

Schools' Ability to Adapt in the Modern Educational Context: Navigating the Resilience

Project No. 2025-1-LT01-KA220-SCH-000356077

WP2. Establishing a Self-Assessment Framework

Activity 2.1

Mapping and Analysis of Existing Frameworks of Self-Assessment Tools

A Resource Document for the SAMER School Community

Lead: SMK College of Applied Social Sciences (Lithuania)

Contributing partners:

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Project	Schools' Ability to Adapt in the Modern Educational Context: Navigating the Resilience
Project No.	2025-1-LT01-KA220-SCH-000356077
Work Package	WP2. Establishing a Self-Assessment Framework
Activity	2.1. Mapping and Analysis of Existing Frameworks of Self-Assessment Tools
Lead Organisation	SMK College of Applied Social Sciences (Lithuania)
Contributing Partners	Institute for Research in Environment, Civil Engineering and Energy (North Macedonia) Mediterranean University of Albania (Albania) ProxyLab (Finland) Tallinn University of Technology (Estonia)

About this Document

Schools today operate in conditions of continuous change and yet most have no structured way of understanding how well they are equipped to navigate it. This document maps what various research and practice have found about school resilience and self-assessment: what dimensions of school life matter most under pressure, what good practice looks like, and where consistent gaps remain.

The review drew on 40 existing frameworks, tools and research studies, screened systematically from academic databases and international grey literature. It is produced as part of the SAMER project, an Erasmus+ cooperation partnership (No. 2025-1-LT01-KA220-SCH-000356077) bringing together seven partner organisations from Lithuania, North Macedonia, Albania, Finland and Estonia, but it is designed to be useful to any school community, researcher or policy maker with an interest in how schools build their capacity to adapt.

Chapter 1 explains why it is important for schools to understand their own resilience. **Chapter 2** introduces the key concepts used in the document: resilience, change-sensitivity and self-assessment. **Chapters 3 and 4** explain the methodology of the review and present its findings. **Chapter 5** presents the six dimensions of school resilience supported by the collected evidence. **Chapters 6 and 7** discuss good practices worth building on and the gaps identified in existing approaches. **Chapter 8 presents** the main conclusions.

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1. Why Schools Need to Understand Their Own Resilience

International organisations increasingly treat resilience in education as an ongoing policy concern. In 2021, the OECD published its Framework for Responsiveness and Resilience in Education Policy as part of the Education Policy Outlook 2021. The framework was developed after the COVID-19 pandemic and draws on evidence, analysis and experience from more than 40 education systems. OECD recognizes that learners' resilience does not depend only on individual qualities. It is also shaped by the communities they live in, the schools they attend and the education systems around them. For this reason, the OECD argues that resilience should be strengthened at several levels: the learner level, the broader learning environment and the system level. The OECD also presents resilience as more than an emergency response. It is about the ability of education systems and institutions to adapt to disruption and change, while also dealing with longer-term social and economic shifts. For schools, this makes resilience relevant not only during crises, but also in everyday school life.

The pressures schools face are ongoing, and international evidence shows that many schools are already experiencing them. TALIS 2024, the OECD's international survey of teachers and principals, involved around 280 000 educators across 55 education systems. Its results show that, on average, two out of ten teachers under the age of 30 intend to leave teaching within the next five years, a share that has increased by 3 percentage points since 2018. In Lithuania and Estonia (SAMER partner countries), as well as in neighboring Latvia, the figures are much higher: 50% in Lithuania, 49% in Estonia, and 53% in Latvia (OECD, 2025). PISA 2022 shows a similar pattern. Between 2018 and 2022, the share of students in schools whose principals reported that instruction was hindered by a lack of teaching staff increased from 26% to 47%, on average. The OECD indicates that this is based on principals' perceptions, not an objective measure of teacher shortages (OECD, 2023; OECD, 2025). These challenges overlap with digital transformation, the continuing effects of the pandemic and ongoing education policy reforms. Taken together, they point to the need for schools to develop a sustained capacity to adapt, not only to respond to individual crises.

How schools respond to these pressures varies, and part of the difference lies in how schools and education systems are organised. PISA 2022, the first large-scale international study to collect data on student performance, wellbeing and equity before and after the COVID-19 pandemic, found that some education systems coped better than others during and after pandemic-related school closures. These resilient education systems have a few policies in common: they kept schools open for longer for more students; students encountered fewer obstacles to remote learning; and they worked to strengthen parent-school partnerships, among others (OECD, 2023). COVID-19 was an extreme disruption, and disruptions of that scale are rare. But the capacities that helped schools navigate it - strong leadership communication, collaborative staff culture, trust with families, capacity to adapt quickly - are also useful in more ordinary but continuous pressures schools are facing, such as policy reform, staff turnover, and demographic change. Resilience developed during a crisis does not lose its value when the crisis ends. It becomes part of the broader capacity to maintain quality and equity under pressure. Evidence from this mapping also supports this. Lu, Loeb and Waymack (2025) show that schools and education systems do not all follow the same path after a crisis: some stagnate, some learn and change, and some begin to change but then stall. Their study suggests that organisational learning, stakeholder alignment, partnerships, access to expertise, resource allocation and readiness to adapt all influence whether schools can adjust after disruption. Resilience is therefore not a fixed characteristic. It is a capacity that schools can strengthen when they understand how they currently work and where pressure is greatest.

Schools that understand where they are strong and where they need more support can focus their efforts where it matters most. The reviewed sources suggest that reflection, collaboration and evidence-informed discussion can help schools adapt and improve. What is less clear is how schools can do this in a structured way, involving the whole school community and linking the results to action. This is the gap this review set out to understand.

2. Key Concepts: Resilience, Change-Sensitive Areas and Self-Assessment

This chapter explains the three core concepts that underpin the SAMER project: **school resilience**, **change-sensitive areas**, and **self-assessment**. The chapter elaborates on the following:

- what kinds of change schools face today - the starting point for understanding why resilience matters. The concept cards below introduce school resilience and change-sensitive areas as organisational properties that can be assessed and strengthened;
- what self-assessment is and is not;
- how the three concepts connect into a single argument for why structured self-assessment matters.

Table 1. The Concept of School Resilience in the SAMER Project

School Resilience	
Working definition of Resilience for the SAMER project (<i>synthesised from the review - see definitions table below</i>): School resilience is the capacity of a school, as an institution and as a community, to anticipate, absorb and adapt to change and disruption, while continuing to provide quality education and support to its students, staff and families. A resilient school does not simply survive change; it learns from it, adapts its practice, and emerges with stronger organisational capacity than before. This definition draws primarily on school and organisational-level understandings of resilience. Benoliel & Schechter (2023) are used because they apply organisational resilience to schools as complex organisations; this aligns with Vogus & Sutcliffe's (2007) definition of organisational resilience as the maintenance of positive adjustment under challenging conditions, where the organisation emerges strengthened and more resourceful. Musella et al. (2022) define organisational resilience as a system's capability to maintain its function and structure in the face of internal and external change. Lu, Loeb & Waymack (2025) further connect educational institutional resilience with the capacity for long-term structural adjustment following a crisis.	
What resilient schools do:	
• Adapt to disruption and adjust their organisational practices while maintaining continuity and quality of teaching and learning (Benoliel & Schechter, 2023) • Ensure clear leadership communication with staff, families and the wider school community during uncertainty, and strengthen trust through empathetic, emotionally intelligent leadership (Matthews et al., 2022; Grube, 2024) • Treat disruption as an opportunity for organisational learning, shared reflection and the development of new ways of working (Lu, Loeb & Waymack, 2025) • Use evidence on student wellbeing and mental-health risks to adapt whole-school support and prevention approaches (Balasooriya Lekamge et al., 2025)	• Create a culture of knowledge sharing, collaboration, social interaction and continuous learning (Kondakci et al., 2019) • Enable teachers to adapt their practice when education policy, crisis conditions or student needs change (Wilcox & Lawson, 2018; Da'as, 2023) • Create supportive working conditions, relational trust and collaborative professional communities that help teachers sustain agency, self-efficacy, commitment and professional resilience, while encouraging experimentation with new solutions (Wilcox & Lawson, 2018; Li et al., 2019; Kondakci et al., 2019)
Resilience is the capacity to absorb change, respond to it, and learn from it. Understanding where that capacity is strong and where it needs further development is the first step toward building it deliberately.	

How SAMER Defines School Resilience

The working definition of **RESILIENCE** in the concept card above was synthesised from the definitions found during the scoping review, drawing primarily on the organisational-level definitions from Benoliel & Schechter (2023), Musella et al. (2022) and Lu, Loeb & Waymack (2025) - the sources most directly applicable to a school as an organisation. The process-oriented framing ("learns from it, adapts its practice") is consistent with Mirzaei et al. (2021) and Morote et al. (2020).

The table below presents the resilience definitions found across the 43 reviewed sources. 12 of the 43 sources provide an explicit definition - the majority operationalise resilience through specific constructs or instruments without defining the term. Resilience is, in other words, widely measured but inconsistently defined in the literature. This strengthens the case for SAMER to agree on a shared definition that all partners can work from.

Table 2. Definitions of Resilience

Source	Definition of resilience	Level and context
Benoliel & Schechter (2023)	Organizational resilience is the ability to maintain positive adjustment under challenging conditions, so that the organization emerges strengthened and more resourceful.	Organisational level School system COVID-19 context
Li, Gu & He (2019)	Teacher resilience is the capacity to maintain equilibrium and a sense of commitment, agency and moral purpose in the everyday world in which teachers teach.	Individual level Teachers Policy reform context
Mirzaei et al. (2021)	Resilience is defined as a process of successful adaptability despite threatening conditions.	Organisational level School (all levels) Disaster/emergency context
Morote et al. (2020)	Resilience is a process of effectively negotiating or managing significant stress, supported by individual and environmental assets and resources. As a result, individuals experience positive adaptation in the face of adversity.	Individual & environmental level Secondary school General/SEL context
Musella, Vicard & De Angelis (2022)	Organizational resilience [is] the capability of a system to maintain its function and structure in the face of internal and external changes and to degrade gracefully when it must.	Organisational level School management COVID-19 context
Nakum et al. (2022)¹	Resilience refers to the ability of a system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.	System/community level School and community Disaster risk reduction
Panagiotidou et al. (2025)	Resilience is described as a dynamic process of positive adaptation of individuals when facing adverse situations and risk factors.	Individual level School principals General context
Pillay (2022)	Resilience [is] the collective capacity for youth to direct their way to the psychological, social, cultural and physical resources that they need to sustain their well-being as well as the environment's capacity to provide these resources.	Individual & social-ecological Students COVID-19 context
Potts (2024)	Resilience is “the outcome from negotiations between individuals and their environments for the resources to define themselves as healthy amidst conditions collectively viewed as adverse” (adopting Ungar’s 2004 definition).	Individual & environmental level Secondary & higher education Climate disruption / uncertain-futures context
Shah et al. (2020)	School resilience is characterized as risk management techniques to build a safe environment for students.	Organisational level Elementary schools Natural disaster (flood) context
Shiwaku, Ueda, Oikawa & Shaw (2016)	School disaster resilience is the capacity to restart school education and activities even in alternative ways and to improve community livelihood in an emergency with cooperation of the community.	School and community level Elementary and high school Post-earthquake Japan
Wang, Lin & Lee (2020)	Organizational resilience (OR) refers to the ability to cope with disasters immediately, to learn from disaster experiences, and to improve the organization's ability to respond.	Organisational level

The definitions above reflect how resilience has been understood across different research - from individual coping to organisational adaptation to disaster recovery. What they share is a consistent core: resilience is about capacity, not certainty. No school can prevent disruption. What distinguishes resilient schools is how they are organised to face it - and that is precisely what the SAMER tool is designed to assess.

¹ Included here for its contribution to the review's working definitions of resilience; this source was excluded from the final 40-source analytical set because it offers a conceptual framework rather than an empirical instrument, and its disaster-resilience framing was too narrow for SAMER's whole-school change-sensitivity focus.

Central to that assessment is identifying which parts of a school's life are most vulnerable when change occurs. These are what the SAMER project calls **change-sensitive areas**.

Table 3. Change-Sensitive Areas

Change-Sensitive Areas	
Change-sensitive areas are the specific parts of a school's life that are most affected when change occurs - the domains where disruption is felt most strongly, where quality and wellbeing are most at risk, and where the school's capacity to adapt matters most. Different schools, and different changes, will put pressure on different areas - which is exactly why a structured self-assessment tool is needed.	
Change-sensitive areas in schools:	
• Teaching and learning continuity - can lessons still work effectively when things change? • Student wellbeing and motivation - are students coping, or are stress and disengagement rising? • Staff resilience and workload - are teachers managing change sustainably?	• School leadership and planning - is leadership clear, collaborative, and responsive to change? • Family and community relationships - does the school maintain trust during difficult periods? • Digital and physical infrastructure - does the school have what it needs to adapt practically?
Why identifying sensitive areas matters:	
• Schools cannot improve everything at once • Effort directed at the wrong areas wastes limited resources • Early warning signs are often visible before crises develop • Different schools face different pressures - no single map fits all • Knowing where you are vulnerable is the first step to becoming stronger	
Rather than trying to improve everything at once, knowing which areas are under most pressure right now makes it possible to direct planning and resources where they are genuinely needed.	

What kinds of changes do schools face today?

"Change" covers a wide range of pressures that differ in speed, origin and impact. Based on the contexts represented across reviewed sources, and consistent with current European education policy discussions, five broad types of change can be identified as most relevant to schools today:

Table 4. Changes Faced by Schools

Type of change	What it looks like in schools	Areas it typically affects	Why it tests school resilience
Sudden crisis (pandemic, natural disaster, conflict, public health emergency)	School closes, switches to remote learning, or must relocate overnight; routines might collapse, and staff and students adapt under acute pressure.	Teaching continuity; student wellbeing; staff workload; family communication; physical safety	Speed does not leave much time for planning; digital inequality becomes immediately visible; staff and student stress spike; post-crisis recovery is slow and uneven - schools that lacked adaptive capacity before a crisis take significantly longer to rebuild
Policy and curriculum reform	New curriculum, assessment system, inspection framework or inclusion mandate rolled out from national level, often with short implementation timelines.	Teaching methods; professional identity; leadership priorities; workload; monitoring requirements	Change comes from outside with little consultation; teachers may feel bypassed; implementation timelines rarely match school readiness; resistance can emerge at every level.
Demographic and social change	Growing diversity of student populations; rising socioeconomic inequalities; increasing mental health challenges; newcomer or refugee students	Inclusion practices; staffing mix; resource allocation; community relations; language support; counselling and pastoral care	Requires new expertise quickly; existing school culture may need to shift; support services are often overstretched; equity risks grow if schools lack adaptive capacity.
Digital transformation	New tools, platforms, AI-driven systems or	Teaching practice; assessment design;	Uneven staff digital confidence; equity issues for students without devices or

Type of change	What it looks like in schools	Areas it typically affects	Why it tests school resilience
	expectations for technology use introduced for staff and students; administrative systems replaced	administration; parent communication; digital equity	connectivity; this is a culture change, not just a tool adoption, and it compounds with every other pressure
Environmental and external shocks	Climate-related events (floods, heatwaves, prolonged extreme weather); energy crises; geopolitical instability affecting school communities	School safety planning; student anxiety; community cohesion; continuity of education; budget pressures	Schools rarely have proactive resilience plans for environmental disruption; responses tend to be reactive; climate-related school disruptions are increasing across Europe and are already affecting European countries.

Schools often deal with more than one kind of change at the same time. A policy reform may coincide with post-pandemic recovery, staff changes or shifts in the student population. When pressures overlap, it can be difficult to know where the school is coping well and where more support is needed. A structured self-assessment can help make this clearer.

What self-assessment is - and what it is not

A self-assessment tool is a structured set of questions that helps a school examine its own strengths and challenges from the inside, using the perspectives of the people who experience school life every day: students, teachers and administrators. Unlike external evaluations, self-assessment is designed to be done by and for the school community itself. Self-assessment should not be understood as a form of inspection or external accountability. The table below clarifies the difference, as open, useful results depend on everyone completing it, understanding that the purpose of self-assessment is internal improvement, not external judgement.

