

Students at Risk in Education: Participation, Access, and Support Pathways

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Citation:

Malinowska, I. (2025). Students at Risk in Education: Participation, Access, and Support Pathways. *Pedagogy and Education Management Review*, (4(22), 40–49. <https://doi.org/10.36690/2733-2039-2025-4-40-49>

Received: November 27, 2025

Approved: December 29, 2025

Published: December 31, 2025



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Abstract. Unequal participation and constrained access remain persistent barriers to educational attainment, social mobility, and inclusive development, and they shape the probability that learners disengage, experience low attainment, or drop out. The article aims to clarify how participation and access operate as distinct but interdependent dimensions of educational risk and to propose a practical framework for identifying and supporting students at risk. A structured synthesis of research and policy evidence is used to integrate global monitoring and equity frameworks with studies of participation indicators, digital exclusion, and inclusion, then translate these insights into an applied risk model. The analysis shows that access should be defined beyond enrolment to include continuity, safe learning conditions, reasonable accommodation, and meaningful opportunities to learn, while participation is conceptualized as engagement over time reflected in attendance, belonging, learning participation, and progression. The proposed model links early warning indicators to multi-tiered interventions, emphasizing disability inclusion, poverty, displacement, and digital exclusion as cumulative drivers of risk. Effective risk reduction requires integrated governance that combines ethically managed, data-informed identification with resourced school-level supports and system-level policies addressing inclusion and infrastructure. Future studies should strengthen causal evidence on intervention bundles, validate early warning systems across contexts, and develop measures that capture participation quality rather than enrolment alone.

Keywords: students at risk; participation; access to education; equity; inclusion; dropout prevention; chronic absenteeism; early warning systems; learning poverty; digital divide; disability inclusion; educational governance.

JEL Classification: M31, C55, L86, I23

Formulas: 0; **fig. 0; tabl. 2; bibl.:** 16

Introduction. Participation and access are often treated as synonymous in educational policy, yet the literature increasingly distinguishes them as separate mechanisms that shape educational risk. Global monitoring points to large numbers of children and youth who remain out of school, and to slow progress in reducing exclusion, suggesting that enrolment expansion alone is insufficient (UNESCO, 2024). At the same time, many learners who are formally enrolled experience interrupted schooling, low attendance, or weak learning, which means that access without participation can produce limited educational benefit. The World Bank’s work on learning poverty highlights that schooling does not guarantee learning, and that crises and inequality can deepen both exclusion and learning deprivation (World Bank, 2020; World Bank, 2023). The OECD’s equity and inclusion framework emphasizes that education systems must respond to diversity through governance, resourcing, capacity building, school-level interventions, and monitoring, implying that risk is multi-level rather than an individual deficit (OECD, 2023). UNICEF’s research on children’s digital lives adds that lack of digital access and skills can exacerbate inequalities, especially when learning opportunities increasingly depend on technology (UNICEF Innocenti, 2025).

Within this context, “students at risk” should be approached as a relational and systemic category, reflecting how institutions allocate resources, design learning environments, and respond to vulnerability. This article develops an applied framework to connect access and participation to risk identification and intervention design, while keeping attention on inclusion and rights, particularly for children with disabilities and learners affected by poverty, displacement, and crises (UNESCO, 2020; World Bank, 2025).

Literature review. The literature increasingly treats “students at risk” as a contextual probability of adverse educational outcomes rather than an individual deficit label. This shift is visible in equity-oriented frameworks that emphasize how governance, resourcing, and school-level supports shape risk exposure and protection. The OECD’s equity and inclusion work argues that education systems should be analyzed across policy areas such as governance, resourcing, capacity building, school interventions, and monitoring, which implies that risk is produced by institutional arrangements as much as by learner circumstances (OECD, 2023). Global monitoring further reinforces the distinction between access and participation by documenting persistent out-of-school populations, indicating that entry into schooling remains a structural challenge in many settings (UNESCO, 2024). At the same time, research on learning crises highlights that enrolment does not guarantee learning, which positions participation as sustained, meaningful engagement in learning conditions that enable progress (World Bank et al., 2022). Consequently, access is best defined as the opportunity to enter and remain in education under enabling conditions, while participation

is the degree to which learners engage over time through attendance, classroom involvement, assessment participation, belonging, and progression. These definitions support a two-pathway model in which constrained access leads to exclusion and discontinuity, while weak participation leads to disengagement and dropout even among enrolled learners.

