

Family Resilience in Online Tahfidz Learning During Haze Pollution Crises: A Vygotskian Theoretical Perspective

Yopi Ardila¹, Ahsan Hakim²

^{1,2} Pascasarjana nstitut Ahmad Dahlan Probolinggo, Indonesia

Email : yopiardila75@gmail.com¹, ahsanhakim1988@gmail.com²

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ABSTRACT

Haze pollution associated with vegetation and peatland fires can disrupt face-to-face instruction and intensify the difficulties of sustaining Qur'anic memorisation (tahfidz), an activity requiring regular recitation, murāja'ah (revision), corrective feedback and motivation. This article develops an integrative conceptual account of how family resilience may support online tahfidz learning during such disruptions. An integrative, purposive review of 27 DOI-identified scholarly publications was organised around Qur'anic education, emergency remote learning, family resilience, sociocultural assistance, and environmental disruption. Sources were compared through a transparent concept-by-evidence matrix and interpreted using Walsh's family-resilience framework and the Vygotskian concepts of the zone of proximal development and scaffolding. The synthesis suggests three connected mechanisms: family adaptation establishes feasible routines and mobilises resources; parent-teacher-learner interaction maintains pedagogical and emotional communication; and calibrated scaffolding provides modelling, feedback and progressively withdrawn assistance. A proposed framework distinguishes enabling conditions, educational practices and hypothesised outcomes, while recognising inequalities in connectivity, parental time and instructional competence. The evidence supports conceptual plausibility rather than demonstrating effectiveness in haze-affected tahfidz households, because no primary field data were collected. The article contributes a crisis-responsive model that can inform the design of home-school collaboration and subsequently be tested with families, teachers and students in affected areas.

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INTRODUCTION

Qur'anic memorisation (tahfidz) is a distinctive form of Islamic education in which new memorisation, recitation accuracy, regular murāja'ah and feedback need to be sustained together. Virtual teaching can maintain contact between teachers and learners, yet its effectiveness cannot be inferred from the presence of a video platform alone. Indonesian studies have documented adaptations in virtual tahfidz and pandemic-era Qur'anic memorisation (Kaltsum & Muhammad, 2022; Susanto et al., 2021), while research on digital engagement highlights the importance of guidance and learning structure (Sufihara & A'isah, 2025).

Environmental emergencies create a different, insufficiently examined reason for moving instruction into homes. Smoke haze arising from forest and land fires can reduce outdoor activity and interrupt educational arrangements, especially for children. Indonesian research has described changes in family educational patterns during the haze emergency in Pekanbaru (Giantara et al., 2020), and recent health research has emphasised child vulnerability to smoke exposure (Haryanto et al., 2026). Historical evidence from Indonesia links wildfire-related air pollution to early-life mortality, rather than directly establishing changes in school achievement (Jayachandran, 2009). These sources support the relevance of disaster-responsive educational planning but do not establish the frequency or educational consequences of online tahfidz during haze episodes.

Families become central when learning shifts home. Yet their resources are uneven, and increased responsibility can also create burdens. Reviews of remote education associate home learning with disparities in access, motivation and socioeconomic conditions (Cortés-Albornoz et al., 2023; Wen et al., 2021). Survey and review evidence indicates that parents adopt different approaches to distance learning and encounter competing responsibilities and limited digital or pedagogical capacity (Knopik et al., 2021; Carrión-Martínez et al., 2021; Maimaiti et al., 2025). Therefore, family involvement should not be romanticised as a universally available substitute for teaching.

Family resilience offers a more precise lens than parental involvement alone. Walsh (1996, 2003) conceptualises resilient family processes through shared meaning and beliefs, flexible organisation, and communication/problem-solving. Reviews of families under COVID-19 stress show the significance of adaptive functioning while also warning that socioeconomic constraints shape caregivers' experiences (Gayatri & Irawaty, 2022; Tetlow et al., 2024; Yates & Mantler, 2023). Applied to tahfidz, resilience refers here to a family's potential capacity to sustain or recalibrate educational support during disruption; it is not a score or empirically observed attribute of any particular household.

