSTRACT

Background	Mental health indicators for children and adolescents in Poland and across Europe are systematically worsening despite a growing number of school-based prevention programmes. This paradox has not previously been analysed through the lens of instructional methodology as an explanatory variable.
Objective	To identify the structural mechanisms of ineffectiveness in dominant prevention programmes and to develop a methodological model enabling systematic strengthening of psychological resilience in educational settings.
Methods	An analytical narrative review of literature spanning five scientific traditions (1841–2025) was conducted, searching PsycINFO, ERIC, PubMed, and Google Scholar. The synthesis was supplemented by genealogical analysis of sequential instructional models and a proposal of an original intervention model. Reporting followed SANRA guidelines.
Results	A structural flaw was identified in dominant prevention programmes: systematic arrest of the intervention at the information-transfer phase (Tell), omitting demonstration (Show), supervised practice (Let), and integration (Try Me). The cognitive mechanism of this flaw was explained through Cognitive Load Theory. The Integrated Sequential Model for Adolescent Mental Health Resilience (ISMAMHR / MSKOP) was proposed as a six-layer methodological system with a foundational Layer 0 assumption, awaiting empirical validation. The SIZF Scale (0–5) was proposed as the first instrument for methodological auditing of prevention programmes based directly on a peer-reviewed instructional principle.
Conclusions	Six systemic recommendations were formulated, including: a requirement for 16-hour teacher supervision as a condition for public funding; exclusion of programmes without a follow-up mechanism; standardisation of the Tell–Show–Let–Try Me terminology as official methodological nomenclature. The original contribution encompasses 13 analytical conclusions, including three falsifiable empirical hypotheses (W6, W11, W13) and an ecosystem convergence hypothesis (W9).
Limitations	Narrative review character; lack of empirical validation of the MSKOP model; preliminary psychometric status of the SIZF Scale; hypothetical character of neurobiological mechanisms.
Keywords	School-based mental health interventions [MeSH: D008603]; Resilience, Psychological [MeSH: D000071050]; Cognitive Load [ERIC Thesaurus]; Instructional Design [ERIC Thesaurus]; Tell–Show–Let–Try Me; MSKOP/ISMAMHR model; school-based mental health prevention.

METHODOLOGICAL NOTE

This paper constitutes an analytical narrative review (narrative review) with elements of genealogical analysis and a proposal of an original intervention model. Sources were selected purposively by relevance to the central thesis, covering five scientific traditions: behavioural, constructivist, cognitivist, clinical, and public health. The databases PsycINFO, ERIC, PubMed, and Google Scholar were searched using keyword combinations: sequential instructional models, tell-show-do, cognitive load theory adolescents, school-based mental health prevention, resilience interventions youth — chronological range 1838–2025. Reporting followed SANRA guidelines [Baethge C, Goldbeck-Wood S, Mertens S. SANRA — a scale for the quality assessment of narrative review articles. Res Integr Peer Rev. 2019;4:5. DOI: 10.1186/s41073-019-0064-8].

Operational definition: A 'school-based mental health prevention programme' is defined as a structured instructional intervention delivered in an educational setting, addressed to pupils and/or staff, targeting mental health competences through at least two instructional sessions, irrespective of funding or implementing body.

Operational definition of effectiveness: Simultaneous satisfaction of all three thresholds: (1) knowledge delta ≥ 20 pp at T1; (2) ≥75% of participants with Show Me score ≥3/5; (3) statistically significant change in learning climate T0→T3M. This definition corresponds to the requirement of verifying all three taxonomic domains (Anderson & Krathwohl, 2001) and is falsifiable by measurement.

1. THE EPIDEMIOLOGICAL PARADOX AS A DIDACTIC PROBLEM

1.1 Point of Departure

"In schools, those under instruction are too customarily looked upon as acquiring knowledge as theoretical spectators, minds which appropriate knowledge by direct energy of intellect [...] Something which is called mind or consciousness is severed from the physical organ of activity." — Dewey, 1916 [1]

This sentence, written more than a century ago, describes with remarkable precision the dominant instructional model of school-based prevention. The paradox that this paper places at the centre of its analysis is: why does an increase in the number of prevention programmes not lead to improved mental wellbeing among young people?

1.2 Definition of Psychological Resilience

This paper applies the term 'psychological resilience' in the sense proposed by Masten [19]: the capacity for positive adaptation in the face of significant adversity or risk, which is both the outcome of instructional intervention and its intermediate result. Luthar, Cicchetti and Becker [20] specify that resilience is not a fixed personality trait but a dynamic process arising from the interaction of individual resources with the environment — making it a construct directly shapeable by systemic interventions. The MSKOP model operationalises resilience strengthening through a sequence of behaviourally measurable competences (see Section 5.2).

1.3 Three-Layer Epidemiological Pyramid

Mental health in children and adolescents is systematically deteriorating despite a growing number of prevention programmes delivered in the school system.

At the national level, illustrated by data from OECD member states as a representative example of universal education systems across all WHO regions, the Młode Głowy study [2] (N = 184,000 pupils aged 10–19, 1,923 schools from all regions) documents that 43.3% of pupils exhibit low self-esteem, 80% report difficulties coping with stress, 44% experience chronic loneliness, and 9% have attempted suicide. These data do not indicate a knowledge deficit about stress — they indicate a deficit in coping competence.

At the OECD systems level, PISA 2022 [94] for the first time systematically measured student wellbeing: 27% of adolescents in OECD countries report low school belonging; 37% report chronic exposure to school-related stress. At the European level, the European Commission [3] documents that 9 million adolescents (aged 10–19) in Europe face mental health challenges [4], suicide remains the second leading cause of death among 15–19-year-olds [5], and 25% of pupils experienced bullying in the previous month. Mental health problems affected approximately 84 million EU residents — one in six — generating costs exceeding €600 billion annually [6]. At the global level, WHO Europe [7] documents a 41.5% increase in the prevalence of mental disorders among 15–19-year-olds between 2010 and 2023. According to the Global Burden of Disease Study 2021, mental disorders account for 20.27% of all Years Lived with Disability in the 10–24 age group [88].

1.4 Regulatory Framework and the Methodological Gap

The epidemiological paradox described in Section 1.3 does not stem from an absence of systemic regulation. The European Union's Mental Health Strategy [6] designates the strengthening of children's and adolescents' psychological resilience through school-based interventions as a priority. However, regulatory frameworks do not specify methodological standards concerning the instructional sequence of implemented interventions — a structural gap fillable without rebuilding existing regulation. All six recommendations formulated in Section 7 are implementable within existing legal instruments, without requiring new legislation.

1.5 Neurodevelopmental Determinants of Adolescent Vulnerability

Epidemiological data gain an additional explanatory layer when examined through the lens of neurodevelopment. The adolescent brain is characterised by neurologically elevated limbic reactivity alongside a deficit in regulatory resources of the prefrontal cortex, which reaches full structural and functional maturity only in the third decade of life [8, 9]. HPA axis reactivity changes non-linearly throughout adolescence, and the consequences of stress experienced in this neurodevelopmental window may manifest as psychiatric disorders only in adulthood [10, 11] — conferring on early competence-based intervention a particular preventive significance beyond the immediate programme effects.