Evidence consistently links educational risk to intersecting structural disadvantages, particularly poverty, disability, geographic marginalization, and crisis-related displacement. UNESCO reporting indicates that the global out-of-school population remains large, with estimates indicating hundreds of millions of children and youth out of school as of 2023, and only modest progress since 2015 (UNESCO, 2024). Learning poverty research emphasizes that foundational learning deprivation can worsen when systems face shocks and when disadvantaged learners experience reduced instructional time and weaker learning supports (World Bank et al., 2022). Equity frameworks interpret these patterns as consequences of unequal resourcing, segmented provision, and insufficient capacity to respond to diversity (OECD, 2023). Disability inclusion literature, including policy guidance, frames access as inseparable from reasonable accommodation and accessible learning environments, because barriers may be physical, pedagogical, communicational, and social rather than solely logistical (World Bank, 2025). This implies that participation risks for learners with disabilities may arise from classroom design, support availability, and school climate even when enrolment is stable. Across these strands, “risk” is better described as cumulative and interactive, where multiple barriers compound to undermine continuity and engagement.

Digital access has become a salient determinant of participation, particularly where learning opportunities rely on connectivity, devices, and digital skills. The joint UNICEF and ITU analysis estimates substantial gaps in home internet access for children and young people, with strong gradients by income, residence, and household wealth (UNICEF & ITU, 2020). Complementary evidence from UNICEF Innocenti emphasizes that lack of digital access can influence digital skills development and can exacerbate inequalities, suggesting a feedback loop where exclusion reduces capability and capability constraints reduce participation (UNICEF Innocenti, 2025). This line of work supports treating digital access as a component of educational access, because limited connectivity can restrict continuity in blended or remote learning and can reduce participation in digitally mediated assignments, communication, and support services. The literature therefore recommends that digital inclusion strategies combine infrastructure provision with support for skills and accessible design, rather than assuming that connectivity alone closes participation gaps.

Participation risk is frequently operationalized through early warning indicators, especially attendance, course performance, and behavior-related

measures. Balfanz and colleagues' work on chronic absenteeism positions attendance as a powerful indicator because sustained absence often precedes course failure, disengagement, and dropout pathways (Balfanz & Byrnes, 2012). State-of-the-field syntheses describe early warning systems as an innovation that uses routinely collected school data to identify students off track and to trigger intervention supports, while noting that identification is only effective when linked to timely, resourced responses (Balfanz, 2018). Policy evidence also shows that schools commonly collect attendance, course grades, and discipline data as core inputs to early warning practices (U.S. Department of Education, 2016). However, the literature warns that indicator-based systems can produce harm if they stigmatize learners or if risk scores become surveillance tools rather than support triggers. For this reason, ethical use requires transparency, proportionality, and safeguards to ensure that risk signals prompt supportive interventions and preserve learner dignity.

A consistent conclusion across equity and dropout-prevention research is that single interventions rarely address multi-causal risk. Instead, multi-tiered support models are recommended, combining universal conditions that promote belonging and engagement with targeted and intensive supports for learners facing compounding barriers. Equity frameworks emphasize system-level alignment across governance and resourcing so that schools can implement interventions with fidelity (OECD, 2023). Inclusion guidance further stresses barrier removal and accommodation, indicating that participation supports must include accessibility measures and specialized services where needed (World Bank, 2025). Early warning literature reinforces that identification without intervention capacity is insufficient and can erode trust if flagged students do not receive meaningful support (Balfanz, 2018). In synthesis, interventions should be designed to address both access constraints, such as transport, affordability, and accommodation, and participation constraints, such as attendance patterns, belonging, and instructional support.