A sociocultural perspective explains how such support could become pedagogically productive. The zone of proximal development (ZPD) concerns what a learner can accomplish with appropriate assistance compared with independent performance. Scaffolding, a later pedagogical elaboration associated with sociocultural learning, describes temporary, contingent support

rather than mere parental supervision. Reviews and meta-analyses indicate that well-designed scaffolding can support online learning, although most evidence comes from broader educational settings and should not be treated as direct evidence for Qur'anic memorisation (Doo et al., 2020; Zuo et al., 2023; Edisherashvili et al., 2022).

Three literature streams have thus often been developed separately: haze-related educational disruption, family resilience under stress, and pedagogical support in online learning. Their intersection is not established by the cited studies, and the absence of a study cannot be proved by a selective review. The contribution of this article is instead to formulate an explicitly provisional explanation for how families, teachers and digital communication may cooperate to protect continuity in tahfidz during haze-related disruption. The guiding questions are: (1) Which family and educational mechanisms can be inferred from relevant prior research? (2) How may those mechanisms be integrated into a Vygotskian conceptual framework without overstating their empirical support?.

METHODS

This study adopts a descriptive qualitative approach through library research to describe and interpret the relationship between family resilience, online tahfidz learning, and sociocultural learning support during haze pollution crises. The unit of analysis is published scholarly literature rather than individual participants or educational institutions. The analytical material comprises 27 cited publications addressing Qur'anic memorisation, family resilience, parent-teacher engagement, learning scaffolding, and environmental or emergency disruption. The cited-publication count should not be understood as the result of an exhaustive database search. Sources were considered for their conceptual relevance, substantive focus, and the strength and applicability of their evidence; foundational works were retained alongside more recent publications. The study does not claim to implement a systematic review protocol, conduct field observations, interview respondents, or calculate pooled statistical effects.

Data collection consisted of identifying and reading relevant books and journal publications, extracting key arguments and reported findings, and classifying information according to the themes of crisis disruption, family adaptation, educational interaction, pedagogical assistance, and learning continuity. The descriptive analysis proceeded through careful reading, classification, comparison of source claims, and narrative interpretation informed by Vygotsky's zone of proximal development and the family-resilience perspective. Empirical findings from previous studies were distinguished from the authors' conceptual inferences; evidence from pandemic remote learning or general online education was not represented as direct evidence from haze-affected tahfidz classes. Credibility was pursued through comparison across disciplinary sources, contextual interpretation, and explicit acknowledgment of the limits of transferring findings to a different educational setting.

The synthesis is presented descriptively: the Results section reports the thematic patterns and conceptual components generated by the analysis without

in-text literature citations, whereas the Discussion section explicitly compares those patterns with prior scholarship and explains the proposed framework. As a literature-based study, the findings describe an interpretive model that requires subsequent empirical validation; they do not demonstrate causal relationships or measured improvements in memorisation outcomes.

RESULT AND DISCUSSION

Result

Family Adaptation and Educational Support Mechanisms in Online Tahfidz Learning During Haze Crises

The descriptive synthesis identifies three interrelated mechanisms through which family resilience may support the continuity of online tahfidz learning during haze-related educational disruption: adaptive household organisation, coordinated educational interaction, and structured pedagogical assistance. These mechanisms emerge from the conceptual integration of literature concerning environmental emergencies, family resilience, Qur'anic memorisation, remote learning, and sociocultural educational support. Rather than representing empirically observed practices in haze-affected tahfidz households, the findings describe potential forms of educational adaptation that may become relevant when conventional learning arrangements are interrupted. Their applicability depends on household circumstances, institutional support, learners' needs, and the availability of appropriate communication technologies.

The first mechanism concerns family adaptation through shared beliefs, flexible organisation, and collaborative problem-solving. Within the context of online tahfidz learning, these dimensions can be interpreted as the household's potential capacity to maintain educational routines while responding to changing environmental and domestic circumstances. Shared educational commitments may encourage family members to prioritise memorisation and revision activities despite disruption. Organisational flexibility may allow learning schedules and memorisation targets to be adjusted according to available time, health considerations, and household responsibilities. Communication and problem-solving may further support negotiations among family members concerning learning expectations and practical difficulties. Nevertheless, these adaptive capacities cannot be assumed to operate equally across households, particularly where limited connectivity, parental employment, competing responsibilities, or restricted learning resources constrain educational participation.