1.6 Mechanism of the Paradox

Both trends — rising disorder prevalence and rising numbers of prevention programmes — proceed in parallel and in the same direction. The standard interpretation assumes insufficient scale of intervention. The authors propose an alternative hypothesis: prevention programmes are structurally defective — they implement only the information-transfer phase and do not reach the level of behavioural competence. An

increase in the number of methodologically incomplete programmes cannot halt the rise in clinical indicators, because it does not eliminate the cause — it merely eliminates its visibility.

The cognitive mechanism of this ineffectiveness is precisely described by Cognitive Load Theory. Sweller [14] formulates the foundational theorem: 'Goal attainment and schema acquisition may be two largely unrelated and even incompatible processes.' This means that a pupil's participation in prevention activities and the acquisition of health competences are two separate — and sometimes mutually exclusive — processes. Sweller, Ayres and Kalyuga [16] specify: 'If nothing has changed in long-term memory, nothing has been learned.'

For pupils experiencing psychological difficulties — presenting the triad of loneliness, low self-esteem, and lack of agency [2] — the mechanism of ineffectiveness is twofold. Paas, Renkl and Sweller [17] demonstrate: 'Extraneous cognitive load is primarily important when intrinsic cognitive load is high because the two forms of cognitive load are additive.' Pupils in crisis carry chronically elevated intrinsic cognitive load resulting from unmet emotional needs. A programme based solely on information delivery generates additional extraneous cognitive load, whose sum with intrinsic load exceeds working memory capacity. Sweller et al. [16] note that in such conditions 'learners may not even commence learning because the entire pool of working memory resources is needed to deal with the instructional processes used.'

Mental health competences — recognising a peer's psychological crisis, responding effectively, referring to a specialist — are what Sweller [18] classifies as biologically secondary knowledge: 'biologically secondary, domain-specific skills need to be explicitly taught and deliberately learned [...] they will not be automatically learned.' Mere presence in the school environment does not generate these competences, regardless of the number of programmes implemented.

The central thesis of this paper — that an increase in the number of methodologically incomplete prevention programmes cannot halt rising clinical indicators — is an analytical, not an empirical, proposition. Direct empirical verification would require correlational analysis between the methodological completeness of programmes and clinical indicators across time. Such analysis is recommended as a priority research direction (Section 9).

1.7 Clinical Confirmation: Behavioural Addictions as a Model

The double-learning-block mechanism described in Section 1.6 has a clinical analogue in the growing population of adolescents with behavioural addictions. Gaming disorder — classified in ICD-11 [37] — is characterised by reduced D2 dopamine receptor availability in the striatum, reduced grey matter volume in the dorsolateral prefrontal cortex, and impaired impulse control [38]. Because these same neurobiological structures underpin the executive resources required for schema formation in long-term memory [14, 16], their chronic dysregulation in gaming disorder constitutes — in the authors' view — a neurological substrate of chronically elevated intrinsic cognitive load. Prevalence is estimated at 0.7–27.5%, a wide range reflecting primarily methodological heterogeneity across studies [39].

1.8 Convergence of Four Traditions — One Structural Error

Four independent intellectual traditions, each from a different era, diagnose an identical structural error. The tradition of philosophical pedagogy [1]: the pupil as 'theoretical spectator' rather than active participant. The tradition of educational taxonomy [21]: dominance of recall-measuring questions at the expense of higher taxonomic levels. The tradition of instructional design [22]: 'remember-what-you-were-told questions do little to promote learning.' The tradition of cognitive science [14]: goal attainment is not identical with schema acquisition.

The fact that four independent traditions — philosophical pedagogy (1916), educational taxonomy (1956), instructional design (2007), and cognitive science (1988) — independently and without mutual cross-reference diagnose the same structural error indicates that this error is not a local pathology of any particular educational system. It is a built-in institutional tendency to reduce instruction costs by eliminating the Show, Let and Try Me phases whilst preserving the appearance of learning — a systemic error of cost optimisation at the expense of effectiveness.

2. GENEALOGY OF SEQUENTIAL INSTRUCTIONAL MODELS: 185 YEARS FROM HERBART TO WHO

2.1 Johann Friedrich Herbart (1776–1841): Foundation of Scientific Pedagogy

Merrill [23] identifies Herbart as the progenitor of the instructional sequence: 'He recommended that the teacher should first prepare the pupils [...] associate the new lesson with ideas studied earlier [...] use examples to illustrate [...] test pupils to ensure they have learned.' Herbart's sequence — preparation, linking with prior knowledge, illustration by example, verification — is structurally identical to the Tell–Show–Let–Try Me

model formulated nearly 185 years later in peer-reviewed literature.

2.2 John Dewey (1916, 1938): Learning through Experience

Dewey [1] formulates the first systematic critique of the exclusively informational model: a pupil treated as a 'theoretical spectator' does not acquire competences through intellectual observation — active participation in experience is required. Dewey [24] specifies: 'The belief that all genuine education comes about through experience' — however, not every experience leads to learning. Dewey identifies two conditions for educational experience: continuity and interaction. The Tell phase provides continuity with prior knowledge, Show provides an observational model, Let provides first-hand experience of action, and Try Me provides reflection and transfer.

2.3 Halsted, Gaudet and the Clinical Tradition

The See One, Do One, Teach One model derives from surgical training practice at the turn of the twentieth century [25]. Kotsis and Chung [25] document differences in retention between the Tell phase and the Try Me phase — data widely cited in the educational literature, though requiring interpretive caution as they do not originate from primary randomised trials. Evans and Schenarts [27] document that the SODOTO model without a supervisory structure led medicine to a standstill: 'Without structure for what should be taught, guiding principles for training, or investigative inquiry for new methods or practices, medical education reached an unfortunate standstill by the late nineteenth century.' Post-2000 surgical training reforms — introducing supervised practice with feedback as a mandatory element — represent a clinical precedent that school-based prevention has yet to implement.

2.4 Kurt Lewin (1946): Dialectical Tension as the Mechanism of Learning

Lewin in 1946, conducting small group training to address social tensions, identified the mechanism of learning in the group [33]: 'learning is best facilitated in an environment where there is dialectic tension and conflict between immediate, concrete experience, and analytic detachment.' Demonstration in the Show phase creates tension between what the participant already knows and what they observe as inconsistent with their prior world-model. Both Lewin and Skinner [34] independently discovered the same mechanism: feedback must be grounded in observable behavioural change, not in the participant's introspection.

2.5 Burrhus Frederic Skinner (1938, 1953): Behaviourist Foundations of the TSL Model

This section presents the central finding of the paper, not previously formulated in the literature.

Skinner [34] in The Behavior of Organisms describes a system of operant conditioning principles, six of which exhibit structural convergence with the phases of the TSL model. The Priming principle describes the mechanism of 'showing or telling' as a method of triggering the desired behaviour for the first time so that it can be reinforced — structural convergence with the function of the Tell Me and Show Me phases. The Vanishing/Fading principle describes the gradual withdrawal of discriminative stimuli — structurally convergent with Merrill's Diminishing coaching [22] and fading supervision. The Shaping principle through successive approximations [35] describes a sequence of reinforcements of successive approximations to the target behaviour — convergent with individualisation in indicated prevention. The Chaining principle describes how complex institutional behaviour can be established by linking a sequence of simpler behaviours. The principle of behavioural measurement rejects introspection as a scientific method. Skinner [35] describes three causal links: external action, internal condition, behavioural change — structurally convergent with the three-level competence verification present in global standards.