Table 5. What Self-Assessment Is and What It Is Not

Question	✓ Self-assessment IS...	✗ Self-assessment IS NOT...
What is the purpose?	A process for the school community to understand itself and identify where to focus improvement efforts	An inspection, a ranking, or a performance judgement carried out by an external body
Who uses the results?	The school itself: principals, teachers, students and families - to plan and act	An external authority that monitors, compares or holds the school accountable based on the scores
What happens if a score is low?	The school identifies where to invest attention and resources - a starting point for action.	The school might be penalised, labelled, or publicly compared unfavourably to others.
Who completes it?	Members of the school community - students, teachers and administrators - each from their own perspective	A single designated person filling in on behalf of everyone else
Is it done once?	Ideally repeated over time so the school can track whether its efforts are working.	A one-off exercise with no follow-up or connection to the school's ongoing development
What does open mean here?	Open answers produce more useful results for the school's own benefit	Honest answers carry risk of negative consequences, so people soften their responses

When self-assessment is understood as a tool for self-knowledge rather than external judgement, it becomes clear why it is a useful mechanism for building school resilience. The next section explains how the three concepts introduced in this chapter fit together into a single practical argument.

How resilience, change-sensitive areas and self-assessment are connected

School resilience, change-sensitive areas and self-assessment are not three separate concepts. In the SAMER project, they are understood as a connected logical sequence.

Schools constantly face **different kinds of change**: the continuing effects of the pandemic, digital transformation, education policy changes, demographic shifts, staff turnover, unexpected external disruptions and others. These changes do not usually affect the whole school in the same way. In some schools, the most visible challenges may relate to student wellbeing or engagement. In others, they may concern staff workload, leadership, relationships with families or infrastructure gaps. These most vulnerable parts of school life are referred to as **change-sensitive areas**.

A school's ability to withstand change, adapt to it and learn from it is what we call **school resilience**. Resilience is not a single standalone quality. It depends on many areas of school life: leadership, teachers' professional capacity, student wellbeing, school culture, cooperation with families and the wider community, crisis readiness and the ability to maintain continuity of teaching and learning.

For a school to **strengthen its resilience** consciously, it first needs to understand where it is currently strong and where it is experiencing the greatest pressure. This is where **self-assessment** is needed. It helps the school community build a shared picture based on the views of school leaders, experiences of teachers, students, and other members of the school community. Such self-assessment makes it possible to see the overall situation of the school, as well as specific areas where change may have the greatest impact.

Therefore, in the SAMER project, school resilience is examined through broader resilience dimensions, while specific change-sensitive areas are identified within them. For example, within the dimension of teacher resilience, sensitive areas may include burnout, workload, or job dissatisfaction. Within the dimension of student wellbeing, they may include increasing stress, declining motivation, or lack of engagement. Within the dimension of leadership, they may include unclear communication or insufficient staff involvement in decision-making.

Thus, self-assessment is not only a process of collecting information. It is the first step towards action. It helps a school identify where effort is most needed, plan improvement actions and later monitor whether those actions are making a difference. The more clearly a school understands its change-sensitive areas, the more purposefully it can strengthen its resilience.

Having established these three concepts - resilience, change-sensitive areas and self-assessment - a natural question follows: what has already been developed and is available in this field? The next chapter explains how this review systematically searched for an answer to that question.

3. How the SAMER review was conducted

The SAMER scoping review was conducted following the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses - Scoping Reviews) guidelines. This international standard provides a 20-item reporting checklist that ensures the review process is transparent, reproducible, and systematically documented (Tricco et al., 2018). The choice of a scoping review reflects the exploratory nature of the task: the goal was to map the breadth of what exists in the field of school resilience and self-assessment.

Review aims and research questions.

The scoping review was guided by three research questions drafted and finalized by partners, which defined what the team was looking for across all sources. The following research questions guided the search strategy, inclusion and exclusion criteria, title and abstract screening and full-text screening, and data charting and analysis. The overarching aim of the review was to centralize existing frameworks, tools, and interventions of school resilience (whether whole school or targeted) in one document for the partners and non-project stakeholders.

Three research questions guiding this review:

RQ1: Which are the existing self-assessment tools measuring school resilience and change sensitivity/adaptability?

RQ2: What are the frameworks supporting resilience in education (school contexts)?

RQ3: What are the strengths and limitations of existing interventions based on assessment frameworks of school resilience?

Search strategy and databases

The search was designed using the Population-Concept-Context (PCC) approach recommended by the Joanna Briggs Institute (JBI) for scoping reviews (Peters et al., 2020). This ensures that search strings are systematic and replicable, not ad hoc.

PCC framework applied in this review

- **Population:** Schools (primary and secondary), including school leaders, teachers, students, and whole-school institutions.
- **Concept:** Organizational resilience · change-sensitivity · adaptability · innovation readiness · crisis response capacity.
- **Context:** Educational settings · crisis and change contexts · organizational assessment and intervention contexts.

Four scientific databases were searched, as well as a separate grey literature database for international policy and strategy documents:

Databases searched

- ✓ **Scientific databases:** ERIC · PubMed · ProQuest · SMK Library - each with standardised PCC-mapped search strings.
- ✓ **Grey literature:** UNESCO · EU Commission · UNICEF · WHO · OECD - institutional sources searched separately.

Citation tracking: 15 seed articles were identified by the team in advance; their reference lists were manually tracked to identify additional relevant sources.

Search results and screening

Using JBI Prisma Scoping Review (ScR) guidelines, the search strings were applied several times until the strings of documents were most relevant to the activity's aims/questions. Each database had its own search string, considering that different databases produce and hold different documents from different fields (i.e., ERIC includes only education-related documents/articles; PUBMED includes health-oriented documents/articles).

A separate search string was also applied on Google Scholar for grey literature, applying BOOLEAN operators such as "AND/OR" and qualifiers such as *.int, *.org, *.eu. While academic literature was deposited onto a joint database, grey literature was stored separately as it was screened using the AACODS quality screening tool for grey literature.

Academic literature was screened through title and abstract screening procedures against the inclusion/exclusion criteria (see Table 6), and only after this was merged with grey literature for full-text screening.

Table 6. Source inclusion and exclusion criteria

What was included and excluded

INCLUDE: English-language documents · published 2015-2026 · open access · clearly describing a self-assessment or resilience tool with a defined framework OR an intervention for enhancing school resilience OR theoretical frameworks with named dimensions · preference for empirical data; theoretical papers accepted.

EXCLUDE: Any review-type document (systematic reviews, literature reviews) · documents not set in school or education contexts · non-English language documents · documents without direct focus on school SA tool creation, resilience intervention assessment, or theoretical conceptualisation of school resilience/change-sensitivity.

After the initial screening, 59 documents remained. These 59 documents were allocated across partners for full-text screening and data extraction onto a shared SAMER-curated template. This distributed workload ensured that no single partner carried disproportionate responsibility. After full-text screening, 43 documents were selected for further data charting. During charting, 3 sources (Zacharis, 2017 - good practices in Greek secondary education; Nakum et al., 2022 - school resilience decision framework for parental school selection; Giordano, De Luca & Sextos, 2020 - structural/seismic assessment of school buildings) were confirmed to fall outside the scope of organisational school resilience self-assessment and were excluded. Therefore, **FULL SCREENING & REVIEW** was conducted on **59** documents. Of these 59 documents, the reviewers **excluded 16 documents**. The PRISMA Chart below showcases the documents that were included for FULL SCREENING & REVIEW; however, **EXTRACTION** occurred only when reviewers decided to include documents after full-text screening. Therefore, **EXTRACTION** was conducted based on **43** documents, and actual charting and analysis was ultimately conducted based on **40** documents. The final analysed set comprises 40 documents, presented in Tables 7 and 8 below.

Data charting and analysis

For each included source, the team extracted data into a shared screening file with 29 standardised fields. These included: extractor identity, inclusion status, title, authors, year, document type, empirical methods, country/region, school level, context, target group (unit of analysis), instrument/tool name, resilience definition, framework name, dimensions identified, key indicators, change-sensitive areas, main results, limitations, and recommendations.

Findings from all 40 sources were then synthesised narratively: dimensions were mapped across sources to identify recurring themes; named instruments were catalogued for good-practice extraction; limitations were coded to identify systematic gaps in the existing literature.

This synthesis produced the 6 proposed dimensions of school resilience (Chapter 5), good practices worth building on in the development of the SAMER self-assessment tool (Chapter 6), and the main gaps in existing approaches (Chapter 7).

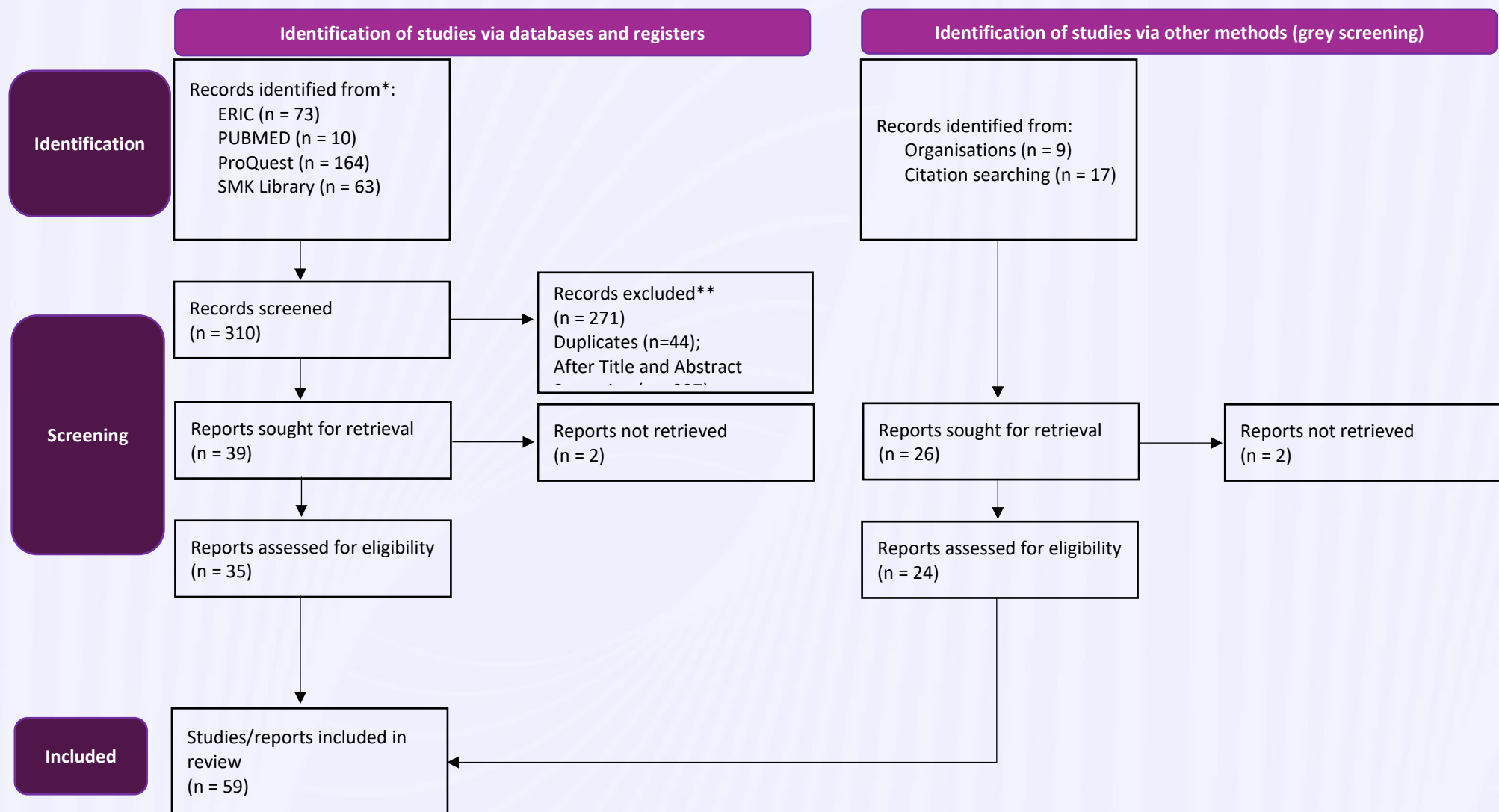


Figure 1. PRISMA 2020 flow diagram of scoping review

Characteristics of the reviewed sources

This subsection briefly summarises the sources included in the review: their geographical coverage, document types, years of publication, contexts examined, target groups and data collection methods used. This helps to clarify the evidence base on which the subsequent findings of this review were developed.

No single region accounted for a majority of the documents reviewed: Asia contributed the largest share (n=14), closely followed by the US (n=12), with the remaining distributed across Europe, Global/International sources, Africa, Australia and Latin America. In particular, grey literature (policy documents, briefs and strategic planning documents) was prone to have a global target group, which cannot be reflected in Figure 2. As mentioned, high production and targeting of such documents were found in **Asia** (n=14 sources spanning 11 distinct countries - Israel and Turkey each represented by multiple sources: United Arab Emirates, Taiwan, Pakistan, Nepal, Japan, Iran, Indonesia, India, China, Turkey, Israel), the **US** (n=12), **Europe** (n=4 sources spanning 7 distinct countries: Greece, Italy, a five-country co-creation study spanning Spain, Italy, Poland, Denmark and Iceland, and Russia), Global/ International sources not tied to one country (n=6), **Australia** (n=2), **Africa** (n=2: South Africa, Ethiopia) and **Latin America** (n=1: Mexico, reflecting the Mexican/Central American context surveyed within one of the US-classified sources). Counted individually, the 40 sources represent 23 distinct countries across 7 regions.



Figure 2. Visualisation of Document Distribution across Countries

Furthermore, documents were also checked and calculated based on their type (i.e., empirical study, measure/tool/instrument, framework, etc.). As can be seen from the figure below, a majority of the documents were empirical studies (n = 29), and fewer were frameworks (n=4), reports (n=2), measure/tools/instruments (n=2), or manuals, guidance notes, or strategies (n=3).



Figure 3. Distribution of Documents based on Type

Moving on, it was particularly interesting to examine the evolution and development of such documents over time. It was expected that COVID-19 would have been the grounds for the publication of studies, guidance notes, and strategies given rising socio-emotional needs. However, document publication has seen its major peaks in 2020 (n=7), 2022 (n=7), and 2025 (n=7).

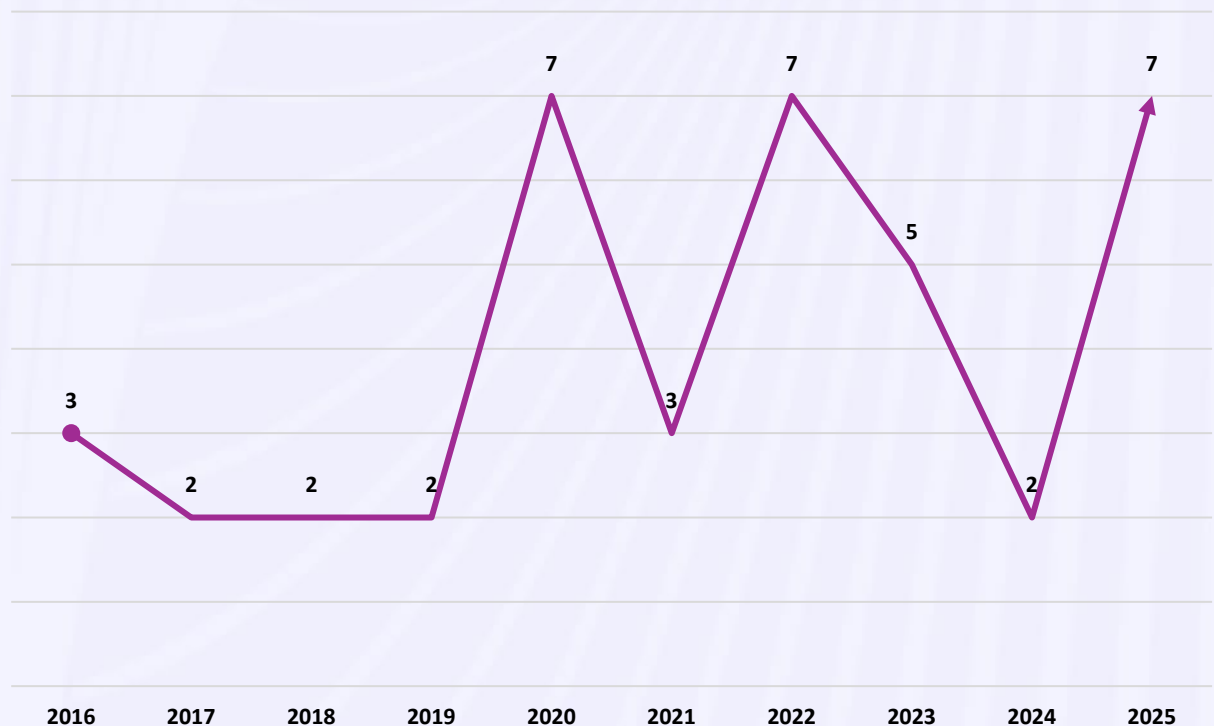


Figure 4. Number of Publications and Peaks Over Time

To ensure an in-depth understanding of how the context of publication is distributed across the years, a Pivot Table cross-check was employed. It appears that COVID-19-related studies have persisted since 2020 and onwards. This can be attributed to late publications of studies and documents compiled after COVID's end. Natural disaster-related documents appear to have been evenly distributed across the years, with a notable spike in 2020.