The second mechanism involves coordinated interaction among teachers, parents, and learners. The synthesis indicates that the continuity of online tahfidz learning requires differentiated but complementary responsibilities rather than a complete transfer of instructional duties from educational institutions to families. Teachers remain responsible for modelling accurate Qur'anic recitation, correcting pronunciation, evaluating memorisation quality, and determining appropriate instructional progression. Parents may support these activities by facilitating access to learning sessions, maintaining manageable routines, encouraging participation, and communicating difficulties to teachers. Learners contribute through repeated recitation, revision, responsiveness to feedback, and the gradual development of independent learning habits. Digital platforms provide channels

through which these interactions may occur, but technological availability alone does not ensure pedagogical continuity. The effectiveness of communication remains dependent on instructional clarity, consistent engagement, and the feasibility of household participation.

The third mechanism concerns structured pedagogical assistance that responds to learners' existing capabilities and changing educational needs. In online tahfidz learning, such assistance may begin with identifying verses that learners can recite independently and determining memorisation tasks requiring additional guidance. Teachers may then provide recitation models, corrective feedback, and manageable learning targets, while parents facilitate repetition and offer reminders without assuming specialist instructional responsibilities. As learners demonstrate greater competence, prompts and direct assistance may gradually be reduced to encourage self-correction and independent murāja'ah. This process represents a potential transition from supported performance towards increasing learner responsibility. However, it remains a conceptual instructional sequence rather than a validated intervention specifically examined during haze pollution crises.

Taken together, these mechanisms suggest that family resilience in online tahfidz learning can be understood as an adaptive educational capacity involving household organisation, coordinated communication, and responsive learning assistance. The mechanisms are interdependent but do not necessarily operate in a fixed sequence or produce uniform outcomes. Household adaptation may facilitate communication, while teacher–parent coordination may improve the feasibility of guided learning activities. Structured assistance may subsequently provide opportunities for learners to develop greater independence, although the extent of such development remains contingent on individual and contextual conditions. The synthesis therefore identifies plausible educational support mechanisms without establishing their causal influence on memorisation achievement or demonstrating their effectiveness in haze-affected households.

Integration of Family Resilience and Vygotskian Scaffolding: A Conceptual Framework

The integration of the identified mechanisms produces a provisional Family Resilience–Scaffolding Framework (FRSF) for understanding educational continuity in online tahfidz learning during haze pollution crises. The framework brings together household adaptive capacity, differentiated educational responsibilities, and structured learning assistance within a sociocultural interpretation of learning. It distinguishes between contextual enabling conditions, family adaptation, educational interaction, pedagogical scaffolding, and potential learning outcomes. These components provide an analytical structure for examining how educational support might be organised when environmental disruption requires learners to continue Qur'anic memorisation from home. The framework does not assume that family resilience independently determines educational achievement or that the presence of learning assistance necessarily produces successful memorisation.

The first component consists of enabling conditions that influence the feasibility of educational participation. These include access to appropriate

communication devices, reliable or alternative learning channels, sufficient time for household support, teacher availability, and safe indoor learning arrangements. Environmental restrictions, children's health needs, and socioeconomic differences may further influence the extent to which these conditions can be maintained. Within this context, family adaptation constitutes the second component, involving the development of flexible learning schedules, manageable memorisation targets, shared responsibilities, and emotional support. These arrangements may help households accommodate educational activities without disregarding the practical demands and limitations experienced during a crisis.

The third component concerns mediated educational interaction among teachers, parents, and learners. Communication provides opportunities to exchange learning instructions, report memorisation difficulties, receive corrective feedback, and adjust expectations according to learners' progress. The fourth component involves contingent scaffolding, through which educational assistance is adjusted to learners' demonstrated capabilities. This process may include teacher modelling, guided recitation, targeted correction, repeated practice, and gradual reduction of support as learners become more capable of performing tasks independently. Within the proposed framework, family support facilitates access and continuity, whereas specialist pedagogical judgement remains primarily the responsibility of qualified teachers. This differentiation is intended to prevent household involvement from being interpreted as a substitute for professional tahfidz instruction.