The term 'structural convergence' denotes here the identity of the function performed by a given requirement and a given principle within the architecture of the system — a stronger claim than formal analogy, weaker than a proven shared causal mechanism.

Table — Table 1. Structural convergence between methodological requirements of school prevention standards and Skinner's principles (1938, 1953)

Methodological Requirement	Skinner's Principle
Tell–Show–Let–Try Me sequence	Priming: activation via showing or telling
Supervision with fading support	Vanishing / Fading
Individualisation in indicated prevention	Shaping via successive approximations
Institutional partnership	Chaining of institutional behaviours
Prohibition of declarative metrics	Behavioural measurement
Three-level verification	Three causal links (action–condition–change)

Source: authors' own compilation based on Skinner [34, 35].

2.6 David Kolb (1984, 2015): Constructivist Legitimation of the Cycle

Kolb [26] defines learning as 'process whereby knowledge is created through the transformation of

experience' and synthesises the traditions of Dewey, Lewin and Piaget. The key limitation — 'No one stage of the cycle is effective as a learning procedure on its own' — is the fourth confirmation of the structural error in programmes restricted to a single phase. Kolb and Kolb [41] codify six propositions of Experiential Learning Theory. Proposition 2 — 'All learning is re-learning' — justifies the requirement for annual programme continuity: a one-off programme structurally does not activate the process of continuous schema modification through new experiences.

2.7 John Sweller (1988, 2011): Cognitive Justification of the Sequence

Sweller [14] formulates Cognitive Load Theory: working memory has limited capacity, and learning occurs only when germane resources are not exhausted by extraneous load. The three types of load [16] — intrinsic (arising from the nature of the material), extraneous (arising from instructional quality), and germane (resources for schema construction) — are additive. Social competences constitute material with high element interactivity — requiring simultaneous processing of many interrelated elements. The TSL sequence is CLT's answer: the Tell phase activates schemas, reducing load; the Show phase delivers an integrated model through the worked example effect; the Let phase allows practice with scaffolding on partially formed schemas.

2.8 David Merrill (2002, 2007): Synthesis of Eight Traditions and Explicit Naming

Merrill [23] reviews eight independent theories of instruction and demonstrates that all eight contain the same sequential principles. Merrill uses names as explicit headings: 'Principle 3 — Demonstration (Show me): Learning is promoted when the instruction demonstrates what is to be learned' and 'Principle 4 — Application (Let me): Learning is promoted when learners are required to use their new knowledge.' The names Show Me and Let Me have a documented scientific source in a 2002 peer-reviewed article [23]. Merrill [22] adds the fifth phase — Integration — with three corollaries: Watch Me, Reflection, Creation. A programme stopping at Let Me without Try Me implements four of five principles and is formally incomplete by 20%. Merrill [22] formulates a falsifiable claim: 'Learning from a given program will be promoted in direct proportion to its implementation of first principles.'

2.9 Anderson & Krathwohl (2001): Taxonomy for Three-Domain Verification

Anderson and Krathwohl [47] identify four types of knowledge: factual, conceptual, procedural, and metacognitive. The Tell Me phase corresponds to factual and conceptual types — measured by pre/post test with a delta ≥ 20 percentage point threshold. The Show Me and Let Me phases correspond to procedural type — measured by a behavioural observation scale. The Let Me and Try Me phases correspond to affective and metacognitive types — measured by a climate index T0–T3M. Measuring skills through a cognitive test is a category mismatch error: it measures a different domain from the one to which behavioural competences pertain.

2.10 WHO (2023) and European Commission (2024): Codification of the Standard

WHO [50] in Global Accelerated Action for the Health of Adolescents 2.0 (AA-HA! 2.0) introduces Chapter 3.8 as an autonomous category of mental health interventions. The European Commission [3] adopts the Whole-School Approach with three levels — Universal, Targeted support, Individualised — structurally identical to the three levels of prevention. The MSKOP model directly addresses two flagships of the EC Comprehensive Approach to Mental Health [6]: Flagship 9 (mental health in schools) and Flagship 18 (destigmatisation). The model is aligned with WHO Mental Health Action Plan 2013–2030 objectives 1.3 and 3.2, three articles of the UN Convention on the Rights of the Child (1989), SDG 3.4 and SDG 4.7.

2.11 The TSL Genealogical Chain: 185 Years of Documentation

Three parallel traditions develop independently and converge in Merrill's synthesis. The pedagogical tradition: Herbart (1841) → Dewey (1916, 1938) → Kolb (1984). The clinical tradition: Halsted (~1900) → Gaudet (~1940) → Kotsis & Chung (2013). The cognitive-behavioural tradition: Skinner (1938/1953) → Sweller (1988) → Anderson & Krathwohl (2001). All three converge in: Merrill (2002) → WHO AA-HA! 2.0 (2023) → European Commission Guidelines (2024) → national standards (2026). Each link is verifiable through a citable primary source.

2.12 Limitations and Critical Perspectives

First critique — inquiry-based learning. Hmelo-Silver, Duncan and Chinn [52] argue that for certain competence types, an inverted sequence — beginning with an unstructured problem — yields higher transfer levels. Kirschner, Sweller and Clark [53] indicate that this effect is an artefact of erroneous operationalisation and disappears under controlled conditions for novices. The dispute is unresolved for Profile Z (advanced) participants — indicating a direction for empirical verification.

Second critique — formulated by Kalyuga [98] — concerns the application of CLT beyond well-defined

task contexts. Social competences are characterised by an ill-defined problem space; Kalyuga indicates that in such conditions excessive 'guidance' may inhibit learning in participants with higher baseline levels. The MSKOP model addresses this objection through the expertise reversal effect [17].

Third critique — the participatory perspective. Sfard [54] identifies two metaphors of learning: acquisition and participation. The MSKOP model is rooted primarily in the acquisition metaphor. The model partially addresses this through its three-track architecture and peer involvement, but lacks an explicit theory of the cultural context of competence.

2.13 Competing Models and Positioning of MSKOP

Existing SEL platforms — particularly CASEL [99] and the PATHS programme [100] — contain sequential components approximating the Tell and Show phases. Mental Health First Aid (MHFA) [101] contains a two-level leader certification system approximating MSKOP Certificates 1–2, implementing primarily the Tell and Show phases. MSKOP differs from these approaches in three elements: (1) an explicit Let Me phase architecture based on CLT [14, 16] as the design mechanism; (2) a three-track structure including teachers and parents as separate tracks with their own TSL sequence; (3) a six-layer sustainability system based on behaviourist mechanisms (Chaining, intermittent reinforcement [34, 76]). Comparative studies of MSKOP with CASEL/PATHS/MHFA under RCT conditions are indicated as an empirical verification priority (Section 9).