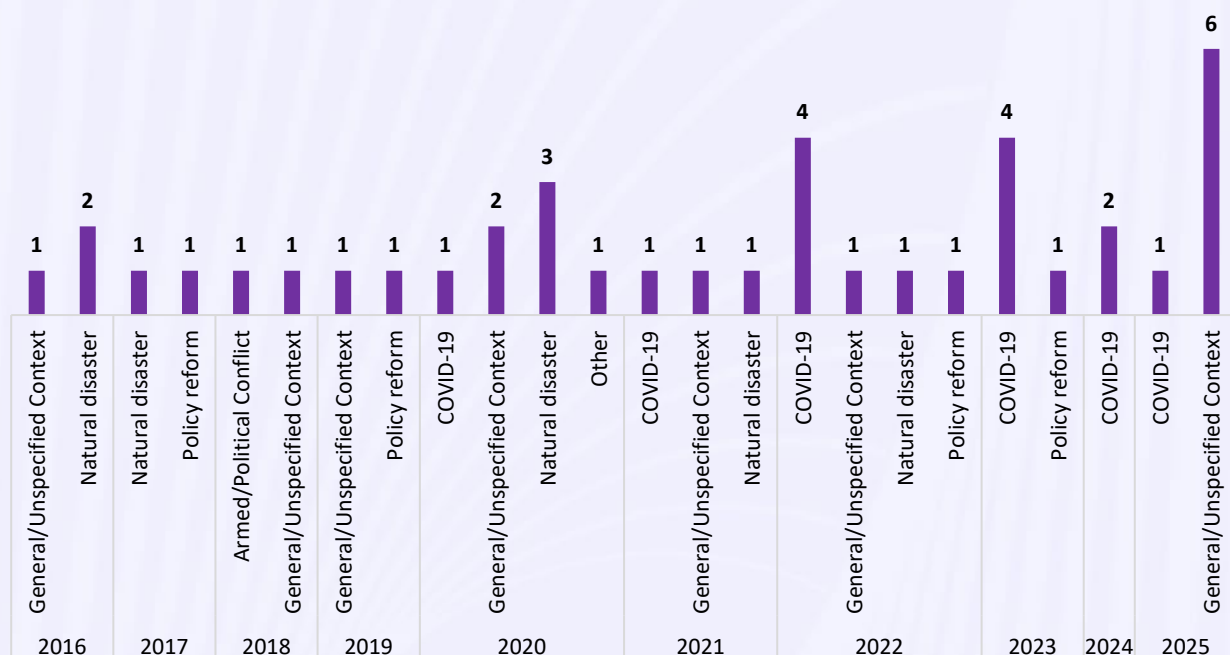


Figure 5. Cross-examination of Documents Over Time and across Contexts

Overall, the reviewed documents show two main directions. Some examine school resilience in relation to specific crises, especially COVID-19 and natural disasters. Others discuss resilience more broadly, without linking it to one particular crisis or disruption.

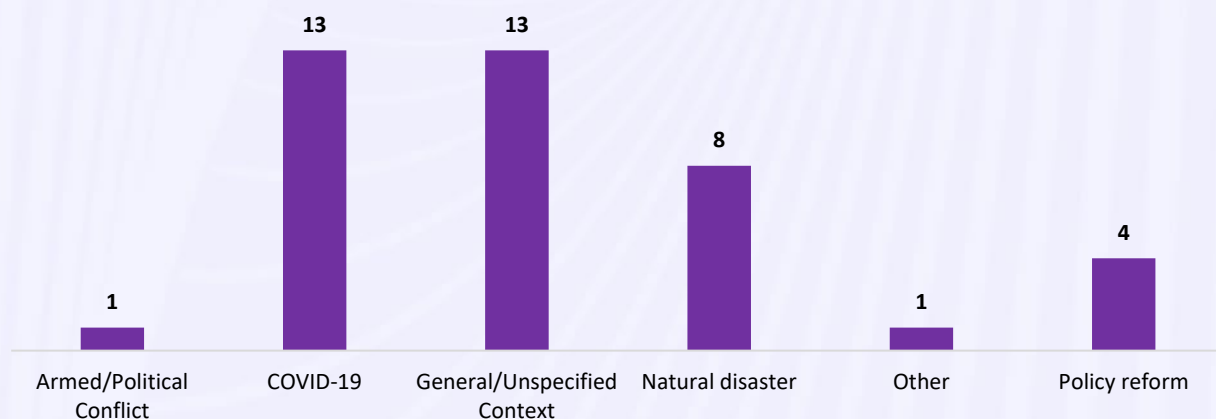


Figure 6. Documents across Contexts

Documents based on their target group were examined as well. A majority of cases had mixed target groups (n=13), whole schools (n=8), teachers (n=8), school principals/managers (n=5), students (n=3), entire district (n=2) or other (n=1). The difference between documents targeting whole schools and mixed groups was that within mixed groups, not all groups within the school were targeted, as it could be expected in whole school approaches.

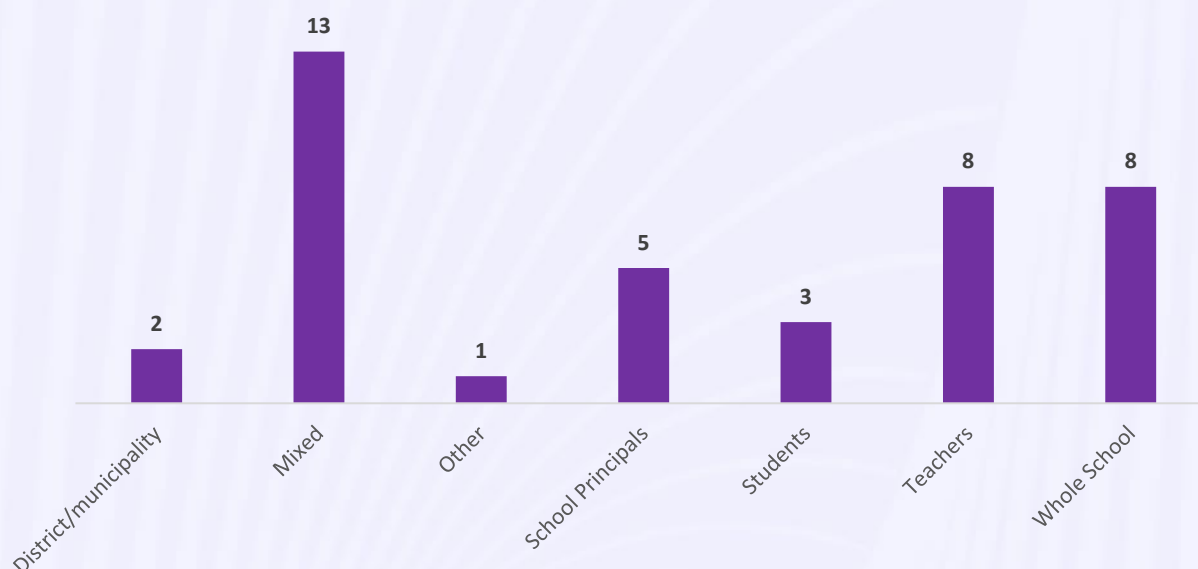


Figure 7. Distribution of Documents based on Target-Group/s

The documents were also examined according to the data collection tools used in empirical studies. Among the empirical studies and data-driven reports or policy briefs, 17 used survey questionnaires, while 6 used in-depth interviews. One study used focus groups as the main method of data collection. The remaining studies (n = 9) used a combination of methods.

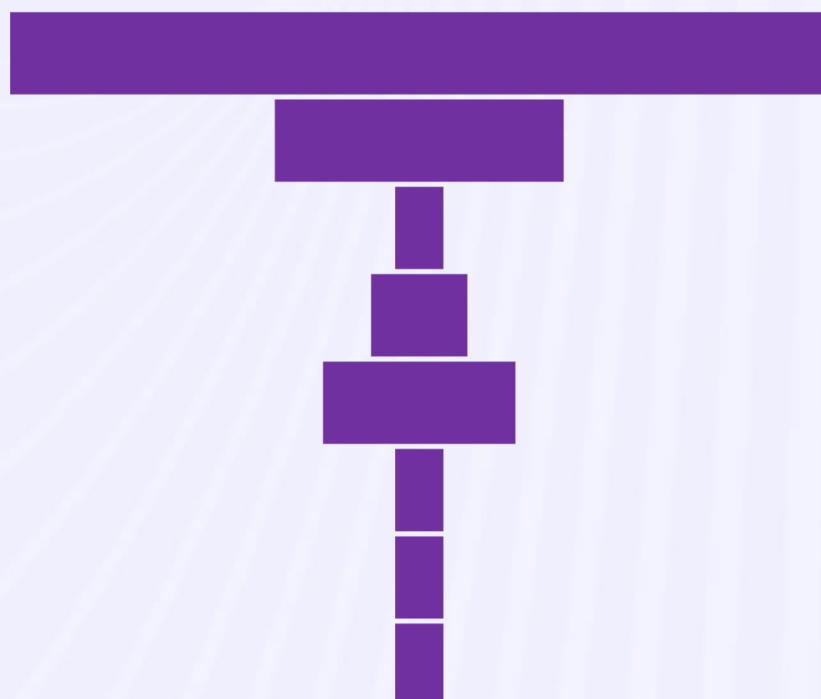
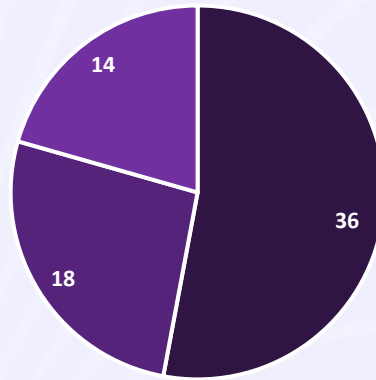


Figure 8. Empirical and Data-Driven Documents by Type of Data Collection Method

Of the documents that were examined, all of them contained either a framework (n=36), a self-assessment tool (n=18), or an intervention (n=14). In many cases, combinations were common, such as a framework preceding the self-assessment tool or a self-assessment tool used for measuring an intervention.



■ Framework ■ Tools ■ Intervention

Figure 9. Presence of Framework/Tool/Intervention

Overall, the reviewed sources are diverse in terms of geography, type, methods, target groups and contexts. This diversity is valuable because it makes it possible to understand school resilience from several perspectives. At the same time, it also highlights the main challenge: existing knowledge is fragmented across different research traditions, contexts and methods. The following chapters therefore examine how this knowledge can be brought together into a more coherent foundation for school resilience and self-assessment.

4. What the Review Found: Frameworks, Tools and Evidence

The search and screening process described above produced 40 included sources. What those sources reveal and equally, what they do not, is the subject of this chapter.

Table 7 provides a structured overview of all 40 included sources. Table 8 presents a content analysis of each source - what dimensions it covers, what instruments or frameworks it uses, and how relevant it is to the SAMER project.

The 40 sources span 23 countries across 7 regions and cover school levels from pre-school to secondary. The majority (29 of 40) are empirical studies based on real data collected in schools.

One clear pattern across the review is that named, validated self-assessment tools for school resilience are rare. Of 40 sources, only a small number provide a published instrument that schools could use directly. Most of the literature offers frameworks, research findings or theoretical models rather than ready-to-use tools. The evidence base for understanding school resilience is substantial - but it has not yet been brought together into a coherent, accessible instrument that any school can use independently.

Five additional sources are included in the tables below. These were not identified through the database search that produced the 40 reviewed sources - they were added separately because they provide useful background context for understanding the dimensions presented in Chapter 5. They include widely used frameworks and foundational texts that are known in the field but fell outside the review's search scope.

Table 7. Overview of Sources Included in the Review

No.	Title	Author	Year	Country / Region	Target Group	Assessment Method / Instrument
1	Evaluation of a nationwide whole-school approach to mental health and wellbeing	Balasoorya Lekamge, Karim, Chen & Ilic	2025	Australia	Students (Secondary 11–19)	CSAS; CHS; Coping Strategies Inventory
2	Smart collaborative ecosystem: leading complex school systems	Benoliel & Schechter	2023	International (conceptual)	Mixed (whole system)	Conceptual framework (no empirical instrument)
3	Organizational Patterns in Schools: People, not Products	Chen-Levi & Buskila	2022	Israel	Mixed (Elementary & Secondary)	Nine-criteria organizational profile framework
4	High School Principal Self-Efficacy and Crisis Response	Crumbley	2021	USA	Principals (High School)	Semi-structured interviews (Bandura framework)
5	Understanding How Charismatic School Leaders Affect Teacher Readiness for Change	Da'as	2023	Israel	Teachers (Elementary)	MLQ Form 5X; Perspective-Taking Scale
6	Surviving and Thriving: Challenges and Coping Strategies of High School Principals	Dhakal	2025	Nepal	Principals (High School)	Semi-structured interviews; thematic analysis
7	Strengthening Resilience of Education in Ethiopia	ECW	2020	Ethiopia	Mixed (Primary)	Strategy document; no single instrument
8	[Book review] Handbook of Mindfulness in Education: Integrating Theory and Research into Practice	Felver	2016	USA	Mixed (K-12 & Higher Ed)	Multi-chapter handbook; no single instrument
9	How Educational Leaders Used Emotional	Grube	2024	USA	District level (K-12)	Case studies; interviews; surveys; document analysis; Wong and Law Emotional Intelligence Scale (WLEIS)

	Intelligence through COVID-19					
10	Resilience of School Systems Following Severe Earthquakes	Hassan, Mahmoud & Ellingwood	2020	USA (virtual)	Whole School (K-12)	Analytical resilience framework (stochastic model)
11	A Story to Move Forward: History of Responding to Education in Crisis	Hastie	2023	USA	Mixed (K-12)	Semi-structured interviews; thematic analysis
12	Beyond Tools and Training: Building Sustainable Learning Environments with AI	Henriksen, Woo & Mishra	2025	International	Whole School (All levels)	Conceptual framework (Five Spaces model)
13	School Principals' Resilience, Perceived Organizational Support, and Thriving	Ibrahim & Al Azzani	2025	UAE	Principals (Cross-school district)	Six-part Likert-scale validated questionnaire
14	System Responses to Crisis: Organizational Perspectives	Jabbar et al.	2023	USA	Mixed (District/ School)	Qualitative report; no single instrument
15	Antecedents of continuous change in educational organizations	Kondakci, Zayim Kurtay & Caliskan	2019	Turkey	Teachers (Primary & Secondary)	7-construct validated survey questionnaires
16	Schools and Disasters: Safety and mental health assessment and interventions	Lai, Esnard, Lowe & Peek	2016	USA	Other (K-12 system)	Review of existing safety & mental health protocols
17	Resilience of Chinese Teachers: Work Conditions and Relational Trust	Li, Gu & He	2019	China	Teachers (Primary & Secondary)	Teacher Resilience Scale; WCS; RTS
18	Processes and Actions to Leading Change at Schools – School Leaders	Lopez	2022	USA	Mixed (K-12)	Processes and Actions to Leading Change at Schools self-report questionnaire for principals
19	Business Not as Usual: Understanding Factors for Organizational Change after a Crisis	Lu, Loeb & Waymack	2025	USA	Mixed (Secondary & Higher Education)	Qualitative interviews; case studies
20	Resign or carry-on? District and principal leadership as drivers of teacher turnover	Matthews, Wayne, Smith, Casper, Wang & Streit	2022	USA	Teachers (K-12)	Single-item adapted survey measures
21	Design and psychometric evaluation of School Resilience Assessment Questionnaire	Mirzaei et al.	2021	Iran	Mixed (Pre-school to High School)	School Resilience Assessment Questionnaire (29-item validated scale)
22	Co-creation of a resilience-based whole-school program in five European countries	Morote et al.	2020	Spain, Italy, Poland, Denmark, Iceland	Mixed (Secondary)	Co-creation surveys (adolescents, families, teachers)