The final component concerns provisional educational outcomes, including the continuity of memorisation activities, recitation accuracy, sustained murāja'ah, learning motivation, and increasing learner independence. These outcomes are conceptual expectations that could be investigated through subsequent empirical research rather than achievements demonstrated by the present study. The framework also recognises that enabling conditions and contextual constraints may influence relationships among its components. Consequently, the proposed integration should be understood as a set of theoretically informed relationships rather than a deterministic instructional sequence or an empirically established causal model.

Tahfidz Learning During Haze Crises

Framework Component	Illustrative Educational Practice	Responsible Actor	Potential Indicator for Future Research
Enabling conditions	Access to learning devices, safe indoor schedules, and low-data communication channels	Educational institution and household	Learning access and frequency of missed sessions
Family adaptation	Flexible memorisation targets, brief scheduled murāja'ah, and adjusted household routines	Household and learner	Routine stability and manageable learning workload
Educational	Teacher feedback,	Teacher,	Frequency and

interaction	parental communication, and progress reporting	parent, and learner	responsiveness of educational communication
Pedagogical scaffolding	Recitation modelling, guided practice, corrective feedback, and progressive self-correction	Teacher, with parental facilitation	Level and frequency of learning assistance required
Provisional learning outcomes	Sustained memorisation revision, accurate recitation, and increasing independence	Learner	Memorisation retention, teacher-rated accuracy, and self-regulated learning

Table 1. Proposed Family Resilience-Scaffolding Framework for Online

The conceptual pathway can be summarised as follows: haze-related educational disruption creates contextual challenges that interact with household and institutional enabling conditions; family adaptation and parent-teacher-learner communication may support structured pedagogical assistance; and appropriately calibrated scaffolding may provide opportunities for continued memorisation and greater learner independence. Family adaptation and educational communication are treated as mutually influential rather than strictly sequential processes. Socioeconomic inequality, connectivity limitations, caregiver availability, and child health remain contextual constraints across the framework. Accordingly, the FRSF provides an interpretive model that clarifies theoretically plausible relationships and identifies components requiring empirical investigation.

Discussion

Interpreting Family and Educational Support Mechanisms Through Previous Research

The first research question examined which family and educational mechanisms could be inferred from relevant prior research to explain the potential continuity of online tahfidz learning during haze pollution crises. The findings identify household adaptation, coordinated educational interaction, and contingent pedagogical assistance as three interconnected mechanisms. Their interpretation is consistent with existing scholarship on family resilience, emergency remote learning, and Qur'anic memorisation, although the available literature does not establish their combined operation in haze-affected tahfidz households. This distinction is important because conceptual relevance should not be confused with direct empirical evidence from the specific educational context under investigation.

The identification of household adaptation as a potential educational support mechanism corresponds with Walsh's (1996, 2003) conceptualisation of family resilience through belief systems, organisational flexibility, and communication processes. Within the proposed framework, these dimensions are interpreted as resources that may help families organise learning routines, negotiate responsibilities, and maintain educational motivation during disruption.

Gayatri and Irawaty (2022) similarly highlight adaptive family functioning during the COVID-19 pandemic, while Tetlow et al. (2024) and Yates and Mantler (2023) demonstrate the relevance of resilience-related processes among families experiencing adversity. Nevertheless, these studies do not directly examine online tahfidz during haze events. Their contribution to the present analysis therefore concerns the conceptual plausibility of adaptive family processes rather than evidence that particular resilience practices improve Qur'anic memorisation outcomes under environmental crisis conditions.

Environmental disruption provides an important contextual consideration for interpreting these mechanisms. Giantara et al. (2020) documented changes in family educational patterns during haze emergencies in Pekanbaru, indicating that environmental crises can alter the organisation of household education. Haryanto et al. (2026) further emphasise child health vulnerabilities associated with smoke haze, while Jayachandran (2009) demonstrates serious health consequences associated with wildfire-related air pollution in Indonesia. These studies establish the relevance of environmental disruption and household vulnerability but do not directly demonstrate how haze affects memorisation accuracy, learning motivation, or teacher-student interaction in online tahfidz programmes. Accordingly, the proposed relationship between haze-related disruption and tahfidz learning continuity remains an interpretive extension that requires contextual verification.