3. TAXONOMY OF COMPETENCES AND THREE-LEVEL VERIFICATION SYSTEM

3.1 Three Domains Require Three Measurement Methods

Level 1 — declarative knowledge — measured by pre/post test: effectiveness threshold is delta ≥ 20 percentage points; retention measurement at four weeks should show ≥70% of the direct post-test score. Level 2 — procedural skills — measured by a five-criterion behavioural observation scale by an independent observer; competence threshold ≥3/5 for ≥75% of participants. Evans and Schenarts [27] confirm empirically that e-learning materials are effective exclusively for Level 1 — Levels 2 and 3 require direct contact with feedback. Level 3 — social competences — measured by a learning environment climate index at T0, T1, T3M, an escalation indicator, and the percentage of participants using support.

3.2 The SIZF Scale — A Methodological Audit Instrument

Based on Merrill's theorem [22], the authors propose the Scale of Implementation of Fundamental Principles (SIZF) as the first scale for auditing prevention programmes grounded directly on a peer-reviewed instructional theorem.

Table — Table 2. SIZF Scale — methodological audit instrument for prevention programmes

Principle	Minimum Criterion
Activation	Programme references participant's prior experien
Demonstration — Show Me	At least one ≥5 min demonstration observable by participants (transient information effect [45])
Application — Let Me	Supervised practice ≥20 min with ≥1 feedback ite (deliberate practice [82])
Integration — Try Me	Transfer mechanism to natural environment + cha measurement
Problem-centred	Tasks anchored in real-life problems of participan
Interpretation: 0–2 = structurally ineffective; 3 = partially complete; 4–5 = m	

Source: authors' own compilation based on Merrill [22, 23]. Note: The SIZF Scale has preliminary status. Full psychometric validation — including content validity (CVI ≥ 0.80), inter-rater reliability (Cohen's κ ≥ 0.70), and criterion validity (r ≥ 0.40) — is required prior to formal policy application.

3.3 Merrill's Content Typology: Module Design Instrument

Table — Table 3. Merrill's content typology applied to psychoeducational modules

Module	Content Type	Element Interactivity	Tell Me	Sh
Interpersonal relationships	kinds-of	High	Definition + criteria	Exampl non-exa
Assertive communication	how-to	Moderate	Sequence of steps	Demons steps
Stress management	what-happens	Moderate	Description of process	Illustrat conditio
Crisis recognition	kinds-of + how-to	Very high	Definition + signals	Case stu
Referral to specialist	how-to	High	Protocol of steps	Demons convers
Stigma prevention	kinds-of	High	Definition + glossary	Before/a

Source: authors' own compilation based on Merrill [22]. ECL = extraneous cognitive load; ICL = intrinsic cognitive load.

3.4 Why Standard Prevention Programme Evaluations Are Methodologically Flawed

Six independent scientific traditions identify the identical evaluation error. Skinner [34] rejects introspection as a scientific method. Bloom's revised taxonomy [21] notes that the dominance of recall-measuring questions derives from the nature of available evaluation tools. Merrill [23]: the type of exercise must match the taxonomic level of the objective. Anderson and Krathwohl [47]: the cognitive, procedural, and affective domains require separate measurement instruments. Sweller [14]: participation is not identical with schema acquisition. Lewin [33]: feedback must be grounded in observable behavioural change.

3.5 Alignment with EU Key Competence Framework

The mental health competences developed by the MSKOP model correspond to four of the eight key competences defined in Council Recommendation EU 2018/C 189/01: (1) personal, social and learning-to-learn competence; (2) civic competence; (3) digital competence (in Digital Therapeutics implementations); (4) communication competence. This mapping enables integration of the MSKOP model with national curricula referencing the EU framework. The model directly addresses SDG 3.4 and SDG 4.7.

4. THREE PARALLEL TSL TRACKS: PUPILS, TEACHERS, PARENTS

4.1 Rationale for the Three-Track Architecture

Anderson and Krathwohl [47]: procedural competence is not transferable through observation. A teacher who has themselves undergone only a Tell-only track does not possess the procedural schema in long-term memory necessary to guide pupils through the Let Me phase — regardless of subject-matter knowledge or motivation. Kolb and Kolb [41]: the facilitator must themselves have undergone the TSL cycle in the given competence.

4.2 Pupil Track (Track A)

The adaptation of TSL phase proportions to participant profiles derives from the expertise reversal effect [17]: as a participant's baseline knowledge increases, the optimal share of Tell and Show phases decreases in favour of Let and Try Me phases. Detailed percentage proportions for each profile are provided in Table 7 (Section 8.4.2).

In the MSKOP model, the peer leader fulfils two distinct methodological functions: (1) as a model in the Show Me phase — operationalising peer learning through observation of a competent peer (Braaksma et al. [74], d = 0.43 for pupils observing peers with a similarly low level of competence); (2) as an active supporter in the Let Me phase — operationalising peer support through supervised interaction [102]. WHO AA-HA! 2.0 [50] recommends peer involvement as an adolescent right. The European Commission [3] documents that pupils themselves demand 'practical learning such as life skills' and 'interactive lessons and group work.'

4.3 Neurobiology of Peer Learning

The advantage of peer leaders over adult experts has an independent neurobiological justification. Rizzolatti and Craighero [70] document that the mirror neuron system exhibits selective activation during both action performance and observation. Note: mirror neuron theory remains the subject of methodological debate [103, 104]. The authors use the term 'mirror system activation' as a phenomenological descriptor common to action observation, not as a claim about a specific neural mechanism.

Braaksma, Rijlaarsdam and Van den Bergh [74] demonstrated on N = 214 pupils that lower-ability pupils achieved significantly higher learning effects through observation of peer models with a similarly low level of competence. The authors formulate a synthetic conclusion: an adolescent observing a peer demonstrating a supportive conversation protocol probably activates more intense mirror system activity than when observing an adult expert — which, in accordance with CLT [16], may translate into higher germane resources engaged in procedural schema construction. This hypothesis requires direct empirical verification in an adolescent population.

4.4 Teacher Track — Supervision as TSL for Adults

Eight independent sources from eight scientific traditions across eight decades indicate the identical optimal structure of supervision as a 16-hour TSL sequence. None of these traditions cites the remaining seven.

Table — Table 4. Convergence of eight independent sources supporting the 16-hour supervision structure

Source	Tradition	Yea r	
Skinner [34]	Behaviourism	1938	Vanishing / Fading
Merrill [22, 23]	Instructional design	2002	Diminishing coaching
Kolb & Kolb [41]	Learning theory	2021	Role: Expert→Facilita
Anderson & Krathwohl [47]	Taxonomy	2001	Procedural phase requ
Lewin [33]	Social psychology	1946	Feedback as mechanis

Hunuk [43]	Longitudinal study	2017	Spiralling
Cavioni et al. [75]	School psychology	2022	Quasi-RCT
European Commission [3]	EU education policy	2024	CPD with

Source: authors' own compilation. The convergence of eight independent lines of evidence constitutes in social science methodology the strongest possible argument for treating the 16-hour supervision structure as optimal.

Operational structure: Tell (4 hours — theory; role: Expert) → Show (4 hours — observation with feedback; role: Facilitator) → Let (4 hours — facilitation with supervisor present; role: Coach; Diminishing coaching) → Try Me (4 hours — group supervision; 4R Debriefing; role: Evaluator). Kolb's spiral [41]: supervision every two months for 12 months = six complete spiral cycles.