23	Bayesian Network Model supporting School Managers in the Pandemic Era	Musella, Vicard & De Angelis	2022	Italy	Principals (Multiple levels)	Bayesian Network; organizational/methodology profiling
24	Comprehensive school safety policy: A global baseline survey	Paci-Green, Varchetta, McFarlane et al.	2020	68 countries	District / national level	CSS baseline policy survey instrument
25	Mediating Role of Resilience and Self-Efficacy in Emotional Intelligence	Panagiotidou, Chatzigeorgiou, Christou & Roussakis	2025	Greece	School Principals (Primary)	Validated Likert-scale survey (EI, SE, resilience)
26	Resilience to COVID-19: Lessons for school psychologists serving Black children	Pillay	2022	South Africa	Students (Primary & Secondary)	Child and Youth Resilience Measure (CYRM-28)
27	Towards an understanding of resilience and experiential learning for young people	Potts	2024	Australia	Mixed (Secondary & Higher Ed)	Multi-phase pilot; interviews
28	Assessing school disaster preparedness using a comprehensive school safety framework	Sakurai, Bisri, Oktari & Murayama	2017	Indonesia	Whole School (Elementary)	School safety framework indicators checklist
29	Measuring education sector resilience in flood disasters in Pakistan	Shah, Gong, Ali et al.	2020	Pakistan	Whole School (Elementary)	School resilience index (Hyogo Framework indicators)
30	School disaster resilience assessment after East Japan earthquake and tsunami	Shiwaku, Ueda, Oikawa & Shaw	2016	Japan	Whole School (Elementary & High)	School Disaster Resilience Assessment (SDRA)
31	Me perdía en la escuela: Latino newcomer youth in the U.S. school system	Szlyk, Cardoso, Lane & Evans	2020	USA / Mexico / Central America	Students	Focus groups; semi-structured interviews
32	Strengthening Responsiveness and Resilience of TVET Institutions Post-COVID	UNESCO-UNEVOC	2021	Global	Whole School (VET)	Report; peer learning; no formal tool
33	Education in a Post-COVID World: Towards a RAPID Transformation	UNICEF	2023	Global	Mixed (Primary & Secondary)	Policy framework (no assessment instrument)
34	Framework for Reopening Schools	UNICEF	2020	Global	Whole School	Policy framework (no assessment instrument)
35	Factors shaping educational organizational change: Lewin's model analysis	Vasel	2025	Israel	Teachers (Elementary)	Semi-structured interviews; focus groups
36	Bayesian networks for assessment of disruption to school	Vatterli, D'Ayala & Gehl	2022	India (Guwahati)	Whole School	Bayesian Network (BN) probabilistic model

	systems under hazards					
37	Do Resilient Schools Exist? Chances for Quality Education for Dysfunctional Families	Vinogradov, Shatunova & Sheymardanov	2022	International	Mixed (High School)	Database analysis; interviews; survey
38	Evaluation Framework for Disaster Management under Adaptive Organizational Change	Wang, Lin & Lee	2020	Taiwan	Teachers (Primary & Junior High)	Choice Experiment (CE) custom questionnaire
39	Teachers' agency, efficacy, engagement, and emotional resilience during policy reform	Wilcox & Lawson	2018	USA	Teachers (Primary & Secondary)	Semi-structured focus group protocol
40	School Principals as Constructivist Leaders and Organizational Change	Yildirim & Kaya	2019	Turkey	Teachers (Primary, Middle, High)	Qualitative interviews

ADDITIONAL SOURCES included for completeness and awareness

A1	Organizing Schools for Improvement: Lessons from Chicago - 5 Essential Supports framework	Bryk, Sebring, Allensworth, Luppescu & Easton	2010	USA (Chicago)	Whole School (Elementary)	Longitudinal survey data (400+ schools, 7 years); composite school-level indicators for each Essential Support.
A2	CASEL SEL Framework - Fundamentals of Social and Emotional Learning	CASEL (Collaborative for Academic, Social, and Emotional Learning)	2020	USA (international application)	Students, teachers, school community	Framework document with implementation guides; school climate surveys; self-assessment tools aligned to 5 competencies.
A3	TALIS 2018 Results (Volume I): Teachers and School Leaders as Lifelong Learners	OECD	2019	48 countries (international)	Teachers & School Principals (Lower Secondary)	Large-scale validated survey (48 countries); Likert-scale questionnaires covering working conditions, professional development, self-efficacy, collaboration, job satisfaction.
A4	Leading in a Culture of Change (1st ed. 2001; 2nd ed. 2020)	Fullan, M.	2001 / 2020	International (Canada/ global application)	School & system leaders (all levels)	Theoretical-conceptual framework; 5 core change competencies. Not an assessment instrument.
A5	Ordinary Magic: Resilience Processes in Development	Masten, A. S.	2001	USA / international	Children and youth (individual through community levels)	Theoretical resilience framework; defines resilience as 'ordinary magic'; multi-level model (neurobiological to community).

Table 7 provides the bibliographic overview - who conducted the research, where, when and in what context. Table 8 goes deeper into the content of each source: what dimensions of school resilience it addresses, whether it includes a usable instrument, and how directly relevant it is to the SAMER project's focus on change-sensitivity. In this table, relevance ratings (HIGH / MEDIUM / LOW) indicate how useful each source is for understanding school resilience in the European school context.

HIGH-rated sources address whole-school organisational capacity and are transferable across national settings, and, where possible, include concrete instruments or assessment approaches.

MEDIUM-rated sources contribute evidence on specific dimensions but are more limited in scope, context, or transferability.

LOW-rated sources are included for completeness but are either too context-specific, too narrow in focus, or too distant from the European school setting.

Table 8. Content Analysis of the Reviewed Sources and Their Relevance to the SAMER Project.

No.	Title / Framework	Key Dimensions / Areas Covered	Key contributions	Limitations / Gaps	Relevance to school resilience practice
1	Matthews et al. (2022) Principal leadership & teacher turnover	District decision-making quality; Safety communication; Principal warmth/ empathy; Authoritarian vs supportive leadership	Strong link between leadership behaviour and staff stability during crisis; directly relevant to change-sensitive leadership dimension	Single-item measures; leadership behaviours assessed only at baseline (not over time) and via self-report rather than independent rating; authors note the US context but argue underlying principles likely generalise globally	HIGH. Leadership and safety communication under crisis map directly to SAMER leadership dimension
2	Szlyk et al. (2020) Latino newcomer youth in US schools	Student social and cultural capital; Newcomer integration challenges; Systemic barriers	Student-centered; surfaces equity dimension from student voice; cross-cultural entry point	No quantitative data; non-European context	MEDIUM. Equity and inclusion framing relevant
3	Benoliel & Schechter (2023) Smart collaborative ecosystem	Digital capital; Economic capital; Social capital; Cultural capital; Symbolic capital; Boundary-spanning leadership	Systemic view of school resilience; explicitly COVID-responsive; emphasises collaborative structures	Conceptual only; not empirically tested; does not provide self-assessment instrument	HIGH. Multi-capital ecosystem model directly informs SAMER's whole-school framing and dimensions
4	Wang, Lin & Lee (2020) Disaster management in schools (Taiwan)	Awareness (environmental risk perception); Adaptation (learning and reorganization); Transformation (coping and adaptive response to disaster); Community Capital (cooperation with community disaster-prevention organizations)	Custom validated questionnaire; faculty perspective on disaster preferences; Asian context	Single geographic area; faculty only (no student or community voice); natural disaster focus limits transferability	MEDIUM. Adaptation/ coping/ learning pathway transferable; disaster preparedness indicators inform crisis dimension
5	Lu, Loeb & Waymack (2025) Organizational change after crisis	Stagnation without learning; Change through learning; Stagnation after initial learning (three post-crisis pathways)	Identifies distinct organizational trajectories after disruption; useful for understanding why some schools bounce forward, others stagnate	No formal assessment tool; qualitative; USA K-12 school district context	HIGH. Pathway model directly relevant to SAMER's change-sensitivity framing; informs what distinguishes resilient from non-resilient responses
6	Da'as (2023) Charismatic leadership and teacher readiness for change	Charismatic leadership; Perspective-taking capacity; Readiness for change	Uses validated MLQ instrument; establishes leadership readiness link empirically; elementary school context	Israel only; cross-sectional; limited generalisability; does not address structural or student dimensions	HIGH. Readiness for change construct and leadership teacher trust link directly inform leadership and staff resilience dimensions

No.	Title / Framework	Key Dimensions / Areas Covered	Key contributions	Limitations / Gaps	Relevance to school resilience practice
7	Felver (2016). Review of the book Handbook of Mindfulness in Education: Integrating Theory and Research into Practice, by K. A. Schonert-Reichl & R. W. Roeser.	Mindfulness-based interventions (MBIs); Teacher stress and burnout; Student self-regulation; Organizational/ institutional change and leadership	Comprehensive multi-level review of evidence; addresses teacher wellbeing as systemic issue	No single quantitative instrument; handbook format; dated (2016); no change-sensitivity framing	MEDIUM. Teacher stress, burnout and self-regulation indicators inform staff resilience dimension; MBI evidence base relevant to wellbeing dimension
8	Potts (2024) Resilience and experiential learning for youth (Australia)	Self-awareness as meta-competency; Relational skills; Future-orientation; Experiential resilience	Post-pandemic Australian context; youth voice; identifies specific competencies amenable to school-based intervention	Secondary/higher education focus; no formal validated tool; qualitative design; single national context	MEDIUM. Student self-awareness and relational resilience indicators inform student wellbeing dimension; experiential learning approach relevant to tool design
9	Balasooriya Lekamge et al. (2025) Nationwide whole-school mental health	Life satisfaction; hope; coping; anxiety; depression	Large sample (over 40.000 students); longitudinal implementation data; validated instruments (CSAS, CHS); five wellbeing domains	Non-randomised; no pre-test; single time-point; Australia only; wellbeing focus without change-sensitivity angle	HIGH. Validated wellbeing instruments and five-domain outcome framework directly inform student wellbeing indicators; implementation evidence supports whole-school approach
10	Yildirim & Kaya (2019) Constructivist school principals and organizational change	Learning and teaching, sharing leadership, communication and interaction, a safe school environment, encouragement, and strategic planning	Multi-school sample in Turkey; identifies principal behaviours that sustain organizational change	Qualitative only; single regional context; no validated quantitative tool; dated (2019)	HIGH. Constructivist leadership model and change management behaviours map directly to leadership dimension; communication and collaboration indicators applicable
11	Hastie (2023) Adaptive leadership through COVID-19 (BOCES)	Organizational culture (Schein model); mission-driven leadership; staff prioritization; technology as resilience infrastructure	Real-world case study of adaptive response; Schein's three-level culture model provides analytical depth; useful design insights	Single organization; researcher positionality (insider); limited transferability; USA only	HIGH. Mission-driven adaptive leadership, organizational culture, and technology-as-resilience findings directly inform leadership and digital dimensions
12	Vasel (2025) Implementing educational change: Lewin's model	Lewin's unfreezing-changing-refreezing stages; teacher beliefs as barrier; cultural conservatism; workload as stressor	Identifies specific change-phase barriers at micro (teacher) and meso (school) levels; practically grounded	Single school; small qualitative sample; no post-refreezing follow-up; no resilience instrument	HIGH. Lewin's change stages and micro-level inhibitors (beliefs, workload, cultural conservatism) are key change-sensitive indicators for the SAMER leadership and staff dimensions
13	Panagiotidou et al. (2025) Resilience, self-efficacy and formative assessment (Greece)	Emotional intelligence; self-efficacy; resilience; formative assessment practice	Validated survey; principal perspective; establishes resilience–practice link empirically; Greek context	Self-report only; personal factors focus without contextual /organizational factors; primary level only	HIGH. Emotional intelligence and self-efficacy as principal resilience factors directly inform SAMER leadership dimension; Greek context relevant to partner network

No.	Title / Framework	Key Dimensions / Areas Covered	Key contributions	Limitations / Gaps	Relevance to school resilience practice
14	Kondakci et al. (2019) Continuous change in educational organizations (Turkey)	Participatory management; trust in colleagues; trust in principal; perceived workload; knowledge sharing; job satisfaction	Seven validated constructs; predictive model of continuous change behaviour; identifies trust and knowledge sharing as key levers	Cross-sectional; Turkey only; public schools only; cannot establish causation	HIGH. Trust, participatory management, and knowledge-sharing constructs map directly to staff resilience and school culture dimensions; relational trust indicators for tool design
15	Vinogradov, Shatunova & Sheymardanov (2022) Do resilient schools exist?	School ranking vs resilience; individual vs organizational resilience; student competency development	Challenges conventional school quality metrics; proposes competency-based resilience measurement	No practical examples or comparisons; no concrete recommendations; vague methodology	MEDIUM. Conceptual challenge to rankings-as-resilience useful for framing SAMER's anti-ranking positioning; student competency as resilience outcome informs student dimension
16	Henriksen, Woo & Mishra (2025) Sustainable learning environments with AI	Five Spaces (artifacts; processes; experiences; systems; cultures); adaptive capacity for AI integration	Systemic ecological framing; covers whole-school culture, not just technology; forward-looking	No empirical data; illustrative examples only; AI-specific scope may limit direct transfer	MEDIUM. Five Spaces ecological model informs SAMER's whole-school framing; digital adaptation and organizational culture dimensions relevant.
17	Dhakal (2025) Challenges and coping strategies of high school principals (Nepal)	Sociocultural/ gender biases; teacher resistance to change; resource scarcity as change barrier; principal coping	Unique Global South perspective; surfaces structural challenges not visible in Western tools	Small sample (3 principals); Nepal only; qualitative; limited generalisability	MEDIUM. Sociocultural resistance to change and resource scarcity as change-sensitive areas add cross-national dimension to SAMER; informs equity indicators.
18	Lopez (2022) Processes and Actions to Leading Change at Schools	Create urgency; build guiding coalition; develop and communicate vision; empower broad-based action; generate short-term wins; sustain acceleration; anchor change in culture	One of the few named SA tools for school leadership during change; based on Kotter's change model; self-report by principals. 2 instruments (Processes and Actions to Leading Change at Schools and OSLEB) applied: Processes and Actions to Leading Change at Schools principal self-report is paired with OSLEB, completed independently by school staff and parents using the same change-leadership dimensions to allow self-report and observer-report to be compared.	COVID-period USA context; Processes and Actions to Leading Change at Schools validity and reliability strategies are described narratively, but no numeric reliability coefficient is reported, and OSLEB's own psychometric properties are not separately documented.	HIGH. Processes and Actions to Leading Change at Schools is the closest existing tool to SAMER's change-leadership focus; its 7 dimensions directly inform SAMER's leadership dimension and offer item-level inspiration.