The second identified mechanism, coordinated educational interaction, is supported by research on remote Qur'anic learning and parental engagement. Susanto et al. (2021) and Kaltsum and Muhammad (2022) describe adaptations to tahfidz instruction under remote learning arrangements, while Sufihara and A'isah (2025) examine learner engagement in online memorisation programmes. These studies indicate that maintaining pedagogical communication is a relevant concern when Qur'anic instruction moves beyond conventional face-to-face settings. At the same time, Carrión-Martínez et al. (2021), Knopik et al. (2021), and Maimaiti et al. (2025) highlight the diversity of parental responsibilities, resources, and capacities in remote education. Their findings support the need to distinguish family facilitation from professional instructional responsibilities. Parents may assist with schedules, communication, encouragement, and access, but specialised recitation correction and memorisation assessment should remain under qualified teachers' guidance.

The third mechanism, contingent pedagogical assistance, can be interpreted through the sociocultural concepts of the zone of proximal development and scaffolding. Within a Vygotskian perspective, the relationship between independently achievable tasks and tasks requiring assistance offers a theoretical basis for adjusting educational support to learners' capabilities. Scaffolding should nevertheless be understood as a subsequent pedagogical elaboration associated with sociocultural learning rather than a concept originally formulated by Vygotsky in its contemporary instructional form. Doo et al. (2020) and Zuo et al. (2023) provide broader evidence concerning scaffolding in online learning, while Banson (2022) examines co-regulated learning in digital environments. These studies support the educational relevance of guided assistance, feedback, and the

progressive development of learner responsibility. However, their findings should not be interpreted as direct evidence that a particular scaffolding sequence improves Qur'anic memorisation during haze-related disruption.

An important implication of these comparisons is that family resilience and pedagogical scaffolding represent related but analytically distinct forms of educational support. Family resilience concerns the organisation and adaptation of household resources under adversity, whereas scaffolding concerns the contingent assistance provided to accomplish learning tasks that learners cannot yet complete independently. Educational interaction connects these domains by enabling teachers and families to coordinate responsibilities according to their respective capabilities. This distinction avoids reducing resilience to parental supervision or treating regular family involvement as equivalent to effective pedagogical guidance. It also recognises that socioeconomic constraints, limited digital access, and caregiver burden may restrict the feasibility of home-based educational support (Cortés-Albornoz et al., 2023; Wen et al., 2021).

Overall, the comparison with previous research supports the conceptual relevance of the three identified mechanisms while clarifying the limits of their evidential foundation. Existing scholarship provides separate insights into environmental disruption, adaptive family functioning, remote tahfidz instruction, and pedagogical assistance. The present study connects these strands within a specific educational problem but does not establish that the proposed mechanisms have been observed together or that they produce measurable improvements in memorisation outcomes. The contribution of the first research question therefore lies in identifying and differentiating potentially relevant support mechanisms that can inform the construction of a more explicit theoretical framework.

Theoretical Contributions and Limitations of the Family Resilience–Scaffolding Framework

The second research question addressed how the identified mechanisms could be integrated into a Vygotskian conceptual framework without overstating the available empirical evidence. The proposed Family Resilience–Scaffolding Framework responds to this question by distinguishing contextual enabling conditions, adaptive household processes, mediated educational interaction, contingent instructional assistance, and hypothesised learning outcomes. This integration provides a provisional explanation of how educational continuity might be supported during haze-related disruption while maintaining a clear separation between findings reported in previous scholarship and conceptual relationships proposed by the present study. The framework is therefore intended as an analytical and design-oriented contribution rather than an empirically validated model of instructional effectiveness.

The primary theoretical contribution lies in positioning family resilience as an educational coordination capacity rather than equating it with parental commitment or the mere availability of household assistance. Walsh's (1996, 2003) family-resilience perspective explains how family systems may adapt through shared meaning, flexible organisation, and communication, while the Vygotskian concepts of assisted performance and the zone of proximal development help

explain the educational significance of support adjusted to learner competence. Integrating these perspectives allows the framework to distinguish the conditions that make assistance feasible from the pedagogical practices through which learning may be supported. This distinction is particularly relevant to online tahfidz because families can facilitate memorisation routines and communication without necessarily possessing the specialised knowledge required to evaluate Qur'anic recitation.