Aim. This article aims to conceptualize “students at risk” through the combined lenses of participation and access, showing how each dimension produces distinct pathways to disengagement, low attainment, and dropout. It further aims to synthesize interdisciplinary evidence on structural drivers of risk, including poverty, disability, displacement, and digital exclusion, and to connect this evidence to practical implications for equitable identification and support. A final aim is to outline governance-relevant implications for early warning and multi-tiered interventions that strengthen educational continuity and meaningful engagement rather than merely increasing enrolment.

Methodology. The study employs a structured narrative literature review with thematic synthesis. Sources are selected to cover four evidence strands: global monitoring of access and exclusion, research on participation

and disengagement indicators, equity and inclusion frameworks that interpret risk as systemic, and digital access research relevant to participation in technology-mediated learning. The review prioritizes high-quality institutional reports and peer-reviewed scholarship, then codes findings into analytic themes: access barriers, participation mechanisms, measurement and early warning, and intervention architectures. The synthesis is used to develop an integrative conceptual model linking access and participation to risk pathways, while explicitly noting implementation constraints such as institutional capacity, service availability, and ethical risks of stigmatization when monitoring systems are applied without safeguards.

Results. The term “students at risk” is widely used to describe learners with elevated probability of adverse outcomes such as grade repetition, dropout, and low attainment. Conceptually, risk can be modelled as the interaction between exposure to barriers and the availability of protective supports, rather than as an inherent learner characteristic. In this view, access refers to the opportunity to enter and remain in education under conditions that enable learning, including affordability, safety, proximity, accommodation for disability, language support, and continuity of provision. UNESCO’s inclusion framing stresses that inclusion is a process of addressing barriers and building belonging, which strengthens a definition of access that includes participation conditions rather than admission alone (UNESCO, 2020). Participation refers to sustained engagement in learning activities over time, reflected in attendance, classroom involvement, assessment participation, social belonging, and progression. These components matter because absenteeism, marginalization, and disengagement can precede dropout even when enrolment is stable.

A practical implication is that risk should be monitored through both access indicators and participation indicators, and interpreted through a contextual lens. For example, a learner may have nominal access but low participation due to bullying, disability-related barriers, or unsafe travel routes. Conversely, a learner may have strong motivation but limited access due to costs, displacement, caregiving responsibilities, or lack of schools. Policy frameworks that treat diversity and equity as system properties imply that schools must be supported by governance and resourcing structures that can respond to these patterns (OECD, 2023). The following table summarizes the access and participation dimensions and illustrates typical indicators used for risk monitoring.

Table 1 clarifies how access and participation represent distinct pathways to educational risk, with indicators that can support early identification when interpreted ethically and contextually.

Table 1. Access and participation dimensions of student risk

Dimension	What it captures	Illustrative indicators	Typical risk outcome pathway
Access	Entry and continuity under enabling conditions	Out-of-school status; enrolment discontinuity; distance to school; affordability barriers; lack of reasonable accommodation	Exclusion, delayed entry, interrupted schooling, grade repetition
Participation	Engagement and involvement over time	Chronic absenteeism; low classroom engagement; limited assessment participation; weak belonging; low progression rates	Disengagement, learning loss, dropout, low attainment
Learning conditions	Quality and safety of the learning environment	Unsafe schools; bullying; inaccessible infrastructure; inadequate support services	Reduced participation, trauma, withdrawal, dropout
Digital access	Ability to participate in digitally mediated learning	Device scarcity; low connectivity; limited digital skills; inaccessible platforms	Reduced participation in blended or remote learning, widened inequity

Source: systematized by the author

Differentiating access from participation enables more precise diagnosis of risk mechanisms and supports interventions that address structural barriers alongside learner support.