No.	Title / Framework	Key Dimensions / Areas Covered	Key contributions	Limitations / Gaps	Relevance to school resilience practice
19	Crumbly (2021) Principal self-efficacy and crisis response	Mastery experiences; vicarious experiences; verbal persuasion; physiological/ emotional states (Bandura model)	Applies Bandura's validated self-efficacy framework to principal crisis response; practical CRP (Crisis Response Plan) insights	Small purposive sample (12 principals); single urban district; qualitative; generalisability limited	HIGH. Self-efficacy sources during crisis map to leadership resilience indicators; CRP insights inform leadership dimension; provides item-level language for crisis readiness
20	Grube (2024) Emotional intelligence and COVID-19 leadership (New England)	Emotional intelligence applied to leadership; basic human needs prioritisation during crisis; staff and community care	Multi-case study; rural, suburban and urban districts; emotional intelligence during real COVID crisis; used the validated Wong & Law Emotional Intelligence Scale (WLEIS)	Limited response numbers; potential sample bias; USA only	HIGH. EI leadership behaviours (staff care, community trust maintenance) inform leadership and community engagement dimensions; complements Da'as and Panagiotidou findings.
21	Morote et al. (2020) Cross-European resilience whole-school programme	Coping; efficacy; social and emotional learning; mindfulness; co-creation across five countries	First cross-European whole-school resilience programme; multi-stakeholder co-creation (students, families, teachers); 5 countries	Accidental sampling; expert-sampled groups; limited representativeness; conceptual framing only at this stage	HIGH. Cross-national co-creation methodology and multi-stakeholder approach directly model SAMER's design philosophy; SEL and coping dimensions inform student wellbeing
22	Wilcox & Lawson (2018) Teacher agency, efficacy and resilience during policy reform	Teacher agency (choice, voice, discretion); engagement with reform; self-efficacy; emotional resilience	Qualitative depth on how teachers navigate policy change; identifies 'odds-beating' school characteristics	Qualitative case study; USA only; purposive over-representation of high-performing schools	HIGH. Teacher agency and emotional resilience during policy reform map directly to staff resilience dimension; 'odds-beating' characteristics inform what SAMER should measure
23	Li, Gu & He (2019) Chinese teacher resilience: work conditions and relational trust	Vocational commitment; self-efficacy; professional optimism/job fulfillment (Teacher Resilience Scale)	Teacher Resilience Scale is validated and published; three-factor structure; includes relational trust and work conditions.	Cross-sectional; Beijing only; limited contextual variables; no principal or student perspective	HIGH. Teacher Resilience Scale provides a directly adoptable or adaptable scale for SAMER's staff resilience dimension; relational trust and work conditions indicators are actionable.
24	Pillay (2022) Resilience and COVID-19 for black South African youth	Individual, caregiver, and contextual resilience (CYRM-28); basic needs; caregiving; social connectedness; age/gender differences	Validated CYRM-28 instrument; student perspective; intersectional (age, gender, school type)	Single racial group focus; not representative of all South Africa; not directly applicable to European context	MEDIUM. CYRM-28 provides validated student-level resilience indicators; social connectedness and basic needs dimensions inform SAMER student wellbeing indicators
25	Ibrahim & Al Azzani (2025) Principal	Internal resilience (coping, self-esteem, cognitive resources); external resilience	Six-part validated Likert-scale questionnaire; principal	Small sample (84 principals); single district (Al Ain, UAE); cross-sectional; principal only	HIGH. Validated multi-factor principal resilience instrument; internal/external resilience

No.	Title / Framework	Key Dimensions / Areas Covered	Key contributions	Limitations / Gaps	Relevance to school resilience practice
	resilience, organizational support and thriving	(organizational support, environment); thriving; job satisfaction	perspective; quantitative; UAE context.		distinction directly applicable to SAMER leadership dimension
26	Jabbar et al. (2023) System responses to crisis: organizational perspectives	School funding type; policy levers; crisis management; marginalized communities; basic needs provision	Multi-site USA; surfaces equity and resource dimensions of crisis response; policy-level view.	Limited to few states/districts; early epidemic only; no formal assessment instrument	MEDIUM. Equity in crisis response and basic needs provision inform inclusion dimension; policy context analysis relevant to SAMER's cross-national scope.
27	Chen-Levi & Buskila (2022) Organizational patterns in schools (Israel)	Staff organisation complexity; delegation of authority; curriculum flexibility; teacher specialisation; school innovation capacity	Nine-criteria organisational profile tool; Israeli elementary and secondary; mixed-methods	No published name or formal validation for the nine-criteria tool; Israel only; no student perspective	HIGH. Nine-criteria organisational profile framework is one of few school-level SA tools for organisational structure; curriculum flexibility and delegation indicators directly relevant.
28	UNICEF (2023) Education in a post-COVID world (RAPID framework)	School dropout prevention; education quality; teacher working conditions; student resilience; continuity of education	Global authoritative policy framework; post-COVID framing; covers multiple school levels	Policy document only; no assessment instrument; global generality limits specificity	HIGH. RAPID framework dimensions align well with SAMER; policy legitimacy strengthens SAMER's EU/international anchoring; student and teacher dimensions confirmed
29	UNICEF (2020) Framework for reopening schools	Policy; financing; safe operations; learning continuity; reaching the most marginalised; wellbeing/protection	Authoritative global framework; crisis context; multi-domain whole-school view	Policy document only; no assessment instrument; crisis/reopening context limits general applicability	MEDIUM. Six reopening domains confirm SAMER's dimension choices; marginalisation and wellbeing emphasis supports inclusion and student dimensions.
30	ECW (2020) Strengthening resilience of education in Ethiopia	Equitable access to safe/gender-sensitive learning; education quality and relevance; retention and transition; institutional/community capacity for crisis-sensitive education.	Context-specific strategy for education in protracted crisis; equity and protection framing	Single-country focus; protracted crisis context limits direct transfer; no formal assessment instrument	LOW. Context too specific (protracted crisis / Ethiopia) for direct SAMER transfer; equity and protection framing has indirect relevance to inclusion dimension
31	UNESCO-UNEVOC (2021) TVET resilience post-COVID	Skills for employability; digital capacities of staff; peer learning for institutional resilience	Global UNESCO authority; peer learning as resilience mechanism; digital staff capacity focus	VET-sector specific; not directly applicable to general school (primary/secondary) context.	MEDIUM. Digital staff capacity and peer learning as resilience mechanisms inform SAMER's digital and staff dimensions; UNESCO framing adds policy legitimacy.
32	Mirzaei et al. (2021) School Resilience	Functional resilience; Architecture; Education process	One of very few fully validated, named school resilience tools;	Persian/Iranian validation only; disaster/emergency focus; physical	MEDIUM. Disaster framing reduces direct dimension transfer.

No.	Title / Framework	Key Dimensions / Areas Covered	Key contributions	Limitations / Gaps	Relevance to school resilience practice
	Assessment Questionnaire (Iran)	resilience; Safety procedures; Equipment readiness	mixed-methods development (EFA, CVR/CVI); 29-item final scale	infrastructure emphasis limits transfer; staff respondents only	
33	Shiwaku et al. (2016) School Disaster Resilience Assessment (SDRA, Japan)	Physical conditions; Human resources; Institutional issues; External relationships; Natural conditions	Named and applied SDRA tool; post-earthquake Japan; five-factor structure; whole-school assessment	Disaster-specific; physical focus; Japan only; does not address organizational change-sensitivity in normal conditions	MEDIUM. SDRA's human resources and institutional issues dimensions are transferable; five-factor structure inspires SAMER's multi-domain framing; disaster limitation noted
34	Vatteri, D'Ayala & Gehl (2022) Bayesian networks for school disruption assessment	Physical functionality loss; accessibility and use loss; social vulnerability	Innovative probabilistic modelling approach; links physical damage to social and educational outcomes	Engineering / structural focus; Bayesian model not usable by school communities; natural disaster context only	LOW. Physical modelling approach not applicable to SAMER's self-assessment design; social vulnerability concept has indirect relevance to inclusion dimension.
35	Lai, Esnard, Lowe & Peek (2016) Schools and disasters: safety and mental health	Physical facility safety; disaster management protocols; risk reduction and resilience education (the paper's three established pillars); mental health assessment and intervention (introduced by the authors as a proposed fourth pillar)	Bridges safety and mental health dimensions; K-12 focus; identifies gaps in post-disaster school mental health	Post-disaster response focus; no formal tool; does not address everyday organizational change-sensitivity	MEDIUM. Mental health assessment after crisis informs student wellbeing dimension; gap identification (post-disaster only) supports SAMER's everyday-change innovation claim.
36	Musella, Vicard & De Angelis (2022) Bayesian model for school managers (COVID, Italy)	Internal communication; priority redesign; school-family communication; organizational functioning	Bayesian decision-support approach; Italian context (partner region); principal perspective; COVID organisational data	Principal viewpoint only; single perspective; technical model not directly usable by school community	MEDIUM. School-family communication and priority redesign under COVID map to SAMER's leadership and community dimensions; Italian context adds European relevance
37	Shah et al. (2020) Education sector resilience index in flood disasters (Pakistan)	Physical school conditions; Human resources; Institutional governance; External community relationships	Multi-factor resilience index; Hyogo Framework integration; 20 elementary schools (4 flood-vulnerable districts); institutional and external relationship dimensions	Flood/disaster specific; Pakistan elementary only; physical emphasis limits transfer	MEDIUM. Institutional issues and external relationships dimensions transferable; index construction methodology informs SAMER's indicator development process.
38	Hassan, Mahmoud & Ellingwood (2020) School system resilience after earthquakes	Quantity index (enrolment); Quality index (educational quality); School administration model	Stochastic modelling of recovery trajectory; identifies staff availability and infrastructure as critical sensitivity factors	Virtual community (not real-world data); earthquake specific; engineering modelling not applicable to community-based SA	LOW. Modelling approach inapplicable; staff availability as critical sensitivity factor has indirect relevance to staff resilience dimension

No.	Title / Framework	Key Dimensions / Areas Covered	Key contributions	Limitations / Gaps	Relevance to school resilience practice
39	Paci-Green et al. (2020) Comprehensive school safety: global baseline survey (68 countries)	Safe Learning Facilities; School Disaster Management; Risk Reduction and Resilience Education	68-country global sample; self-report by national authorities; policy adoption patterns; multi-regional	National-level self-report; risk of social desirability; disaster management focus; school-level data absent	MEDIUM. Large cross-national dataset confirms policy gaps globally; disaster management dimension transferable; cross-national methodology relevant to SAMER's design.
40	Sakurai, Bisri, Oktari & Murayama (2017) School disaster preparedness (Indonesia)	Safe school facilities; school disaster management; disaster risk reduction education	Application of comprehensive school safety framework in Southeast Asian context; identifies sustainability and ownership issues	Single-city case study; elementary only; disaster preparedness focus; no transfer to everyday organizational change	LOW. Disaster preparedness context limits transfer
ADDITIONAL SOURCES					
A1	Bryk, Sebring, Allensworth et al. (2010) 5 Essential Supports (Chicago)	School leadership; Professional capacity of faculty & staff; Student-centred learning climate; Parent–community–school ties; Instructional guidance	Most rigorously validated whole-school improvement framework in existence; ~475 Chicago elementary schools, with core comparative analysis of 100 improving vs. 100 non-improving schools over 7 years; five supports mapped and measured at school level; widely cited internationally; open-access survey items available	USA/urban elementary school context; 2010 publication date; not framed around “resilience” or “change-sensitivity” specifically; not cross-national	HIGH. 5 school-level survey items are adaptable; longitudinal evidence base is strongest available for whole-school improvement. The 5 Essential Supports framework (instructional guidance, professional capacity, student-centered learning climate, family and community ties, school leadership) is a robust multi-domain school organisational model in the literature.
A2	CASEL (2020) SEL Framework	Self-awareness; Self-management; Social awareness; Relationship skills; Responsible decision-making across four settings: classrooms, schools, families, communities	Most widely used international SEL framework; evidence from 1M+ students across studies; school-family-community integration; equity lens built in; free open-access resources referenced by Morote et al. (2020) and Balasooriya Lekamge et al. (2025)	Individual-level competency focus rather than organisational change-sensitivity; not primarily a self-assessment tool for schools as organisations; US-originated though internationally applied.	HIGH. The CASEL SEL framework (self-awareness, self-management, social awareness, relationship skills, responsible decision-making) is the most widely used student social-emotional competency model globally. Provides the foundational SEL vocabulary for student well-being indicators and connects to the Morote et al. (2020) co-creation approach already in the review.
A3	OECD (2019) TALIS 2018 Results, Volume I	Teaching practices; Professional development (CPD); School climate; Teacher self-efficacy; Collaborative culture; Job satisfaction; Feedback and	Largest international teacher survey (48 countries/economies); validated cross-national scales; covers CPD,	Survey of working conditions, not resilience or change tool per se; snapshot (not longitudinal); lower secondary focus (ISCED 2); 2018 data	HIGH. Provides cross-national validated benchmarks for Staff Resilience; CPD access, collaborative culture, and job satisfaction scales directly

No.	Title / Framework	Key Dimensions / Areas Covered	Key contributions	Limitations / Gaps	Relevance to school resilience practice
		appraisal; School leadership practices	collaboration, workload, self-efficacy; data freely downloadable from OECD	predates post-COVID changes measured in TALIS 2024	adoptable; strongest available international comparator for staff dimension.
A4	Fullan (2001/2020) Leading in a Culture of Change	Moral purpose; Understanding the change process; Building relationships; Creating and sharing knowledge; Coherence-making - 5 core change competencies for educational leaders	Most widely cited educational change leadership framework globally; explicitly addresses how leaders function under conditions of continuous, complex change; 2nd ed. (2020) updated for post-digital context; directly cited in several of the 43 reviewed studies' theoretical sections.	Not an assessment instrument; theoretical/ conceptual; book format without validated survey scales; no psychometric data; 2001 origin (though 2nd ed. 2020 is current)	HIGH. Fullan's five components of effective leadership in change contexts (moral purpose, understanding change, building relationships, knowledge creation/sharing, coherence making) provide a practitioner-facing conceptual vocabulary. Widely used in European school leadership development.
A5	Masten (2001) Ordinary Magic: Resilience Processes in Development	Definition of resilience as "ordinary magic"; multi-level adaptive systems (neurobiological to community); risk and protective factors; individual, family, school and community resilience levels	Foundational resilience theory article (3000+ citations); establishes the multi-level model of resilience that all subsequent school resilience research builds on; defines resilience in a way directly applicable to school organisations; open access	Individual/ developmental psychology focus; school is one context among many, not the primary unit of analysis; 2001 publication; not an assessment instrument	HIGH. Provides the foundational theoretical definition of resilience; gives theoretical ground for "resilience" definition and ensures term credibility. Establishes that resilience is not a rare or exceptional trait but a normal outcome of basic human adaptive systems that can be understood, supported and strengthened. This is the theoretical anchor for the SAMER project's framing of resilience as something every school can develop - not a fixed organisational characteristic.

What Research Tells Us

The review of 40 sources reveals a rich but uneven landscape. The literature pays considerable attention to areas important for school resilience: leadership during change, teachers' professional capacity, student wellbeing, organisational culture, community engagement, and schools' readiness to operate under challenging conditions. These areas already have a meaningful evidence base.

At the same time, this knowledge remains fragmented. It is spread across different research traditions, school levels, national contexts and change or crisis scenarios. These strands of research are not always connected. It is therefore important to highlight the main recurring patterns that can inform the development of the SAMER self-assessment tool.

Table 9. Key Review Insights

Two weakly connected research clusters	What the review found The literature points to two main research clusters. One cluster addresses organisational change, leadership during change and staff wellbeing in everyday school life. These studies are more often situated in the contexts of the USA, Israel, Turkey, Australia and Europe. The other cluster focuses more on school safety, disaster preparedness and the resilience of physical infrastructure. These studies are more often associated with the contexts of Japan, Taiwan, Pakistan, India and Indonesia.	Why it matters Schools facing everyday organisational challenges and schools recovering from physical disasters experience different kinds of pressure. However, in both cases, similar organisational capacities matter: clear leadership, collaboration, adaptability, communication and community cohesion. A tool that draws on both research clusters may therefore be better able to help schools prepare for and withstand different kinds of change.
Clearly described and practically usable tools are rare	What the review found Of the 40 sources, only a small number provide a clearly named, published and practically usable tool that could be used directly or adapted for the SAMER project. Some of these are validated scales or questionnaires, such as CYRM-28 (Pillay, 2022), CSAS and the Children's Hope Scale (Balasooriya Lekamge et al., 2025), the Teacher Resilience Scale (Li et al., 2019) and School Resilience Assessment Questionnaire (Mirzaei et al., 2021). Others, such as SDRA (Shiwaku et al., 2016), Processes and Actions to Leading Change at Schools (Lopez, 2022), the CSS baseline survey (Paci-Green et al., 2020) and the organisational profile framework (Chen-Levi and Buskila, 2022), are useful because of their structure, dimensions or logic of application, but differ in their validation level, target group or practical context of use. Most sources offer frameworks, theoretical models or empirical findings, but not a ready-to-use school resilience self-assessment tool.	Why it matters The scarcity of ready-to-use tools is an opportunity as much as a gap. Existing scales, questionnaires and frameworks can provide strong building blocks for the development of the SAMER self-assessment tool. For example, CYRM-28 may be useful for the student resilience dimension, the Teacher Resilience Scale for the teacher resilience dimension, and Processes and Actions to Leading Change at Schools for the leadership during change dimension. This means that SAMER does not need to build everything from scratch, but existing instruments need to be carefully adapted to the project's aims, school-level self-assessment and different national contexts.
Leadership is one of the strongest evidence-based dimensions	What the review found Leadership during change is one of the most consistently evidenced dimensions of school resilience in the review. It appears in approximately 20 of the 40 sources either as a primary focus or as a significant finding. Matthews et al. (2022), Lopez (2022), Da'as (2023), Hastie (2023), Kondakci et al. (2019), Grube (2024), Crumbley (2021) and Chen-Levi and Buskila (2022) emphasise leadership communication, participatory decision-making, trust and emotionally	Why it matters The fact that many sources emphasise communication, trust, staff involvement and participatory decision-making shows that leadership is one of the most consistently supported areas of school resilience in this review. It is also one of the areas where experiences across different countries can be meaningfully compared, because leadership challenges during change occur across different education contexts.