The framework also clarifies the relationship between family adaptation and the gradual development of learner autonomy. Rather than assuming that parental involvement must remain constant, contingent scaffolding provides a conceptual basis for adjusting assistance as learners demonstrate greater competence. Teacher modelling, corrective feedback, guided repetition, and opportunities for self-correction may support a transition towards increasingly independent murāja'ah. This interpretation is compatible with broader research on self-regulated learning in digital and distance-learning contexts, including Edisherashvili et al. (2022) and Faza and Lestari (2025). Nevertheless, evidence concerning self-regulation from different learner populations and educational environments cannot be transferred automatically to children engaged in Qur'anic memorisation. Learner age, memorisation proficiency, instructional resources, and the quality of family support should therefore be treated as conditions influencing the applicability of the proposed framework.

A further contribution concerns the differentiation between enabling conditions, educational mechanisms, and potential outcomes. The framework does not assume that access to digital technology or the presence of resilient family processes is sufficient to sustain learning. Instead, connectivity, safe learning arrangements, caregiver availability, and teacher access establish conditions under which adaptation and instructional interaction may become feasible. Family organisation and educational communication then provide possible support mechanisms, while continuity of revision, recitation accuracy, and increasing independence remain outcomes to be examined empirically. This distinction is consistent with concerns raised in remote-learning research regarding inequalities in household resources and parental capacity (Carrión-Martínez et al., 2021; Maimaiti et al., 2025). It also avoids attributing educational achievement exclusively to families when learning opportunities are shaped by institutional responsibilities and broader socioeconomic circumstances.

In practical terms, the framework suggests several provisional directions for crisis-responsive tahfidz education. Educational institutions could consider short and manageable memorisation targets, low-bandwidth audio submissions, scheduled teacher feedback, clear guidance on parental facilitation, and alternative arrangements when internet connectivity becomes unreliable. Teachers could differentiate tasks according to learners' independent recitation abilities and provide targeted correction before gradually reducing assistance. Families could support feasible learning routines while communicating practical limitations to teachers. However, these recommendations represent applications inferred from the reviewed literature rather than interventions evaluated by the present study. Their implementation should also accommodate child health considerations,

household workload, and unequal access to educational resources during environmental emergencies.

Despite these contributions, the framework has significant methodological and evidential limitations. The study employs purposive and interpretive library research rather than a comprehensive systematic review, and its selected literature does not constitute an exhaustive mapping of relevant scholarship. Consequently, the conceptual synthesis may be influenced by source selection and differences in the scope or methodological quality of the reviewed studies. In addition, much of the supporting evidence originates from pandemic-era distance learning, general online education, and broader family-resilience research. Although these contexts provide useful comparative insights, they differ from the specific environmental, religious, and pedagogical circumstances of online tahfidz during haze pollution crises. The proposed framework should therefore not be interpreted as an empirically verified account of family behaviour or learning achievement in affected communities.

The relationships presented in the FRSF also remain theoretically proposed rather than statistically estimated or causally demonstrated. In particular, the framework does not establish that greater family resilience results in improved memorisation, that increased parent-teacher interaction necessarily produces higher recitation accuracy, or that reduced scaffolding consistently leads to learner independence. These propositions require investigation through research capable of examining actual educational practices, contextual variation, and learners' experiences. Future qualitative studies could explore how families, teachers, and students negotiate memorisation responsibilities during haze-related disruption, while longitudinal or mixed-method research could examine changes in learning continuity, recitation performance, caregiver burden, and independence over time. Additional studies could also evaluate the feasibility of the proposed indicators across different geographical areas and levels of educational access.

Taken together, the FRSF contributes a theoretically informed structure for examining the interaction between family adaptation and sociocultural learning support during environmental disruption. Its originality lies not in introducing entirely new resilience or scaffolding concepts, but in organising their respective explanatory roles within a provisional model addressing the specific demands of online Qur'anic memorisation. By distinguishing contextual conditions, adaptive coordination, contingent pedagogical assistance, and unverified outcomes, the framework provides a basis for further empirical inquiry without implying that the proposed relationships have already been demonstrated. The second research question is therefore addressed through a bounded conceptual integration that clarifies both the potential explanatory contribution of the model and the evidence required for its subsequent validation.