Evidence across global and comparative sources indicates that poverty, disability, displacement, and geographic marginalization are major drivers of both exclusion and disengagement. UNESCO monitoring reports that, as of 2023, hundreds of millions of children and youth remain out of school, with limited change over the SDG 4 period, indicating structural persistence rather than temporary disruption (UNESCO, 2024). The World Bank's learning poverty analyses show that learning deprivation is closely linked to inequality and that shocks such as school closures can intensify both access gaps and learning loss, especially for disadvantaged learners (World Bank, 2020; World Bank, 2023). The OECD highlights that equity and inclusion require coordinated policy action across governance, resourcing, and school-level supports, suggesting that risk is often produced by system design and underinvestment rather than individual choices (OECD, 2023).

Disability inclusion is a particularly salient dimension of access and participation because barriers may be physical, pedagogical, communicational, and social. Inclusive education guidance emphasizes the removal of barriers and the provision of accessible learning environments, reasonable accommodation, and targeted supports so that learners can participate meaningfully (UNESCO, 2020; World Bank, 2025). Displacement and crisis conditions can also disrupt continuity, create documentation barriers, and undermine safety, which affects both access and participation even when emergency schooling is available. In these contexts, participation often depends on psychosocial support, language support, transport solutions, and flexible learning options.

Digital exclusion has become a cross-cutting driver. UNICEF and ITU estimated that large shares of school-age children lack internet access at

home, which constrains participation when learning opportunities rely on connectivity (UNICEF & ITU, 2020). More recent UNICEF Innocenti work emphasizes that lack of access can influence digital skills development and may exacerbate inequalities, particularly for disadvantaged children (UNICEF Innocenti, 2025). This means that digital infrastructure, device availability, and accessible platforms are not merely technical choices but equity determinants that shape risk.

Early warning systems are increasingly promoted to identify students at risk of dropout and target support before disengagement becomes irreversible. The World Bank's recent program and evidence summaries describe early warning approaches as potentially scalable tools when they combine accurate identification with actionable, resourced interventions (World Bank, 2025a). At the same time, warning systems must be implemented carefully to avoid stigmatization, privacy violations, or self-fulfilling labels, especially when indicators correlate with poverty, disability, or minority status.

Ethically grounded early warning requires transparency about what data are collected, proportionality of data use, and safeguards against punitive responses. The relevant literature emphasizes that risk signals should trigger support, not surveillance, and that schools need capacity to respond, otherwise identification can become symbolic. Multi-source indicators are preferable to single-score classification, because student risk is heterogeneous and context dependent. Schools also need interpretive guidance so that attendance, grades, and behavior are not treated as purely individual failings. The OECD's monitoring and evaluation emphasis supports this approach by positioning data as a governance tool tied to inclusion strategies rather than a ranking instrument (OECD, 2023). In practice, effective identification is inseparable from intervention readiness.

Interventions are most effective when they combine system-level barrier reduction with school-level supports and learner-centered services. Inclusive education guidance from the World Bank stresses that addressing systemic barriers and meeting diverse needs are prerequisites for tackling learning crises, implying that interventions must extend beyond individual remediation (World Bank, 2025). Similarly, UNESCO's inclusion framing emphasizes belonging and barrier removal as conditions for meaningful participation (UNESCO, 2020). A practical structure is a multi-tiered model that aligns intervention intensity with need while ensuring universal supportive conditions for all learners. The following table summarizes tiers, mechanisms, and examples.

Table 2 connects common risk pathways to intervention tiers that combine universal design with targeted and intensive supports.

Table 2. Multi-tiered supports for students at risk: participation and access

Tier	Primary aim	Typical mechanisms	Examples of measures
Universal	Prevent risk by improving conditions for all	Inclusive pedagogy; safe climate; accessible infrastructure; attendance culture	Universal design for learning; anti-bullying programs; school meals; transport supports
Targeted	Address emerging disengagement	Early support triggered by indicators; mentoring; tutoring	Attendance teams; small-group tutoring; family outreach; language support
Intensive	Stabilize high-risk cases and remove severe barriers	Case management; coordinated social and health services; flexible pathways	Individual learning plans; disability accommodations; psychosocial services; re-entry programs

Source: systematized by the author

Multi-tiered supports reduce risk more sustainably when universal inclusion is paired with targeted and intensive responses that address structural barriers and service needs.