	intelligent leadership as important organisational resilience factors.	
Teacher resilience is well-measured individually but less often at the organisational level.	What the review found Teacher resilience has relatively strong measurement foundations at the individual level. The Teacher Resilience Scale (Li et al., 2019) is one of the validated instruments identified in the review. However, teacher resilience as a whole-school organisational property is assessed much less often. In other words, literature more often asks how resilient an individual teacher is, and less often whether the school itself creates the conditions for teachers to remain resilient collectively. Wilcox and Lawson (2018), Kondakci et al. (2019) and Vasel (2025) approach this issue, but none of the reviewed instruments fully capture it.	Why it matters This is one of the most consistent methodological gaps in the literature. Research measures individual teacher resilience relatively well but is weaker in assessing whether the school as an organisation creates the conditions that support it: a supportive working environment, collaboration, trust, realistic workload and opportunities for professional growth. For the SAMER tool, it is therefore important to assess not only teachers' individual resilience, but also the extent to which the school itself supports teachers' professional resilience.
Student wellbeing evidence is strong but fragmented	What the review found Student wellbeing and resilience are well supported by tools and programmes such as CYRM-28 (Pillay, 2022), CSAS and the Children's Hope Scale (Balasooriya Lekamge et al., 2025), Morote et al.'s five-country SEL co-creation programme (2020), and Potts (2024). However, student wellbeing is rarely connected to school-level organisational factors within the same instrument. It is most often measured as an individual student experience or outcome, rather than as an indicator of a school's capacity to support students.	Why it matters Student wellbeing instruments often help capture students' experiences, wellbeing, hope, resilience or engagement, but they do not always show which school conditions strengthen or weaken these experiences. Here, SAMER can add value: by connecting student experience with the school's capacity to support it. Therefore, the student questionnaire version should draw on the constructs and indicator logic measured by CYRM-28, CSAS and the Children's Hope Scale, while adapting the items to the SAMER context and testing them with school communities.
Geographic and contextual skew	What the review found The review is geographically skewed toward the USA (approximately 12 sources). Two crisis contexts also stand out strongly: the COVID-19 pandemic (13 sources) and natural disasters (8 sources). Only 13 sources use a general or unspecified context. There are relatively few sources with direct relevance to the European school context. These include Morote et al.'s (2020) study across five European countries, as well as the works by Panagiotidou et al. (2025). Other sources, such as Kondakci et al. (2019) in Turkey and Vasel (2025), Chen-Levi and Buskila (2022) in Israel, are useful because of their thematic relevance, but they cannot be transferred automatically to the European school context without adaptation.	Why it matters European schools, especially those in smaller and less-studied education systems, are only limitedly represented in the literature on school resilience self-assessment. Evidence developed in the USA, Japan or global crisis contexts cannot be transferred directly to European schools. It needs to be adapted and tested in the specific context of each country, education system and school community.
Multi-stakeholder assessment is rare.	What the review found Most instruments assess a single stakeholder group: often teachers or school leaders, and less often students. Instruments less frequently include several school community groups to allow their responses to be compared across the same or similar areas. Among the reviewed sources that present tools, Morote et al. (2020), Paci-Green et al.	Why it matters This is an important gap because school resilience is, in essence, a whole-community quality. It depends not only on leaders, teachers or students separately, but on their relationships, trust and collective action. Morote et al.'s (2020) co-creation model across five European countries clearly shows that involving several school community

(2020) and Lopez (2022) clearly include several respondent groups with comparable dimensions across these groups - though Lopez's approach (paired principal self-report and staff/parent observer-report on identical dimensions) is a design pattern worth naming explicitly. Paci-Green et al. (2020) provide a broader multi-area school safety framework; however, it operates more at the policy and system level than as a school community self-assessment tool.

groups is possible and helps create tools that communities trust more and are more willing to use. For the SAMER project, this means that the self-assessment tool should be designed in a way that includes different school community perspectives and allows them to be meaningfully compared.

In summary, these insights point in a clear direction: the literature already contains substantial knowledge needed to understand and strengthen school resilience, but this knowledge is fragmented across different research traditions, school community groups and geographical contexts. It has not yet been brought together into one clear, easy-to-use tool for European schools. The six dimensions of school resilience presented in Chapter 5 synthesise the knowledge that appears most consistently across the review, is recognisable in everyday school life and is relevant to the school communities this project is designed to support.

Existing Tools for Understanding and Assessing School Resilience

The previous section summarised what the reviewed studies say about resilience-related tools and measures. This section goes deeper by looking more closely at specific tools identified through the review, as well as selected additional tools relevant to school resilience, self-assessment and whole-school improvement. Various instruments already exist for measuring different parts of school resilience. However, they were developed in different countries, for different purposes and for different respondent groups. Some focus on students, others on teachers, school leaders, crisis readiness or school safety. Very few provide a whole-school picture. This section therefore offers a practical overview of what already exists, what each tool is useful for, how accessible it is, and what none of the tools can do on its own.

The instruments discussed in this section differ in several ways, and it is useful to keep these differences in mind before reading the table below. First, they differ in **who completes them**: some are answered by students, some by teachers, some by school leaders, and only a few try to capture the whole school system at once. Second, they differ in **what they measure**: some focus on individual wellbeing or personal resilience, others assess a school's readiness for crises, and others examine leadership style or day-to-day organisational functioning. Third, they differ in **how rigorously they have been tested**. Some are validated questionnaires, meaning they have been checked to confirm that they measure what they claim to measure, while others are simpler checklists, national policy surveys or conceptual frameworks that were not designed to produce a score. Finally, they differ in **how easy they are to access**: a few are openly published and ready to use, while others are available only through unpublished theses, author permission or licensed use.

Table 10 brings these differences together in one place. Each row names the instrument, the source or study in which it appears, who originally developed it, what it measures, and how it works in practice. The final column explains whether the instrument appears to be openly available, whether permission may be required, or whether the tool is better understood as a reference point than as something a school can immediately use. Most tools in Table 10 come from the reviewed sources. Two tools, 5Essentials and TALIS, are included as contextual background instruments because they are already cited elsewhere in this document and provide useful reference points for whole-school or system-level assessment.

Table 10. Instruments Identified in the Review and Contextual Sources

Instrument	Source/study where the tool appears	Originally developed by	What it measures and how it works	Access and use considerations
Children's Hope Scale	<i>Balasooriya Lekamge et al. (2025), Evaluation of a nationwide whole-school approach to mental health and wellbeing</i>	Snyder et al., 1997	The Children's Hope Scale (CHS) is a 6-item self-report questionnaire designed for children and adolescents ages 8-16. Developed by Snyder et al., it measures goal-driven hope through two key components: agency (motivation to sustain action) and pathways (capacity to find ways to reach goals).	The full 6-item scale is published in the original article. Access and reuse conditions should be checked before use. More information: https://www.mhpss.net/toolkit/mhpss-m-and-e-mov-toolkit/resource/childrens-hope-scale
5Essentials Survey	<i>Bryk et al. (2010), Organizing Schools for Improvement: Lessons from Chicago - contextual background source</i>	Bryk et al., University of Chicago (2010)	The 5Essentials Survey defines and measures important organizational conditions within a school that affect student outcomes. Filled in by students, teachers, and parents; schools get a comparison report. The teacher survey includes questions about instruction, professional development, and the school as a workplace. The student survey includes questions about students' experiences, attitudes, and activities in school. Participation Requirements: To generate a valid, school-level diagnostic report, a specific threshold of participation is usually mandated by state boards of education in the USA. Generally, schools must reach a response rate of at least 50% for students and teachers; parent survey participation may also factor into eligibility for a school-level report.	Information about the survey is publicly available. Use in a specific school or country may depend on the provider's conditions. More information: https://consortium.uchicago.edu/surveys
Nine-criteria organisational profile	<i>Chen-Levi & Buskila (2022), Our Organization Deals with People, not with Products</i>	Mostly from Sharan & Shachar (1990); extended by the study's own author. Seven of the nine criteria were originally established by Sharan and Shachar (1990).	A nine-criteria framework rating whether a school runs more like a rigid, centralized hierarchy or a flexible, collaborative system. The profile measures nine structural and systemic parameters, with a specific focus on curriculum and organizational change. Covers: complexity of staff organization, delegation of authority, curriculum flexibility, teacher compartmentalization by subject, flexibility in teaching/learning time, institutional approach to change, agreement on school policy and ideology, time pressure, and how well the school copes with information overload. Rated by teachers and administrative staff.	Free - fully described in an open academic article. More information: https://files.eric.ed.gov/fulltext/EJ1322171.pdf

Instrument	Source/study where the tool appears	Originally developed by	What it measures and how it works	Access and use considerations
Teacher resilience scale (Li, Gu & He)²	<i>Li, Gu & He (2019), Resilience of Chinese Teachers: Why Perceived Work Conditions and Relational Trust Matter</i>	Li, Gu & He built their scale for the study, drawing on earlier conceptual and empirical work on teacher resilience by Gu & Day (2007, 2013) and Gu & Li (2013)	Started as a 26-item pool and was narrowed to 13 items across three dimensions: vocational motivation and commitment, self-efficacy, and job fulfilment/professional optimism. Teachers rate each item on a 6-point scale from “strongly disagree” to “strongly agree”.	Not published in full - the article quotes only 3 sample items. Getting the complete 13-item scale would mean contacting the authors directly.
Observed School Leader's Behaviors Promoting Change (OSLEB) and Processes and Actions to Leading Change at Schools	<i>Lopez (2022), Processes and Actions to Leading Change at Schools – School Leaders</i>	Silvia Veronica Lopez (2022), based on John Kotter's change-management approach	Two original instruments built by Lopez for dissertation study. Processes and Actions to Leading Change at Schools is a self-report form completed by principals; OSLEB (Observed School Leader's Behaviors Promoting Change) is a companion observer-report form completed by staff and parents, rating the same principal on identical items. Both are structured around John Kotter's eight-stage change model: creating urgency, building a guiding coalition, developing a vision, communicating that vision, empowering broad-based action, generating short-term wins, consolidating improvements, and institutionalizing the new approach. Developed and tested during schools' shift to distance learning in the COVID-19 pandemic.	Not publicly available online. Presented in doctoral thesis.
School Resilience Assessment Questionnaire³	<i>Mirzaei et al. (2021), Design and psychometric evaluation of schools' resilience tool in emergencies and disasters</i>	Mirzaei and colleagues - built and tested for this study	A 29-item, validated questionnaire measuring how ready a school is for emergencies and disasters, covering the physical building, staff training and communication. It shifts the focus of resilience away from individual students and onto the structural and operational readiness of the school itself. Developed and tested specifically for schools in Iran.	The questionnaire is published in the article and may be used as a reference point. Permission and adaptation requirements should be checked before use in a new context. More information: https://doi.org/10.1371/journal.pone.0253906

² The instrument used in Li, Gu & He (2019) is one example from a wider field of teacher-resilience tools, but they were not part of this review and are not discussed here in detail. For example, Daniilidou & Pezirkianidis (2025) map 12 such instruments, including their own developed Teachers' Resilience Scale (TRS) (Daniilidou & Platsidou, 2018). These teacher-resilience measurement instruments could be explored individually and are indicated here to understand that this is a larger field than the single instrument reviewed in this document.

³ School Resilience Assessment Questionnaire (Mirzaei et al., 2021) is not the same as the School Resilience Questionnaire (SRQ) instrument (authors - Afzali & Hosseini, 2024), a 55-item, six-factor scale. School Resilience Assessment Questionnaire is a 29-item, staff-completed tool built specifically for disaster and emergency readiness, while SRQ is a broader, student-completed resilience measure not focused on disasters. SRQ was not part of this review's 40 sources and is noted here only to avoid confusion between the two similarly named tools. More information about SRQ: <https://doi.org/10.1186/s40359-023-01496-6>.

Instrument	Source/study where the tool appears	Originally developed by	What it measures and how it works	Access and use considerations
The Teaching and Learning International Survey (TALIS)	OECD (2025), Results from TALIS 2024: The State of Teaching - contextual background source	OECD (Organisation for Economic Co-operation and Development)	The Teaching and Learning International Survey (TALIS) is the world's largest international survey about teachers and school leaders. Since 2008, the Teaching and Learning International Survey (TALIS) has gathered information from teachers and school leaders about working conditions and learning environments in over 60 education systems. The survey is the voice of teachers, and its results are used by policymakers to improve teaching and learning around the world. TALIS investigates professional development, pedagogical practices, job satisfaction, the use of artificial intelligence in education, and strategies for teaching diverse student populations. Run every 5 to 6 years. The next round planned for 2030.	Free to download, built as an international study, not a school-level tool. More information: https://www.oecd.org/en/publications/talis-2018-results-volume-i_1d0bc92a-en/full-report.html
CSS baseline survey (Comprehensive School Safety Baseline Survey)	<i>Paci-Green et al. (2020), Comprehensive school safety policy: A global baseline survey</i>	GADRRRES	The Comprehensive School Safety (CSS) Baseline Survey (officially known as the CSS Policy Survey) is a diagnostic tool created by the Global Alliance for Disaster Risk Reduction and Resilience in the Education Sector (GADRRRES). It enables governments and policymakers to measure and evaluate disaster resilience in education systems. It checks whether a country has adopted comprehensive school-safety policies covering an all-hazards approach: emergency management, safer school construction, and disaster-risk-reduction education. Run across 68 countries by GADRRRES and Save the Children, in partnership with the United Nations.	The framework is free and public, at gadrrres.net . More information: https://gadrrres.net/comprehensive-school-safety-framework
CYRM-28 (The Child and Youth Resilience Measure)	<i>Pillay (2022), Resilience to COVID-19 challenges: Lessons for school psychologists</i>	Michael Ungar & Linda Liebenberg, Resilience Research Centre, Dalhousie University	A questionnaire exploring the personal, relational and contextual (school, work, and community environments) resources that help young people cope with hard times - support from family and friends, cultural identity, and a sense of belonging. The 28-item version used in this review structures these into three parts: personal strengths, relationships with caregivers, and community/cultural context. CYRM also comes in a shorter 12-item version and a newer, revised 17-item version (CYRM-R). The tool has versions for different age groups: Children (Ages 5-9), Youth (Ages 10-23), Adults (Ages 18+, ARM-R), and Persons Most Knowledgeable (surveys filled out by caregivers or professionals). This review used the 28-item youth version.	Free for non-profit use, with a short permission process and appropriate credit to the original authors. More information: https://resilienceresearch.org/home-cyrm/
School Resilience Assessment Index	<i>Shah et al. (2020), Measuring education sector resilience in the</i>	Shah et al. (2020), building on earlier	Checks how ready a school is for flooding, across four areas: physical conditions (building safety, facilities, disaster preparedness), human resources (staff, student and parent training and participation), institutional issues (planning,	Not freely published - would need contact with the publisher or authors. More information:

Instrument	Source/study where the tool appears	Originally developed by	What it measures and how it works	Access and use considerations
	<i>face of flood disasters in Pakistan</i>	disaster-resilience tools	governance, early-warning systems, disaster committees), and external relationships (ties with local government and community organizations). Completed by teachers and school management and built for flood-prone districts in Pakistan.	https://link.springer.com/article/10.1007/s11356-020-10308-y
SDRA (School Disaster Resilience Assessment)	<i>Shiwaku et al. (2016), School disaster resilience assessment in the affected areas of the 2011 East Japan earthquake and tsunami</i>	Tong et al. (2012)	School Disaster Resilience Assessment (SDRA) was developed in 2012 by Tong et al. utilizing a total of 75 indicators for assessing school disaster resilience, across five dimensions: physical conditions, human resources, institutional issues, external relationships, and natural conditions. Filled in by school staff, with results designed to feed directly into decision-making and to be benchmarked against a similar, unaffected school.	Not publicly available - would need direct contact with the researchers. More information: https://doi.org/10.1007/s11069-016-2204-5 .

Table 10 shows that existing instruments already cover several important parts of school resilience. Some tools focus on student wellbeing, such as CYRM-28 and the Children's Hope Scale. Others focus on teaching staff, such as the teacher resilience scale built by Li, Gu & He, or on crisis and disaster readiness, such as the School Resilience Assessment Questionnaire and SDRA. Processes and Actions to Leading Change at Schools and OSLEB add a useful example of how leadership during change can be assessed. Together, these instruments show that many useful elements already exist.