4.5 Parent Track (Track C)

TSL condensed to 90 minutes: Tell (10 minutes) → Show (20 minutes) → Let (60 minutes) — 80% of time on the practical phase. Collective Working Memory Effect [44]: a parent practising a supportive conversation with their child simultaneously engages many interacting elements. Proposition 1 of ELT [41]: the parent transfers the learning cycle beyond the institutional setting.

5. SYSTEM OF EVALUATION INDICATORS WITHOUT DECLARATIVE METRICS

5.1 Methodological Foundations

The evaluation system rests on five principles from five independent traditions. Sweller et al. [16]: the only legitimate evidence of learning is change in long-term memory measurable by a transfer test. Skinner [34]: only the third causal link is measurable — observable behavioural change. Staddon and Cerutti [76]: behavioural stabilisation requires measurement after twelve months. Dick, Carey and Carey [77]: three-level formative evaluation is the R&D standard.

5.2 Objective Indicators Matrix

Table — Table 5. Matrix of objective evaluation indicators — MSKOP model

Phase	Domain [47]	Instrument	
Tell Me	Factual + conceptual	Standardised pre/post test	
Tell Me retention	Conceptual	Delayed recall test	
Show Me	Procedural	5-criterion behavioural scale (ext. observer)	
Let Me	Procedural + affective	Learning climate index T0–T3M	Statistically significant
Let Me escalation	Affective	Specialist referral rate	Increase ≥1
Try Me	Metacognitive	% settings active at 12M	≥70%
Try Me stability	Metacognitive	Stable behaviour [76]	Return to pattern

Source: authors' own compilation based on Anderson & Krathwohl [47]; Sweller [14]; Staddon & Cerutti [76]. T0 = baseline; T1 = post-programme; T3M = 3-month follow-up; T6M = 6-month follow-up; T12M = 12-month follow-up. Δ pp = percentage point difference.

5.3 Three-Level Formative Evaluation

Dick, Carey and Carey [77]: one-on-one (5–8 participants) → small group tryout (20–30 participants) → field trial (full setting or 3–5 pilot settings) → summative evaluation by external experts. The minimum pilot protocol (Section 5.5) covers at least 3–5 educational settings with varying profiles (urban/rural; primary/secondary; mainstream/specialist) over a minimum of 12 months with full T0–T12M measurement.

6. ADAPTATION TO SYSTEMIC SCHOOL CONDITIONS

6.1 Five Structural Constraints and Literature-Based Solutions

Constraint 1 — lesson unit duration. The transient information effect [45] places the maximum Tell block at approximately 10–15 minutes with high element interactivity. A 45-minute lesson is sufficient with segmentation: Tell (10 min) → Show (10 min) → Let (20 min) → Try Me (5 min reflection).

Constraint 2 — heterogeneity of educational setting types. The expertise reversal effect [17] determines adaptation of phase proportions. The variability effect [46] indicates that the same TSL structure across different contexts strengthens transfer through schema generalisation.

Constraint 3 — teacher turnover. Kolb's spiral [41] is resilient to turnover: each new teacher begins from new concrete experience; institutional supervision ensures continuity regardless of staff changes.

Constraint 4 — scale of implementation and fidelity. Durlak and DuPre [79] document that implementation fidelity explains more variance in outcomes than programme quality itself. Scaling requires multiplier supervisors trained in the TSL model prior to rollout, plus fidelity monitoring through the SIZF scale.

Constraint 5 — absence of post-programme continuity. Three sustainability mechanisms: TSL leader certificates as primary reinforcers [35]; agreements with counselling centres as institutional chain links [34]; updating of setting programme documents as the formal basis for continuity.

6.2 Effectiveness Moderators

Weare and Nind [80] in a meta-analysis of school mental health interventions document moderation by sex and age. Frick et al. [81] identify socioeconomic status as a moderator of peer support programme effectiveness. Adaptation of TSL phase intensity to these moderators is indicated as a direction for implementation research. A research priority for WHO is verification of MSKOP in LMIC contexts with adaptation of the supervisory structure to systems without a psychological counselling centre equivalent as an escalation chain link.

6.3 Minimum Implementation Requirements

Implementing the MSKOP model requires meeting the following minimum conditions: (a) Pupil track — minimum four thematic modules (Section 3.3) delivered in full five-phase sequence; (b) Teacher track — minimum 16 hours of supervision in the format described in Section 4.4; (c) Escalation protocol — formal agreement with one Level 2 entity (counselling centre) and one Level 3 entity (child psychiatry); (d) Measurement — implementation of at least T0, T1, T3M measurement points from the indicators matrix. These conditions are necessary, not sufficient. A programme meeting only the minimum corresponds to a score of 3/5 on the SIZF Scale and is classified as 'partially complete.'

6.4 Phased Implementation Schedule

Phase 0 (months 1–3): external supervisor training; signing institutional agreements; baseline T0. Phase 1 (months 4–9): Track B (teachers) + Track A (pupils, modules 1–2). Phase 2 (months 10–15): Track A (modules 3–4) + Track C (parents); T1 measurement. Phase 3 (months 16–24): cyclic supervision; T3M and T6M measurements; leader certification; T12M sustainability assessment. Phase 4: scaling or calibration decision based on pilot results.

7. SYSTEMIC RECOMMENDATIONS FOR EDUCATIONAL POLICY

Recommendation 1 — Terminological standardisation. Educational systems should adopt the Tell–Show–Let–Try Me sequence as official methodological terminology in documents governing prevention programmes. Basis: Merrill [23]; WHO AA-HA! 2.0 [50]; European Commission [3].

Recommendation 2 — Programme certification through the SIZF Scale. Programmes seeking recommended status should document implementation of all five Merrill principles with a SIZF score of 4–5. Following psychometric validation of the SIZF Scale and empirical validation of MSKOP, a score < 3/5 on the SIZF Scale would constitute an operational criterion for exclusion from public funding — a direct application of Merrill's theorem [22] at the policy level and a mechanism for breaking Goodhart's loop (W12). Triangulation through LRIS [66] and CLT-IG [67].

Recommendation 3 — 16-hour teacher supervision standard. Public funding of prevention programmes should be conditional on supervision delivered as a 16-hour TSL sequence with bimonthly follow-up over one year. Basis: convergence of eight independent sources (Section 4.4); PROMEHS [75] as a model referenced by the European Commission [3].

Recommendation 4 — Exclusion of one-off programmes. Programmes without a follow-up mechanism and a continuation spiral should be excluded from public funding as structurally ineffective. Basis: Kolb [26]: 'no one stage of the cycle is effective as a learning procedure on its own'; Egan et al. [33]: episodic learning is not synonymous with lifelong learning.

Recommendation 5 — Escalation protocol as a standard. Prevention programmes should contain a three-level referral protocol (setting → counselling centre → first referral level of child psychiatry) as a mandatory element. Basis: Skinner's Chaining mechanism [34] operating at the systemic level (Section 8.5.1); WHO AA-HA! 2.0 [50]; European Commission [3].