Digital inclusion strategies require particular attention because technology can either widen or reduce participation gaps. Policies that subsidize connectivity, provide devices, and ensure accessibility features can strengthen access, but only if accompanied by teacher capacity building and learner support. The UNICEF Innocenti evidence suggests that digital inequity shapes skills development, so intervention must combine access provision with capability development (UNICEF Innocenti, 2025). In addition, crisis-resilient education systems require continuity planning, including alternative delivery modes, safe school infrastructure, and rapid support for displaced learners, since disruption is increasingly common in many regions.

Discussion. The reviewed literature supports three main arguments. First, defining “students at risk” through both access and participation reduces conceptual ambiguity and avoids deficit framing, because it highlights that risk is often produced by structural barriers and institutional capacity constraints rather than by learner traits (OECD, 2023; UNESCO, 2024). Second, the evidence indicates that participation should be treated as a dynamic process, where attendance, course performance, and belonging interact, and where chronic absenteeism functions as a high-signal indicator but not a sufficient explanation (Balfanz & Byrnes, 2012; Balfanz, 2018). This supports governance approaches in which early warning indicators are used to trigger support pathways, not punitive monitoring, and are complemented by professional judgement and contextual information. Third, digital exclusion operates as a contemporary participation constraint that can widen inequalities when education depends on connectivity and digital competence, so access policies must increasingly incorporate digital infrastructure, skills, and accessibility design (UNICEF & ITU, 2020; UNICEF Innocenti, 2025).

A key implementation tension concerns measurement and ethics. Indicator systems can improve timeliness of support, yet they can also reproduce inequities if risk classifications correlate with poverty, disability, or minority status and if interventions are not equitably resourced. The literature therefore implies that ethical governance is not separate from effectiveness, because trust, transparency, and perceived legitimacy shape whether learners and families engage with supports. Another tension concerns capacity: global monitoring identifies persistent exclusion, while learning poverty evidence suggests that even enrolled learners may not receive adequate opportunities to learn, which means that risk reduction depends on system-level investments in quality and inclusion, not only targeted programs (UNESCO, 2024; World Bank et al., 2022). In sum, the most defensible approach is an integrated model: barrier reduction for access, multi-tiered supports for participation, and carefully governed early warning practices embedded within equity-focused system design.

Conclusion. Students at risk should be understood through the combined lenses of participation and access, because each dimension can independently drive exclusion and low attainment, and their interaction often produces cumulative disadvantage. Global monitoring and equity frameworks indicate that exclusion remains large and progress can be slow, while learning poverty and digital gaps show that enrolment alone does not guarantee meaningful educational opportunity (UNESCO, 2024; UNICEF & ITU, 2020; World Bank, 2023). Effective responses require integrated governance that links ethically managed identification to resourced interventions, alongside system reforms that address poverty, disability inclusion, displacement, and infrastructure gaps (OECD, 2023; UNESCO, 2020; World Bank, 2025). Early warning systems can support timely action when they trigger supportive responses rather than punitive surveillance and when schools have capacity to implement interventions (World Bank, 2025a).

Further research should strengthen causal evidence on intervention bundles across diverse contexts and age groups, including the relative contribution of attendance support, tutoring, psychosocial services, and financial incentives. More work is needed to validate early warning indicators across settings without reproducing bias, and to develop measures of participation quality that capture belonging and engagement rather than attendance alone. Finally, the field should examine how digital inclusion policies affect both participation and learning outcomes, particularly for learners with disabilities and those in low-resource or crisis settings (UNICEF Innocenti, 2025).

Funding. The author declare that no financial support was received for the research, authorship, and/or publication of this article.

Conflict of interest. The author declare that the research was conducted in the absence of any commercial or financial relationships that could be

construed as a potential conflict of interest.

Generative AI statement. The author declare that no Generative AI was used in the creation of this manuscript.

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