What remains limited is their ability to bring these perspectives together. Only a small number of instruments capture more than one school-community group at once, and most were developed for a specific country, crisis type, or research purpose. Few are ready for schools to use repeatedly as part of everyday self-assessment and improvement planning. Access is also a practical barrier: several instruments are not openly available and would require permission, contact with the original researchers, or a licence before a school could use or adapt them.

What this means for the SAMER project

This overview shows that existing tools can provide useful starting points, but none of them should be copied directly into the SAMER context. They offer ideas about how questions can be worded, which groups can be asked to respond, and how results can be interpreted. However, most of them focus on only one part of school resilience, such as student wellbeing, teacher resilience, leadership or crisis readiness.

For SAMER, the value of these tools is that they show what can be learned from previous work while also making clear where further development is needed. The SAMER self-assessment tool should build on these examples carefully, remain adaptable to different school contexts, and be refined through stakeholder engagement, piloting and feedback from schools.

Related Tools Identified Outside the Review Search

In addition to the instruments discussed above, other tools related to school resilience, self-assessment, educator wellbeing, student development and whole-school improvement can also be found outside the formal review search. The four tools below are included as additional examples to give a broader view of the field. They are not used as the main evidence base for the SAMER framework, but they help show the range of tools and approaches that schools and project partners may encounter when exploring resilience-related resources. One of them, the Functional Resilience Index, is particularly relevant because it is a recent example of a multi-stakeholder school resilience assessment developed after COVID-19.

Table 11. Tools Outside The Review's Search

Tool	Author(s)	Description of the tool (what it measures)	Access and use considerations
Educator Resilience and Self-Care Tool	American Institute for Research	Helps individual teachers check in on their own wellbeing - physical, psychological, emotional, relational, spiritual and workplace self-care - and includes a worksheet to build a personal self-care plan. It is a structured self-reflection tool and supports individual staff.	Free to read. More information: https://inee.org/resources/educator-resilience-and-trauma-informed-self-care-self-assessment-and-planning-tool
Resilience & Youth Development Module (RYDM)	Constantine, Benard & Diaz (1999); Constantine & Benard (2001) in collaboration with WestEd	The Resilience & Youth Development Module (RYDM), originally part of the California Healthy Kids Survey (CHKS) , is a specialized, student self-report survey commonly administered alongside the CHKS. It assesses 17 to 56 specific environmental and internal assets designed to measure adolescent positive mental health and protect against risk behaviors.	Free at calschls.org. More information: https://eric.ed.gov/?id=ED498459
DESSA (Devereux Student Strengths Assessment)	Devereux Center for Resilient Children	DESSA (Devereux Student Strengths Assessment) is a standardized, strength-based behavioral screening tool used by schools to evaluate and support the social-emotional learning and resilience of K-12 students. The tool has 72 items across eight social-emotional competencies that serve as protective factors for children.	Paid, commercial assessment. More information: https://riversideinsights.co.uk/k12-assessments/dessa

Tool	Author(s)	Description of the tool (what it measures)	Access and use considerations
Functional Resilience Index (FRI)	Lev-ari (2023), Tel Aviv University	Four questionnaires, tailored separately to students, parents, teachers and principals, built and tested in Israel after COVID-19. Each stakeholder group's questionnaire combines two parts: a composite functional resilience scale (10 indexes: communication during distance and in-person learning, a validated 4-item perceived-stress scale, psychosocial wellbeing during distance and in-person learning, digital literacy, pedagogic support, resources, infrastructure, and distance-versus-in-person learning) and a separate perceived functional resilience scale, built specifically for this study.	Free to read. More information: https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2023.1291621/full#supplementary-material

Overall, the tools presented here show that many useful approaches already exist. Some focus on specific respondent groups, while others focus on particular risks, contexts or areas of school life. This confirms the need for a more integrated self-assessment approach that can help schools reflect on their strengths, pressures and areas for improvement in a structured way.

The next chapter builds on these insights by proposing a set of key school resilience dimensions that can guide the development of the SAMER self-assessment tool.

5. Six Key Dimensions of School Resilience

The synthesis of 40 reviewed sources reveals six key dimensions that consistently emerge as the organisational areas where school resilience is built, tested and most frequently under pressure. Each dimension is grounded in evidence from multiple countries and change contexts - they reflect what research repeatedly finds matters most when schools face pressure.

Together they offer a practical framework for thinking about organisational resilience: which areas to pay attention to, what strong performance looks like in each, and where the most common vulnerabilities tend to appear. Table 12 provides an overview of all six dimensions, each described in more detail in the sections that follow.

Table 12. Six Key Dimensions of School Resilience

#	Dimension	What it covers	Who it involves	Key sources
1	School Management and Governance	How leaders communicate, make decisions, maintain trust and plan - specifically during periods of change	<i>Teachers</i> <i>Administrators</i>	<i>Matthews et al. (2022); Lopez (2022); Da'as (2023); Kondakci et al. (2019); Grube (2024)</i>
2	Teacher Resilience and Professional Capacity	Teachers' capacity to adapt their practice, maintain wellbeing, access development and collaborate under pressure	<i>Teachers</i> <i>Administrators</i>	<i>Li et al. (2019); Wilcox & Lawson (2018); Kondakci et al. (2019); Vassel (2025); Felver (2016)</i>
3	Student Wellbeing and Learning Engagement	Students' psychological wellbeing, sense of belonging, coping capacity and sustained engagement during change	<i>Students</i> <i>Teachers</i> <i>Administrators</i>	<i>Pillay/CYRM-28 (2022); Balasooriya Lekamge et al. (2025); Morote et al. (2020); Potts (2024)</i>
4	School Culture and Collective Adaptability	The shared norms, collaborative practices, and internal culture that allow a school to learn together and adapt	<i>All three groups</i>	<i>Kondakci et al. (2019); Lu et al. (2025); Benoliel & Schechter (2023); Chen-Levi & Buskila (2022)</i>
5	Community, Family and Stakeholder Engagement	The quality of the school's relationships with families, community partners and external services during change	<i>All three groups</i>	<i>Morote et al. (2020); Grube (2024); Jabbar et al. (2023)</i>
6	Crisis Readiness and Environmental Adaptability	The school's capacity to maintain continuity during sudden disruption, including growing climate-related risks in Europe	<i>Administrators</i> <i>Teachers</i> <i>Students</i>	<i>Shiwaku/SDRA (2016); Mirzaei (2021); Copernicus ESOTC 2024; UNICEF (2025)⁴</i>

Equity is not presented as a separate standalone dimension. It is a quality criterion that runs through all six dimensions - asking, in each area, whether the school's capacity is distributed fairly across all students and staff groups, or whether some are systematically excluded. Every dimension includes indicators that are sensitive to this question.

Dimension 1. School Management and Change Governance

How school leaders communicate, make decisions, maintain staff and community trust, plan strategically and allocate resources - specifically during periods of change and pressure.

Why this dimension matters

When the evidence from all 43 sources is consolidated, leadership is the single strongest signal in the entire dataset - present as a primary factor in approximately 20 sources. It is the first dimension schools need to examine because leadership quality shapes all others: a school with strong culture, capable teachers and

What this looks like in schools

- Leaders share clear, honest information with staff and families before and during change
- Staff feel their input is genuinely considered in decisions that affect their work
- The school has current plans for managing change - and actually uses them

⁴ The climate-context citations (Copernicus ESOTC 2024; UNICEF 2025) were not part of the systematic search and screening process described in Section 3. They are supplementary sources used to support the climate-readiness statistics cited in this section, not part of the review's 40-source evidence base. Shiwaku et al. (2016) and Mirzaei et al. (2021) are this dimension's screened-literature sources.

engaged families will still struggle under change if its leadership communicates poorly, makes decisions without consultation, or fails to maintain trust when things are difficult. Matthews et al. (2022), Lopez (2022), Da'as (2023), Hastie (2023) and Kondakci et al. (2019) all converge on this finding.

- Staff trust that leadership will act fairly and supportively when conditions are difficult
- Resources are redirected to where pressure is highest, rather than staying fixed
- Evidence about how the school is functioning is actively used to adjust course

Key indicators

- **Type** of leadership style (empathetic, collaborative, authoritarian) as perceived by staff and students
- **Degree** to which staff feel informed and heard during periods of change
- **Trust** scores in school leadership and in the wider education system
- **Availability** and quality of strategic plans and whether staff know they exist
- **Evidence** of monitoring and adjustment: does leadership check what is working and respond?

Dimension 2. Teacher Resilience and Professional Capacity

The capacity of teachers to adapt their professional practice, maintain motivation and wellbeing, exercise professional agency, access development and collaborate with colleagues specifically under conditions of change.

Why this dimension matters

Teacher attrition is one of the most acute pressures facing European education systems. TALIS 2024 found that one in five teachers under 30 plans to leave the profession within five years. Teacher resilience is both an individual experience and a school-level property: a school where most teachers are professionally engaged and supported functions categorically differently from one where most are burned out. The Teacher Resilience Scale (Li et al., 2019) is the most rigorously validated instrument in the scoping review, with three well-grounded factors: vocational commitment, self-efficacy and job fulfilment.

What this looks like in schools

- Teachers remain committed to their work even when organisational conditions are difficult
- Teachers have genuine professional discretion to adapt their practice to what students need
- Workload is manageable alongside personal life and actively managed when change adds pressure
- Teachers have access to professional development that is relevant to current challenges
- Staff regularly share ideas and learn from each other, not just individually
- Teachers feel safe enough to admit when they are struggling and ask for support

Key indicators

- **Vocational** commitment and motivation: do teachers feel their work matters, even under pressure?
- **Self-efficacy** and agency: do teachers feel capable and free to adapt their practice?
- **Work** sustainability: workload manageability, job satisfaction and work-life balance scores
- **Access** to and quality of professional development - number, type and perceived relevance
- **Peer** skill exchange: frequency and quality of collaborative learning among staff

Dimension 3. Student Wellbeing and Learning Engagement

The degree to which students maintain psychological wellbeing, a sense of belonging, effective coping capacity and sustained engagement with learning, particularly when the school is navigating change or pressure.

Why this dimension matters

Students are central to why school resilience matters - yet student experience is the least represented perspective in the existing literature on school self-assessment. PISA 2022 found that sense of belonging deteriorated in most participating education systems during the pandemic and has been slow to recover. CYRM-28 (Pillay, 2022), the Cantril Self-Anchoring Scale and Children's Hope Scale (Balasooriya Lekamge et al., 2025) and the five-country SEL co-creation study (Morote et al., 2020) all establish that student wellbeing and learning engagement are not fixed characteristics - they are responsive to the organisational conditions the school creates. Vulnerable students are consistently the first to show the effects of low school resilience and the last to recover.

What this looks like in schools

- Students feel safe, accepted and that they belong at school even when things change
- Students have strategies for managing stress and know how to ask for help
- Students remain motivated and engaged with learning during periods of uncertainty
- Students who are struggling emotionally can access support at school
- All students, regardless of background, need or circumstance, have equal access to support

Key indicators

- **Life** satisfaction and psychological wellbeing scores (e.g. Cantril Self-Anchoring Scale)
- **Hope** and positive future orientation (Children's Hope Scale)

- **Coping** skills: ability to manage stress and disengage from problems adaptively
- **Sense** of belonging and connectedness within the school community
- **Equity** of access to support: are wellbeing outcomes consistent across different student groups?

Dimension 4. School Culture and Collective Adaptability

The shared norms, beliefs, collaborative practices and internal culture that determine whether a school can learn together from experience, reflect honestly on its own functioning, maintain equity under pressure, and sustain the collective will to adapt.

Why this dimension matters

Lu, Loeb & Waymack (2025) is the clearest evidence for why this dimension matters: their analysis of how schools responded to the pandemic found three distinct organisational trajectories. Schools that engaged in structured collective reflection - genuinely examining what was working and what was not - adapted and improved. Those that absorbed change without reflecting on it stagnated. Culture is what makes the difference between a school that learns from difficulty and one that simply endures it. Kondakci et al. (2019) confirm that knowledge sharing and collaborative learning are the strongest organisational predictors of continuous change behaviour.

What this looks like in schools

- Staff share a common understanding of what the school stands for - visible in daily practice
- After a difficult period, the school takes time to reflect on what happened and what to do differently
- Staff regularly share ideas and have structured time to learn together
- Inclusion practices are actively maintained when the school is under pressure
- The school approaches new challenges with openness rather than resistance
- People in this school, staff and students, genuinely look out for each other

Key indicators

- **Shared** beliefs, norms and vision: degree to which staff and students report a common sense of purpose
- **Collective** reflection: does the school regularly examine its own practice as a community?
- **Peer** skill exchange: number and quality of practices shared among staff
- **Openness** to change and innovation: scores on organisational readiness and adaptability
- **Social** equity and inclusion as a norm: are inclusive practices maintained under pressure?

Dimension 5. Community, Family and Stakeholder Engagement

The quality of the school's relationships with the families it serves, the community it is embedded in, and the external partners and services it can activate, particularly during periods of change and pressure.

Why this dimension matters

Research consistently shows that schools with strong community relationships are better placed to navigate change, not because external engagement is a luxury, but because it expands the school's capacity and creates a buffer of goodwill that can be drawn on when internal resources are stretched. Morote et al.'s (2020) five-country co-creation study demonstrated that tools developed with genuine family and community input are significantly more trusted and more used than those designed without it. Jabbar et al. (2023) show that schools serving disadvantaged communities depend even more heavily on external partnerships to provide what they cannot provide alone. This dimension is separated from School Culture (Dimension 4) because a school can have a strong internal culture but poor family trust, or vice versa, and both matter independently.

What this looks like in schools

- Families receive clear, honest information about changes that affect their children
- Families have genuine opportunities to contribute to school decisions, not just be informed of them
- The school has active relationships with community organisations and knows where to turn for support
- Students' views are sought and visibly acted upon in school improvement processes
- The school is transparent with its community about difficulties, not just about successes

Key indicators

- **Quality** and frequency of communication with families especially during change
- **Degree** to which families feel genuinely involved rather than merely informed
- **Number** and quality of active external partnerships and community connections
- **Evidence** of stakeholder voice: do student and family views visibly shape school decisions?
- **Trust** in the school from the community perspective maintained during difficult periods

Dimension 6. Crisis Readiness and Environmental Adaptability

The school's organisational and physical capacity to maintain educational continuity during any sudden disruption, including the growing risks posed by climate-related events that are already affecting schools across Europe.

Why this dimension matters

Of the six dimensions, this one might prompt questions - particularly from schools in areas that have not yet experienced significant climate-related disruption. The evidence is clear: climate-related school disruption is already a present and accelerating reality across Europe, and its frequency and intensity are increasing. This is not a distant future concern. But climate is only part of the picture. The organisational capacities that help a school manage a flood or a prolonged heatwave (clear continuity plans, reliable digital infrastructure, governance stability, distributed decision-making) are the same capacities that help it manage any sudden disruption: a public health event, an abrupt policy change, a staffing crisis, or an extended power outage. Crisis readiness is not a specialist capacity for high-risk zones. It is a general organisational property that every school benefits from building, and that becomes more valuable the more unpredictable the environment becomes. The dimension is structured in two layers. The first covers universal capacities relevant to every school regardless of location or climate exposure. The second addresses physical and environmental vulnerability more specifically, and is more prominent for schools in regions where climate-related disruption is already a regular reality. As climate patterns continue to shift across Europe, this second layer will become increasingly relevant for a growing number of schools across the continent.

What this looks like in schools

- All students have access to devices and connectivity needed if in-person learning is disrupted
- Staff know their roles during a disruption before it happens, not only after
- The school continues to function effectively even when key individuals are absent
- The school's physical spaces are safe, adequate and can be flexibly adapted
- The school is aware of the specific climate-related risks most relevant to its location
- Plans for responding to likely local disruptions exist and are periodically reviewed

Key indicators

- **Digital** continuity: access to devices, connectivity and digital teaching capacity for all students
- **Continuity** planning: availability, currency and staff awareness of disruption response plans
- **Governance** stability: can the school function and make decisions when leadership is disrupted?
- **Physical** facility adequacy and safety: are spaces safe, sufficient and flexible?
- **Climate** and environmental risk awareness: does the school know its specific local vulnerabilities?