Recommendation 6 — Prohibition of declarative metrics. Satisfaction surveys should be excluded from the system for assessing programme effectiveness; effectiveness should be measured through observable behavioural changes and climate indicators. Basis: Skinner [34]; Anderson & Krathwohl [47]; Sweller [14].

8. THE SEQUENTIAL MODEL FOR ADOLESCENT MENTAL HEALTH RESILIENCE (MSKOP / ISMAMHR) — VERSION 2.2

8.1 System Architecture and Closure Logic

The MSKOP model is — to the authors' knowledge and based on the literature search described in the Methodological Note — the first comprehensive synthesis linking five independent scientific traditions — behaviourism, constructivism, Cognitive Load Theory, the clinical tradition, and public health standards — into

one self-regulating methodological system addressing school-based prevention of adolescent mental health.

The term 'self-regulating' is used in the architectural sense: the system generates internal feedback loops through sequential certification and behavioural evaluation mechanisms, which correct implementation without requiring external intervention — while maintaining active coupling with the institutional context through Layers III and VI. Every deviation from the sequential structure generates a measurable effectiveness deficit (Merrill [22]: proportionality of effect to the number of principles implemented), constituting the operational justification for the SIZF audit system.

The system is architecturally complete: each phase of the sequence is justified by at least three independent scientific traditions; each systemic requirement is grounded in a verifiable primary source; each evaluation tool is a published instrument. Omission of any layer of the model is a guaranteed source of ineffectiveness documented by all five traditions simultaneously.

8.2 Layer 0 — Model Assumption

Mental health competence constitutes biologically secondary knowledge [18] — it is not acquired through mere environmental participation or informational exposure. It requires a designed instructional sequence with a supervised practical phase and feedback. The implication of this assumption is irremovable within the adopted theoretical framework: no programme implementing only information transfer can achieve the level of behavioural competence — regardless of content quality, facilitator qualifications, or financial investment. This assumption is empirically verifiable through the test described in W6 (Section 8.10): a falsifying result — demonstrating that a Tell-only programme achieves measurable behavioural change above threshold — would require revision of the foundational assumption or its restriction to a specific class of competences.

8.3 Layer I — Sequential Architecture (Micro Level)

Table — Table 6. Three-layer scientific justification of the TSL-T model phases

Phase	Behavioural Mechanism	Cognitive Mechanism	
Tell Me	Priming: S^D [34]	Schema activation; ↓ECL [14]	Ab Co [26
Show Me	Showing or telling [34]	Worked example effect [16]	Ref Ob ten
Let Me	Operant conditioning Type R [34]	Practice with scaffolding; ↑GR [16]	Concrete Expe deliberate prac [82]
Try Me	Intermittent reinforcement [76]	Schema acquisition; LTM change [14]	Active Experimentatio
Transfer	Chaining; generalisation [34]	Variability effect [46]	New CE cycle [41]

Source: authors' own compilation. ECL = extraneous cognitive load; GR = germane resources; LTM = long-term memory; CE = concrete experience. Each phase is justified by at least three independent scientific traditions, none of which cites the other two in relation to the same principle.

8.4 Layer II — Track Architecture (Mezzo Level)

Table — Table 7. Intrinsic cognitive load profiles and TSL phase proportions

Profile	Indicators	Tell	Show	Let	Try Me	C
N – Novice	Grades 1–6; no difficulties	30%	35%	25%	10%	4 p
S – Standard	Grades 7–8; secondary	20%	30%	35%	15%	3–
Z – Advanced	Upper secondary; peer leaders	15%	20%	40%	25%	3 p
K – Elevated ICL	Difficulty triad [2, 38, 39]	35%	35%	25%	5%	2–

Source: authors' own compilation based on Sweller et al. [16, 17]; Skinner [35]. Profile K encompasses pupils with the psychological difficulty triad [2] and pupils with behavioural addictions generating chronically elevated ICL through an analogous neurobiological mechanism [38, 39]. These proportions are design guidelines; empirical calibration is required in pilot implementation.

Operational structure of teacher supervision — 16-hour model:

Session 1 (4h) — Tell Me: TSL theory; mechanisms of change; role: Expert [41]. Session 2 (4h) — Show Me: supervisor observation; feedback; dialectical tension [33]; role: Facilitator [41]. Session 3 (4h) — Let Me: independent facilitation with supervisor; Diminishing coaching [22]; fading [17]; role: Coach [41]. Session 4 (4h) — Try Me: group supervision; 4R Debriefing [25]; spiralling [43]; role: Evaluator [41]. Kolb's spiral [41]: supervision every two months for 12 months = six complete spiral cycles.

8.5 Layer III — Institutional Architecture (Macro Level)

Institutional partnership is not an organisational element of the programme — it is Skinner's Chaining mechanism [34] operating at the systemic level. Each

link generates a discriminative stimulus activating the next through the consequences of its own action. Sequence: educational setting → psychological-pedagogical counselling centre → first referral level of child psychiatry. WHO AA-HA! 2.0 [50] confirms independently: multisectoral action as a global standard.

The staged care model [83] — a sequence of psychiatric interventions of increasing intensity — and Merrill's problem progression [23] — tasks of increasing complexity — both operationalise Skinner's successive approximations mechanism [35] in two independent domains. This interdisciplinary convergence is an analytical finding absent from any of the primary sources. Practical implication: the adolescent mental health protection system should design intervention intensity pathways as a sequence: universal prevention (MSKOP micro level, Profiles N and S) → selective prevention (MSKOP Profile K) → counselling-level intervention (escalation protocol Level 2) → outpatient psychiatry (Level 3) → hospitalisation (if necessary).

Escalation Protocol — three levels:

Level 1 — Setting: peer leader identifies a signal, delivers the supportive conversation protocol. Transition criterion from Level 1 to Level 2: (a) no improvement at T1M monitoring, or (b) presence of at least one high-risk signal from the list defined in the crisis recognition module.

Level 2 — Specialist/counselling centre: consultation, diagnosis, decision. T3M monitoring if adequate; escalation to Level 3 if inadequate.

Level 3 — First referral level of child psychiatry: referral with full PKE documentation; feedback to setting; participant return to programme after stabilisation in Profile K.

The escalation protocol faces three documented structural barriers: diagnostic latency [84]; help-seeking failures [85]; stigmatisation [86, 87]. The authors identify a fourth structural barrier as a gap in the Escalation Communication Protocol (PKE): a specialist at Level 2 or 3 operating without structured information about the history of supportive actions at Level 1 cannot optimise intervention intensity.

8.6 Layer IV — Evaluation System

See Table 5 (Section 5.2) for the full indicators matrix. Three-instrument triangulation for audit:

Table — Table 8. Three audit instruments for programme evaluation

Instrument	Scale	Tra
SIZF (authors)	0–5	Instructional des
LRIS	1–7	Psychology of motivation
CLT-IG	0/1 × 8	Cognitive science

Source: authors' own compilation. SIZF = Scale of Implementation of Fundamental Principles; LRIS = Load Reduction Instruction Scale; CLT-IG = Cognitive Load Theory Implementation Guide.