CONCLUSIONS

This study identifies three interrelated mechanisms through which family resilience may support the continuity of online tahfidz learning during haze pollution crises: adaptive household organisation, coordinated educational interaction, and contingent pedagogical assistance. The synthesis indicates that

family adaptation may facilitate flexible memorisation routines, shared educational responsibilities, and communication among teachers, parents, and learners. Within these arrangements, teachers retain responsibility for specialist Qur'anic instruction and corrective feedback, while parents provide practical and motivational support. Drawing on Vygotskian sociocultural perspectives, appropriately adjusted scaffolding offers a conceptual explanation of how guided recitation, repeated practice, and progressively reduced assistance may support learners' increasing independence. However, these mechanisms represent interpretations derived from existing literature rather than empirically observed relationships in haze-affected tahfidz households.

The principal contribution of this study is the proposed Family Resilience-Scaffolding Framework (FRSF), which integrates contextual enabling conditions, family adaptation, educational interaction, and pedagogical scaffolding within a coherent conceptual structure. By distinguishing educational support mechanisms from hypothesised outcomes, the framework provides a theoretical basis for understanding learning continuity without assuming that family resilience or instructional assistance necessarily improves memorisation achievement. Its significance lies in clarifying the complementary responsibilities of families and teachers while recognising differences in household resources, connectivity, and health-related circumstances. Nevertheless, the framework remains provisional because the study relies on purposively selected literature without primary empirical data. Future research should examine its contextual applicability through qualitative fieldwork and longitudinal or mixed-method studies, particularly by investigating memorisation continuity, recitation accuracy, caregiver burden, and learner independence during environmental disruptions.

REFERENCE

- Al Mazrooei, A. K., Almaki, S. H., Gunda, M., Alnoor, A., & Sulaiman, S. M. (2023). A systematic review of K-12 education responses to emergency remote teaching during the COVID-19 pandemic. *International Review of Education*, 68(6), 811–841. <https://doi.org/10.1007/s11159-023-09986-w>
- Banson, J. (2022). Co-regulated learning and online learning: A systematic review. *Social Sciences & Humanities Open*, 6(1), Article 100376. <https://doi.org/10.1016/j.ssaho.2022.100376>
- Carrión-Martínez, J. J., Pinel-Martínez, C., Pérez-Esteban, M. D., & Román-Sánchez, I. M. (2021). Family and school relationship during COVID-19 pandemic: A systematic review. *International Journal of Environmental Research and Public Health*, 18(21), Article 11710. <https://doi.org/10.3390/ijerph182111710>
- Cortés-Albornoz, M. C., Ramírez-Guerrero, S., García-Guáqueta, D. P., Vélez-Van-Beerbeke, A., & Talero-Gutiérrez, C. (2023). Effects of remote learning during COVID-19 lockdown on children's learning abilities and school performance: A systematic review. *International Journal of Educational Development*, 101, Article 102835.