Why Climate Readiness Already Matters for European Schools

The data shows that climate-related school disruption is already a present and growing reality - not only globally, but across Europe. It is not a distant future concern. In recent years, **severe flooding** has forced school closures in Poland, Czechia, Austria, Romania and Slovakia (World Weather Attribution, 2024) and in Spain (Royal Meteorological Society, 2024); record **heatwaves** have affected schools across southeastern Europe, Greece and the Balkans (Copernicus Climate Change Service, WMO, 2025); and **wildfires** have disrupted communities in Portugal, Greece and Italy (European Environment Agency, 2024). The evidence points in one direction: climate-related disruption to schools is becoming more frequent, more intense and more geographically widespread across the continent. These examples are not intended to suggest that all schools will face the same climate risks. They show why every school should have continuity, communication and response plans in place.

In 2024 alone, at least **242 million students in 85 countries** had their schooling disrupted by climate-related events - at least **1 in 7 students globally** (UNICEF, 2025). Europe is not insulated from this trend. It is, in fact, the **fastest-warming continent on Earth**, warming at approximately twice the global average rate since 1980, with 2024 recorded as the warmest year on the continent to date (Copernicus Climate Change Service, WMO, 2025).

In July 2024, southeastern Europe experienced its **longest heatwave on record** - 13 consecutive days affecting 55% of the region, including North Macedonia and Albania (Copernicus, 2025). In September 2024, Storm Boris brought record-breaking **rainfall and flooding** across Central Europe, affecting approximately **2 million people** and forcing school closures through power cuts across Poland, Czechia, Austria, Romania and Slovakia (World Weather Attribution, 2024). Albania and North Macedonia share the Drin River Basin, one of the most flood-prone regions in Europe, where climate change is already making floods arrive faster, last

longer and hit harder (UNDP Climate Promise, 2025). Looking further ahead, a child currently in primary school will experience, over their lifetime, **three times more floods, five times more droughts and 36 times more heatwaves** than a child born in 1970 (UNICEF, Euronews, 2024).

The organisational capacities assessed in **Dimension 6** - continuity planning, digital infrastructure, governance stability and environmental awareness - are relevant to every school regardless of its specific climate exposure. Schools in lower-risk areas will engage more lightly with the climate sub-dimensions; schools in higher-risk areas will find them directly practical. Across Europe, different regions face different climate risks: southeastern and southern Europe are most exposed to heatwaves and drought; central and western regions face increasing flood and storm risk; northern regions are experiencing accelerating changes in precipitation and extreme weather patterns. What is common to all is the direction of travel - disruption is increasing, and the schools best placed to navigate it are those that have built the organisational capacity to respond before a crisis arrives.

Six Areas, One School

The six dimensions are not independent checklists. They form an interconnected system, and understanding how they relate helps explain why all six are necessary.

Dimension 1 (School Management and Change Governance) underpins all others. A school's capacity to respond well to any pressure depends on whether its leadership communicates clearly, makes decisions collaboratively and maintains trust. Without this foundation, other dimensions are fragile: strong culture cannot hold together without leadership that models it, and teacher resilience cannot be sustained without leadership that actively protects it.

Dimension 2 (Teacher Resilience) and **Dimension 3 (Student Wellbeing)** are mutually reinforcing. Teachers who are professionally resilient and supported create environments where students feel safe, engaged and able to learn. Students who are well and engaged make teachers' work meaningful and sustainable. When either deteriorates, the other tends to follow.

Dimension 4 (School Culture and Collective Adaptability) is the organisational foundation that makes the other dimensions sustainable over time. A school with strong leadership but a culture resistant to reflection will struggle to learn from what leadership puts in place. Culture is what persists through staff changes, leadership transitions and external pressure - it is the school's longest-lasting organisational asset.

Dimension 5 (Community, Family and Stakeholder Engagement) extends the school's resilience outward. Schools with strong community trust and active family involvement have a buffer of support they can draw on when internal resources are stretched. Schools that lose family trust face change in social isolation - precisely when external support would be most valuable.

Dimension 6 (Crisis Readiness and Environmental Adaptability) provides the practical infrastructure that allows all other dimensions to function under sudden disruption. Strong leadership and culture mean little if the school has no way to maintain communication, continue learning, or make decisions when normal conditions break down.

The six dimensions are not a checklist - they are a system. Leadership sets the direction, teacher capacity delivers it, student wellbeing is the outcome that matters most, culture sustains it all over time, community relationships extend it outward, and crisis readiness ensures it holds when conditions become difficult.



Figure 10. Interconnections Between the Six Dimensions of School Resilience

No school is equally strong across all six - and no school needs to be. What matters is having an honest picture of where the strengths lie and where the vulnerabilities are. That picture is what makes improvement possible. Understanding the dimensions is one part of what the review reveals. The other is more practical: across the reviewed sources, several specific design choices, methodological approaches and implementation practices stand out as genuinely worth building on. These are presented in the following chapter.

6. Good Practices Worth Building On

The review helped identify several valuable practices from existing tools, frameworks and studies. These may be useful in developing the SAMER self-assessment tool. Previous tools used different approaches to check whether questionnaires were clear, reliable and suitable for use, as well as different methods for data collection and analysis. Some of these practices had already been noted in the initial needs analysis, and have therefore already been taken into account when planning SAMER activities.

Table 13 summarises the most important practices from the reviewed documents and suggests how they can be used in further SAMER activities.

Table 13. Good Practices Worth Building on in the Development of the SAMER Tool

Best Practice	Supporting Evidence	Description	Recommendation for the SAMER project
Multi-stakeholder design and adaptation	Morote et al. (2020); Lopez/ Processes and Actions to Leading Change at Schools and OSLEB (2022); Sakurai et al. (2017); Shiwaku et al. (2016); Chen-Levi & Buskila (2022)	Different groups within the school community may experience change and pressure in different ways. Therefore, the SAMER tool should collect and compare feedback from several groups, including school leaders or administrative staff, teachers and students.	SAMER activities already address this through stakeholder involvement. Stakeholder sessions should include all relevant target groups, and the self-assessment tool should be adapted for these groups so that it can generate both group-specific and whole-school results.
Cross-national/cultural adaptation of the tool	Morote et al. (2020); Paci-Green et al. (2020)	Because schools operate in different linguistic, local, and national policy contexts, the self-assessment tool should be adapted to each country and school context, not only translated.	Standard procedures for cross-cultural and national adaptation should be defined to ensure that the tool is not only translated, but also linguistically, culturally and contextually appropriate. This will help maintain the clarity, reliability and comparability of results across countries and contexts.
Self-assessment re-runs across timepoints (i.e., baseline to action plan to evaluation/re-assessment)	Matthews et al. (2022)	The self-assessment should first be carried out as a baseline assessment to identify stronger and weaker areas, as well as the school's change-sensitive areas. It should then be repeated at later stages using comparable dimensions, so that schools can monitor whether their actions have led to improvement over time - an approach demonstrated by Matthews et al. (2022), who tracked teacher outcomes across nine survey waves (a baseline plus eight biweekly follow-ups) over one semester.	The dimensions and items of the self-assessment tool should be designed in a way that allows schools to compare results across different points in time.
Design adjustable framework across crisis contexts (health, policy reform, environmental)	Pillay (2022); Hassan et al. (2020); Shah et al. (2020)	The SAMER tool should not be limited to one specific crisis context. It should be flexible enough to be used in different situations, including sudden crises, policy reforms, demographic change, digital transformation and environmental disruptions.	The dimensions and items should not be tied to one specific type of crisis or change. They should remain applicable across different contexts, or, where necessary, context-specific items may be shown only when relevant.
Apply mixed-methods approach for measuring school resilience	Sakurai et al., (2017); Wang et al., (2020)	A mixed-methods approach can provide both breadth and depth. Surveys can show broader patterns across the school community, while interviews, focus groups or observations can help explain why these patterns appear and what they mean in practice.	Where feasible, the self-assessment tool may include selected open-ended questions to provide deeper insight into how school resilience is experienced and understood by different groups.

Pilot testing and validation, i.e. checking the clarity, reliability and suitability of the questionnaire	Mirzaei et al., (2021)	Before wider use, the questionnaire should be piloted and refined to check whether the questions are clear, reliable and suitable for school communities in different contexts. The testing process and any changes made to the tool should be clearly documented.	Some validation procedures, including stakeholder consultation, are already included in the planned SAMER activities. Pilot testing should be used to check whether the questionnaire is clear, reliable and suitable for use in different school contexts. The validation and reliability procedures should be clearly documented.
Develop analytical protocol	Musella et al., (2022); Vatteri et al., (2022)	The SAMER project should prepare a clear analysis protocol explaining how responses will be analysed, how results from different groups will be compared, and how the findings will be translated into practical recommendations for schools.	An analysis protocol should be developed for the self-assessment tool. It should explain how responses will be analysed, how results from different groups and time points will be compared, and how schools will be helped to understand which areas strengthen or weaken their resilience.
Assembling a battery of pre-validated scales rather than building one bespoke instrument	Da'as (2023); Li, Gu & He (2019); Ibrahim & Al Azzani (2025)	Instead of designing a single new questionnaire from scratch, these studies combine several already-validated psychometric scales to triangulate related constructs - e.g. Da'as pairs the Multifactor Leadership Questionnaire with a perspective-taking scale and a readiness-for-change questionnaire; Ibrahim & Al Azzani combine the Thriving at Work Scale, internal/external resilience scales, a general self-efficacy scale and a perceived-organisational-support scale; Li, Gu & He build a validated Teacher Resilience Scale incorporating work-conditions and relational-trust subscales.	Where SAMER dimensions overlap with constructs already covered by a validated scale, adapt or adopt items from these existing validated instruments rather than writing new items from scratch.
Structured post-crisis feedback loop	Crumbley (2021)	A two-track debrief process: a supervisor check-in ("What happened? What went well? What can we improve?") and a mental-health counselor check-in ("How are you doing? Would you like a follow-up visit?"), completed after a crisis event.	Build a similar structured debrief step into the tool's post-assessment workflow, so results are followed by a defined feedback/support step, not just a score.
Large-scale standardized benchmarking with automated reporting	Bryk et al.'s (2010) 5Essentials Survey (background source)	A large-N (400+ schools) standardized survey producing percentile-based, automatically generated comparative reports for each participating school.	As SAMER scales, an automated percentile/benchmark report per school would make results more actionable than a raw self-assessment score alone.

These good practices show that the development of the SAMER tool can build on existing solutions: multi-stakeholder involvement, cross-cultural adaptation, repeated measurement, pilot testing and a clear analytical protocol. However, the review also showed that important gaps remain in existing approaches. These are discussed in the next chapter.

7. What Is Still Missing in Existing Approaches

Just as important as what existing tools do well is what they consistently fail to address. The review revealed several significant gaps in previous self-assessment tools or attempts to measure school resilience, adaptation capacity, or other components tied to change-sensitivity.

By analysing and synthesizing self-declared and non-declared Limitations across documents, the following table portrays specific points emerging from the synthesis. Consequently, gaps are interconnected to the previous recommended best practices.

Table 14. Key Gaps in Existing Approaches and How SAMER Aims to Address Them

Gap Identified in Existing Tools	Source	How SAMER addresses this gap
Few tools provide multi-stakeholder designs including students, school staff and administration, and teachers.	Szlyk et al., 2020; Crumbley, 2021; Pillay, 2022	By providing self-assessment tools that are inclusive of all school system stakeholders, including students, teachers, and school staff and administration.
While frameworks and guidance notes may exist, they often lack clear implementation guidelines or items/observable indicators	Wang et al., 2020; Yildirim & Kaya, 2019; Felver, 2016	By providing a multidimensional school resilience self-assessment tool, specific indicators are also provided to help inform actionable steps in light of case-by-case results.
Limited guidance on scoring, indicators, administering, and change sensitivity	Mirzaei et al., 2021; Li et al., 2019; Balasooriya Lekamge et al., 2025	SAMER removes the need for scoring guidance as it will provide a manual for understanding tool indicators and scoring, as well as an automated digital tool which provides automatic actionable steps.
Weak linkage between assessed dimensions and concrete outcomes.	Potts, 2024; Wilcox & Lawson, 2018; Li et al., 2019	SAMER identifies specific dimensions across the literature and will validate these dimensions with stakeholders, thus addressing this gap.
Change-sensitivity is not specifically framed nor is it central to the resilience process.	Vasel, 2025; Wang et al., 2020; Morote et al., 2020	The SAMER self-assessment tool relies heavily on change-sensitive areas, their identification and understanding, and will use change-sensitivity as an indicator of resilience building. This will be done through the construction of a tool which is able to measure at different timepoints, thus providing comparable results.
Lack of studies testing efficacy and effectivity of approaches owing to a lack of a unified school resilience tool.	Balasooriya Lekamge et al., 2025; Potts, 2024; Felver, 2016	The self-assessment tool will provide the means of understanding change-sensitive areas, stronger/weaker school resilience dimensions and how they interact. This wide understanding can then inform and support the development of whole-school or target-group specific interventions. As such, intervention impact may be re-assessed via the same tool and comparing results across time-points.
Over-reliance on self-report measurement.	Lopez, 2022; Matthews et al., 2022; Paci-Green et al., 2020; Da'as, 2023; Hastie, 2023; Shiwaku et al., 2016	Most reviewed tools rely solely on self-report, which the sources themselves flag as a limitation. SAMER's multi-stakeholder design (comparing self-report across student, teacher, and leadership groups) offsets this partially by allowing cross-checking between perspectives, though it does not eliminate self-report bias entirely.
Near-total absence of longitudinal/repeated-measures designs	Da'as, 2023; Kondakci et al., 2019; Pillay, 2022; Matthews et al., 2022; Balasooriya Lekamge et al., 2025	The large majority of existing tools are administered once, so they cannot show whether a school's resilience is improving or declining. SAMER's planned repeated-timepoint design is built specifically to close this gap.

In summary, these gaps show that the SAMER tool should be more than just another questionnaire. It should be a **structured self-assessment system** that helps schools involve different community groups, identify change-sensitive areas, understand their results and connect them to further action. These insights provide the basis for the conclusions of the review, presented in chapter 8.

8. Conclusions

This scoping review of 40 sources spanning 23 countries, 29 empirical studies, 4 conceptual frameworks, and several assessment instruments confirms that substantial, relevant knowledge about school resilience and self-assessment exists in the literature, and that it has not yet been assembled into a coherent, accessible, change-sensitive instrument for European schools.

Three overarching conclusions emerge from this review:

1

Existing knowledge is rich but fragmented

The literature on leadership during change, teacher resilience, student wellbeing, organisational learning and crisis readiness provides a meaningful, although uneven, evidence base for the six dimensions of school resilience identified in Chapter 5.

However, this knowledge belongs to different research traditions, disciplines, national contexts and school community groups. No existing tool has yet brought these strands together into a coherent, whole-school, multi-stakeholder self-assessment system. This gap is clearly visible across the review.

2

Validated and practically usable tools are rare, and their application is often context-specific

The review identified fewer than 10 clearly named and documented tools, scales or assessment frameworks, including SDRA, School Resilience Assessment Questionnaire, Teacher Resilience Scale, CYRM-28, Processes and Actions to Leading Change at Schools, the CSS survey and the nine-criteria organisational profile framework. Some of these are validated scales or questionnaires, while others are useful because of their structure, dimensions or logic of application. However, none of them is both cross-nationally validated and focused on assessing everyday organisational change-sensitivity at the school level.

The scarcity of practically usable tools shows that the task itself is complex. Nevertheless, it means that school practitioners still lack a structured, evidence-based way to better understand their school's situation and connect self-assessment results to further action.

3

Recurring gaps show what the field still needs

The gaps identified in Chapter 7 reflect practical difficulties that schools face when trying to use existing tools for development planning and improvement.

Across the reviewed literature, existing tools rarely include multiple school community groups. They often lack clearly defined indicators that can be applied consistently in practice, as well as clear guidance on how to administer the tool, calculate, analyse and interpret results over time. In addition, change-sensitivity is often not clearly defined as an ongoing process involving feedback, learning and adaptation.

These gaps show that the SAMER tool should be more than just another questionnaire. It should be a structured self-assessment system that helps schools involve different community groups, identify change-sensitive areas, understand their results and connect them to further action.

Taken together, these conclusions point in a consistent direction. The evidence for understanding school resilience is substantial - spread across leadership research, teacher wellbeing studies, student outcome measurement, organisational learning theory, and disaster preparedness frameworks. What is needed is not more evidence, but a synthesis of that evidence into something schools can use: a structured, open, multi-perspective way of understanding where they currently stand and where their energy is most needed.

The six dimensions presented in Chapter 5, the best practices identified in Chapter 6, and the gaps documented in Chapter 7 together provide a comprehensive picture of the field as it currently stands. For any school community, researcher, or policymaker seeking to understand what is known about how schools build, test, and develop their capacity to navigate change, this review provides that map.

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