8.7 Layer V — Sequential Certification

Table — Table 9. Four-level sequential certification model — MSKOP

Certificate	Condition	A&K Domain	Re
C1 – Participant	Tell Me ≥70% post-test	Factual + conceptual	Imn
C2 – Practitioner	+Show Me ≥3/5 + behav. obs.	Procedural	Afte veri
C3 – Leader	+Let Me: climate change T0→T3M	Affective	Afte mea
C4 – Supervisor	+Try Me: annual stability	Metacognitive	Afte mon

Source: authors' own compilation based on Anderson & Krathwohl [47]; Skinner [34, 35]. C1–C3 verified and awarded by external supervisor; C4 by an independent external evaluator — ensuring independence of assessment from the implementing body. Certification systems awarding certificates for participation in Tell-only programmes reinforce substitute behaviour, not the target behaviour [34].

8.8 Layer VI — Systemic Sustainability

Pillar 1 — Institutional chain (Chaining mechanism [34]; WHO [50]: multisectoral action): setting → counselling centre → first-level child psychiatry. Breaking the chain structurally precludes lasting behavioural change.

Pillar 2 — Updated setting programme document: competences acquired by teachers are embedded in institutional structures independently of external trainer turnover.

Pillar 3 — Network of certified peer leaders: active peer leaders generate new programme cycles without external funding through the multiplier mechanism. Stable behaviour [76]: sustainability indicator — ≥70% of settings active at 12 months without external support.

8.9 Ecosystem Convergence Hypothesis: MSKOP as an Integration Framework for Digital Therapeutics (W9)

Two parallel streams — the MSKOP sequential architecture and the Digital Therapeutics ecosystem for adolescents — have evolved largely independently. Kieling et al. [88] document that 293 million children and adolescents live with at least one diagnosable mental disorder, accounting for 20.27% of all Years Lived with Disability. The Lancet Psychiatry Commission [83]

explicitly recommends a multisectoral approach integrating education, clinical care, and digital infrastructure.

Systematic reviews from 2024–2025 document a structural pedagogical deficit in digital mental health interventions. Di Pierdomenico et al. [89] find that psychoeducation without a structured supervised behavioural practice component remains the dominant approach. Potts et al. [90] document that psychoeducation and mindfulness are the most frequently employed components, while sequential active behavioural elements with feedback are present in a minority of applications. Chen et al. [91] identify the absence of standardised pedagogical frameworks as the main factor in outcome heterogeneity.

The authors hypothesise that integrating the MSKOP sequence with Digital Therapeutics platforms (Tell via application, Show via peer leader video, Let via AI-simulated conversation supervised by a supervisor, Try Me via EMA monitoring) may create the first architecturally complete prevention model scalable without the logistical constraints of traditional school-based interventions — subject to empirical verification (Section 9). The current level of evidence corresponds to the category of promising hypothesis requiring verification through a controlled trial. The hypothesis is falsifiable: absence of a statistically significant difference between the DT-MSKOP variant and MSKOP-only at T3M and T6M in an RCT with $N \geq 200$ would falsify the hypothesis of format equivalence in procedural competences.

8.10 Analytical Conclusions — Original Synthetic Findings (W1–W13)

The following conclusions have no direct counterpart in any of the cited primary sources and constitute the authors' original intellectual contribution.

W1 — Double learning block mechanism. The psychological difficulty triad [2] translates into chronically elevated intrinsic cognitive load. The additivity of loads [17] means that for this group even moderate extraneous load from a Tell-only programme exceeds working memory capacity — actively blocking learning rather than merely failing to support it. A Tell-only programme directed at pupils in crisis is not merely ineffective; it is counterproductive.

W2 — Hypothesis of didactic degeneration of prevention programmes. The authors hypothesise that every prevention programme subjected to cost pressure structurally evolves towards dominance of the Tell phase at the expense of Show, Let and Try Me phases. The mechanism is logically consistent with Skinner's reinforcement theory [34] and organisational economics, but requires empirical verification through longitudinal analysis of prevention programme budgets in relation to their methodological completeness measured by the SIZF Scale.

W3 — Supervision as the sole link of competence transfer. A teacher without their own Let Me phase cannot guide pupils through it — not because they are unwilling, but because they do not possess in long-term memory the procedural schema of that competence [14]. Single-track programmes without teacher supervision are structurally incomplete.

W4 — Staged care equals problem progression: interdisciplinary convergence. McGorry et al. [83]: staged care in psychiatry = a sequence of interventions of increasing intensity. Merrill [23]: problem progression = tasks of increasing complexity. Both models operationalise Skinner's successive approximations mechanism [35] in two independent disciplines.

W5 — Hypothesis of scientific transmission through citation chains. The structural convergence between contemporary prevention standard requirements (Table 1) and Skinner's principles [34, 35] is hypothesised to be the result of a scientific transmission chain: Skinner → CBT → Evidence-Based Prevention → WHO/EC — where each link cites the previous without requiring direct citation of Skinner in the final documents. Verification through citation genealogy analysis is indicated.

W6 — Minimum competence threshold hypothesis. There exists a minimum Let phase time threshold below which no amount of Tell hours generates measurable behavioural competence. The threshold is higher for Profile K and higher for modules with very high element interactivity. No statistically significant change T1–T3M = falling below the threshold. Indicative power analysis: at $d = 0.30$ (minimum clinically significant effect for prevention interventions in general populations, per Cohen 1988), $\alpha = 0.05$, power = 0.80 → $N \approx 176$ per group ($N = 352$ total); at $d = 0.45$ (from Weisz et al. [36], though extrapolation from therapy to prevention requires caution): $N \approx 80$ per group.

W7 — Meta-transfer hypothesis. Pupils undergoing the complete TSL sequence acquire not only mental health competences — they acquire the meta-competence of learning through the Tell→Show→Let sequence, transferable to other domains [41, 82]. Verification through a longitudinal study over 3 years, $N \geq 200$ per condition at three measurement points, is a recommended priority.

W8 — SIZF as a public funding criterion after validation. Following psychometric validation of the SIZF Scale and empirical validation of MSKOP, a score

< 3/5 would constitute an operational exclusion criterion from public funding — a direct application of Merrill's theorem [22] at the policy level and the only mechanism capable of breaking Goodhart's loop (W12).

W9 — See Section 8.9.

W10 — PKE as a clinical standard implementable without legislative change. The Escalation Communication Protocol can be standardised and implemented as a clinical protocol by the regulator in agreement with the counselling and child psychiatry system, without requiring legislative change. PKE standardisation operationalises Skinner's Chaining mechanism [34] at the systemic level and is a direct implication of combining institutional architecture with the literature on diagnostic latency [84, 85].

W11 — Neurodevelopmental window hypothesis as a predictor of MSKOP effect. The effectiveness of MSKOP should be highest in the 10–14 age group, because in this neurodevelopmental window — characterised by higher synaptic plasticity in the dorsolateral prefrontal cortex [8, 9] and a lower degree of consolidation of maladaptive patterns [10, 11] — Skinner's shaping mechanism [35] through successive approximations encounters the lowest neural resistance. Falsifiable through age moderation analysis in the planned RCT (Section 9.2).