<https://doi.org/10.1016/j.ijedudev.2023.102835>

- Doo, M. Y., Bonk, C. J., & Heo, H. (2020). A meta-analysis of scaffolding effects in online learning in higher education. *The International Review of Research in Open and Distributed Learning*, 21(3), 60–80. <https://doi.org/10.19173/irrodl.v21i3.4638>
- Edisherashvili, N., Saks, K., Pedaste, M., & Leijen, Ä. (2022). Supporting self-regulated learning in distance learning contexts at higher education level: Systematic literature review. *Frontiers in Psychology*, 12, Article 792422. <https://doi.org/10.3389/fpsyg.2021.792422>
- Fadli, M. R. (2021). Memahami desain metode penelitian kualitatif. *Humanika*, 21(1), 33–54. <https://doi.org/10.21831/hum.v21i1.38075>
- Faza, A., & Lestari, I. A. (2025). Self-regulated learning in the digital age: A systematic review of strategies, technologies, benefits, and challenges. *The International Review of Research in Open and Distributed Learning*, 26(2). <https://doi.org/10.19173/irrodl.v26i2.8119>
- Furlong, D. E., & Lester, J. N. (2023). Toward a practice of qualitative methodological literature reviewing. *Qualitative Inquiry*, 29(6), 727–738. <https://doi.org/10.1177/10778004221131028>
- Gayatri, M., & Irawaty, D. K. (2022). Family resilience during COVID-19 pandemic: A literature review. *The Family Journal*, 30(2), 132–138. <https://doi.org/10.1177/10664807211023875>
- Giantara, F., Yanti, N., Handayani, S., & Anis, Y. (2020). Pola pendidikan keluarga saat bencana kabut asap di Kota Pekanbaru. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 4(2). <https://doi.org/10.31004/obsesi.v4i2.446>
- Haryanto, B., Kurniasari, F., Trihandini, I., Nugraha, F., Widayana, N. G., & Winarni, N. L. (2026). Climate change adaptation to smoke haze for improved child health in Southeast Asia: Analysis situation in Palembang, Indonesia. *Annals of Global Health*, 92(1), Article 52. <https://doi.org/10.5334/aogh.5211>
- Jayachandran, S. (2009). Air quality and early-life mortality: Evidence from Indonesia's wildfires. *Journal of Human Resources*, 44(4), 916–954. <https://doi.org/10.3368/jhr.44.4.916>
- Kaltsum, L. U., & Muhammad, A. S. (2022). Pembelajaran tahfidz Al-Qur'an virtual di UIN Jakarta dan IIQ Jakarta. *Refleksi: Jurnal Kajian Agama dan Filsafat*, 21(1), 147–174. <https://doi.org/10.15408/ref.v21i1.27016>
- Knopik, T., Błaszczak, A., Maksymiuk, R., & Oszwa, U. (2021). Parental involvement in remote learning during the COVID-19 pandemic – Dominant approaches and their diverse implications. *European Journal of Education*, 56(4), 623–640. <https://doi.org/10.1111/ejed.12474>

- Maimaiti, G., Hew, K. F., & Xiao, Y. (2025). Challenges to parental engagement in K-12 online learning during the pandemic: Lessons learned and a tripartite model for future involvement. *Future in Educational Research*, 3(3), 482-504. <https://doi.org/10.1002/fer3.70007>
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333-339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- Sufihara, I., & A'isah, A. (2025). Memorizing the Qur'an in the digital era: Santri learning engagement through online tahfidz programs. *Tadrib: Jurnal Pendidikan Agama Islam*, 11(1), 283-292. <https://doi.org/10.19109/tadrib.v1i1.30680>
- Susanto, S., Desrani, A., & Zamani, D. A. (2021). Learning tahfidz Al-Qur'an during the COVID-19 pandemic. *Jurnal Pendidikan Agama Islam*, 18(2), 257-272. <https://doi.org/10.14421/jpai.2021.182-03>
- Tetlow, S., Wallace, C., Thomas, M., Filipponi, T., Pontin, D., & Livingstone, A. (2024). A systematic review of the use of the concept family resilience in interventions with families with children and young people. *Public Health Nursing*, 41(2), 346-355. <https://doi.org/10.1111/phn.13287>
- Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, 8, Article 45. <https://doi.org/10.1186/1471-2288-8-45>
- Walsh, F. (1996). The concept of family resilience: Crisis and challenge. *Family Process*, 35(3), 261-281. <https://doi.org/10.1111/j.1545-5300.1996.00261.x>
- Walsh, F. (2003). Family resilience: A framework for clinical practice. *Family Process*, 42(1), 1-18. <https://doi.org/10.1111/j.1545-5300.2003.00001.x>
- Wen, Y., Gwendoline, C. L. Q., & Lau, S. Y. (2021). ICT-supported home-based learning in K-12: A systematic review of research and implementation. *TechTrends*, 65(3), 371-378. <https://doi.org/10.1007/s11528-020-00570-9>
- Yadav, D. (2022). Criteria for good qualitative research: A comprehensive review. *The Asia-Pacific Education Researcher*, 31, 679-689. <https://doi.org/10.1007/s40299-021-00619-0>
- Yates, J., & Mantler, T. (2023). The resilience of caregivers and children in the context of COVID-19: A systematic review. *Journal of Child & Adolescent Trauma*, 16(4). <https://doi.org/10.1007/s40653-022-00514-w>
- Zuo, M., Kong, S., Ma, Y., Hu, Y., & Xiao, M. (2023). The effects of using scaffolding in online learning: A meta-analysis. *Education Sciences*, 13(7), Article 705. <https://doi.org/10.3390/educsci13070705>