W12 — Substitute certification hypothesis and Goodhart's mechanism in school prevention systems. Certification systems based solely on participation (Tell-only) implement the mechanism described by Goodhart [105] and popularised by Strathern [106]: 'When a measure becomes a target, it ceases to be a good measure.' When programme participation becomes the measurable proxy of competence, it ceases to be a measure of competence — institutions optimise for the certificate (lower cost), not the competence (higher cost). The MSKOP certification architecture addresses this through linking Certificates 2–4 to measurable behavioural change, not participation. Falsifiable through comparative analysis of certification systems in an SEL meta-analysis.

W13 — Evidence accumulation paradox as the mechanism perpetuating the structural error. The ineffectiveness of school prevention does not result from a lack of knowledge about effective methods — CASEL (d = 0.57 [99]), PATHS and MSKOP document the availability of effective approaches. It results from the structure of the incentive system, in which the accumulation of scientific evidence on the ineffectiveness of Tell-only programmes actively reinforces their dominance through four linked mechanisms: (1) cost asymmetry of verification — a satisfaction survey (low cost, immediate reinforcement [34]) dominates over T12M measurement (high cost, deferred reinforcement); (2) paradox of legitimisation through critique — every article documenting Tell-only ineffectiveness generates demand for 'new programmes' which, under cost pressure (W2), degenerate to Tell-only; (3) Goodhart's mechanism at the systemic level (W12); (4) the fallacy of composition — the sum of locally rational decisions by system actors generates a globally irrational outcome. Falsifiable through comparison of educational systems using behavioural indicators as funding criteria with those using participation indicators.

8.11 Limitations

Limitation 1 — Narrative review character. Sources were selected purposively; selection risk is addressed by Section 2.12 and the explicit status of the central thesis as an analytical proposition (Section 1.6).

Limitation 2 — Absence of empirical MSKOP validation. The model is a theoretical construct based on literature convergence. Effectiveness under real-world settings conditions is a hypothesis requiring verification through a randomised or quasi-experimental design with comparison group and T0–T12M measurement.

Limitation 3 — Preliminary psychometric status of the SIZF Scale. The instrument has not undergone psychometric validation (Section 3.2). Use restricted to pilot purposes.

Limitation 4 — Limited contextual generalisability. The analysis rests primarily on European data and OECD educational systems. MSKOP adaptation to non-European contexts requires consideration of: (a) cultural differences in peer leadership acceptability between collectivist and individualist cultures; (b) differences in counselling system infrastructure — absence of a counselling centre equivalent as an institutional chain link in many LMIC systems; (c) resource availability for 16-hour teacher supervision in systems with high pupil-to-teacher ratios; (d) curriculum differences determining available instructional time.

Limitation 5 — Incomplete spectrum of moderators. Section 6.2 identifies key moderators; systematic integration with the model is indicated as a direction for supplementary research.

Limitation 6 — Neurobiological mediating hypotheses. Mechanisms described in Sections 1.5 and 4.3 (HPA axis mediation and mirror system activation) are hypotheses consistent with available literature, not proven causal mechanisms in the target population. Studies cited in Section 4.3 were conducted on adult samples or samples with limited generalisability (Ashraf et al. [73]: N = 45, sex-homogeneous). Studies directly testing these mechanisms in adolescent prevention

programme contexts do not exist at the date of submission.

9. RESEARCH AGENDA — MSKOP VERIFICATION PRIORITIES

9.1 RCT verifying the minimum Let phase threshold hypothesis (W6) — N ≥ 350, three conditions (full TSL, variant without Let phase, Tell-only control), T0/T1/T3M/T12M measurement, indicative sample N ≈ 176 per group at d = 0.30.

9.2 Age moderation study — neurodevelopmental window hypothesis (W11) — comparison of 10–14 vs 15–18 age group, ICL profile control, HPA marker measurement through the Trier Social Stress Test [15].

9.3 SIZF psychometric validation — expert panel (CVI ≥ 0.80 [68]), inter-rater reliability (Cohen's κ ≥ 0.70 [69]), criterion validity (r ≥ 0.40 with independent Let Me phase observation as gold standard).

9.4 Escalation Communication Protocol standardisation (PKE) — T0/T3M latency measurement, comparison with group without PKE, identification of optimal content of the referral document.

9.5 Meta-transfer study (W7) — longitudinal, three years, competence measurement beyond the health domain (academic, social), N ≥ 200 per condition at three measurement points.

9.6 Natural experiment on the evidence accumulation paradox (W13) — comparison of educational systems using behavioural indicators vs participation indicators as prevention programme funding criteria.

SUMMARY AND CONCLUSIONS

Main finding. The ineffectiveness of school-based prevention stems not from insufficient scale of intervention, but from the methodological incompleteness of implemented programmes — their structural arrest at the information-transfer phase. The cognitive mechanism of this ineffectiveness is precisely described by Cognitive Load Theory, and its didactic genealogy extends 185 years of scientific documentation of the Tell–Show–Let–Try Me sequence.

Implications for theory. This paper documents — to the authors' knowledge as the first comprehensive synthesis — the convergence of five independent scientific traditions (behaviourism, constructivism, CLT, the clinical tradition, public health standards) into one self-regulating methodological system. Thirteen analytical conclusions (W1–W13), including three falsifiable empirical hypotheses (W6, W11, W13) and two foresight hypotheses (W9, W12), constitute an original contribution to the literature.

Implications for practice. Six systemic recommendations are implementable within existing regulatory frameworks without structural overhaul, and specifically without requiring new legislation. The SIZF Scale provides the first methodological audit instrument for prevention programmes grounded directly on a peer-reviewed theorem. Annex A contains implementation-ready instruments.

Limitations. Narrative review character; absence of empirical MSKOP validation; preliminary SIZF psychometric status; hypothetical character of neurobiological mechanisms (Limitation 6). None of these limitations undermines the value of the analytical synthesis. Explicit identification of one's own paper's limitations is a necessary condition of scientific rigour in accordance with SANRA guidelines [Baethge et al., 2019].

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Ethics statement: This manuscript is a narrative review and does not involve human participants, animal subjects, or identifiable personal data. No ethics approval was required.

ANNEX A — MSKOP IMPLEMENTATION INSTRUMENTS

Form A1 — SIZF Worksheet

Five binary criteria (0/1) with minimum definitions and an observer comment field. Score: 0–2 = structurally ineffective; 3 = partially complete; 4–5 = methodologically complete. Demonstration — Show Me criterion: fulfilled when the programme contains at least

one demonstration lasting at minimum 5 minutes with participant observation possibility. Application — Let Me criterion: fulfilled when the programme contains supervised practice lasting at least 20 minutes with at least one feedback iteration.

Form A2 — Show Me Observation Worksheet

Five behavioural criteria on a 1–5 scale with a field for behavioural examples. Threshold: ≥3/5 in ≥75% of participants.

Form A3 — Escalation Communication Protocol (PKE) Level 1→2

Fields: (a) description of observed signals; (b) duration of signals; (c) actions taken at Level 1; (d) result of T1M monitoring; (e) criterion activating escalation (no improvement at T1M or high-risk signal from crisis recognition module list); (f) signature of peer leader and supervisor.

Form A4 — 4R Debriefing Protocol

Four sections: Reflection (what I noticed), Rules (which principles work), Reinforcement (what I strengthen), Correction (what I change).

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