

Instructional Environment and Physical Arrangement in Teaching Special Needs Education Classroom: Towards Ways of Sustaining a Conducive Learning Environment

Ma. Elaine L. Manuel

Western Colleges, Inc., Naic, Cavite; Schools Division Office of Antipolo City, Juan Sumulong Elementary School

maelaine.manuel@deped.gov.ph

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ABSTRACT

This study examined the instructional environment and physical arrangement of special education classrooms and their relationship as a basis for proposing ways to sustain a conducive learning environment. A quantitative descriptive-comparative-correlational design was employed among 66 receiving and special education teachers from selected public elementary and secondary schools in the Schools Division Office of Antipolo City. Participants were selected purposively, and data were collected through a validated researcher-developed questionnaire using a four-point response scale. Frequency, percentage, weighted mean, independent-samples t-test, analysis of variance, and Pearson product-moment correlation were applied at the 0.05 level of significance. The

instructional environment was rated very highly evident ($M = 3.65$, $SD = 0.31$), with literacy development, effective general education instruction, and social-emotional and behavioral support emerging as the strongest practices. Physical arrangement was likewise very highly evident ($M = 3.71$, $SD = 0.30$), particularly the use of clear physical boundaries, designated activity areas, accessible materials, and predictable classroom structures. Assessments of both variables did not significantly differ according to age, sex, educational attainment, or teaching experience. A strong and statistically significant positive relationship was found between instructional environment and physical arrangement ($r = .73$, $p < .001$). The findings indicate that organized, accessible, and predictable classroom spaces strengthen inclusive instructional practice, engagement, independence, and positive behavior among learners with special needs. The study recommends sustained professional development, improved resource and time allocation, systematic classroom-layout monitoring, and the integration of physical-space planning into instructional design and classroom management.

Keywords: *instructional environment, physical arrangement, special education classroom, inclusive education, conducive learning environment, classroom organization*

INTRODUCTION

Inclusive and special education classrooms require learning environments that respond to learners' varied cognitive, behavioral, sensory, physical, and socio-emotional needs. Effective instruction in these settings extends beyond the selection of teaching strategies because access, participation, motivation, and behavior are also shaped by the conditions in which learning occurs. A classroom may either reduce barriers and support purposeful engagement or intensify distraction, anxiety, dependence, and exclusion. For this reason, the quality of the instructional environment and the intentional use of physical space are central concerns in special needs education.

An instructional environment encompasses the pedagogical, social, emotional, and organizational conditions that influence learning. It includes clear learning goals, differentiated instruction, literacy support,

appropriate interventions, effective use of teachers and aides, and attention to social-emotional and behavioral development. Learners with disabilities often require repeated instruction, accessible learning materials, individualized support, and predictable routines. When such provisions are insufficient, teachers may struggle to address individual needs even when they possess strong commitment and professional competence (Allam & Martin, 2021; Yuwono & Okech, 2021).

Physical arrangement refers to the organization of furniture, learning stations, movement pathways, instructional materials, assistive resources, and activity areas. In special education, physical space communicates expectations: clearly defined areas help learners anticipate activities, understand acceptable behavior, move safely, and locate materials independently. Barrier-free, learner-friendly environments have been associated with improved participation and achievement, whereas inaccessible and poorly organized spaces may restrict engagement and reinforce dependence (Kimanzi et al., 2022; Paul et al., 2022).

The interaction of instructional and physical conditions may be understood through Bronfenbrenner's Ecological Systems Theory, which emphasizes that development is shaped by ongoing exchanges between individuals and their immediate and wider environments (Bronfenbrenner, 1979). Within the classroom microsystem, teaching practices, relationships, routines, and spatial arrangements operate simultaneously. Their influence is further affected by home-school collaboration, school policies, professional support, resource allocation, cultural beliefs about disability, and changes over time. Thus, an effective special education classroom cannot be sustained by instructional technique or physical arrangement alone.

Prior studies have documented persistent constraints in special education, including inadequate teacher preparation, limited instructional materials, large class sizes, weak policy implementation, insufficient technical support, and limited opportunities for collaboration (Cooc, 2019; Gyasi et al., 2020; Paulsrud & Nilholm, 2020). Although research recognizes the importance of inclusive pedagogy and accessible environments, fewer local quantitative studies have examined whether teachers' perceptions of instructional environment and physical arrangement vary by professional profile and how strongly these two classroom conditions are related in public elementary and secondary schools.

This study therefore assessed the instructional environment and physical arrangement of special education classrooms as perceived by receiving and special education teachers in the Schools Division Office of Antipolo City. It described the respondents' profile, determined the level of the two classroom conditions, examined differences according to age, sex, educational attainment, and teaching experience, and tested the relationship between instructional environment and physical arrangement. The results served as the basis for proposing practical ways of sustaining a motivating, inclusive, and conducive learning environment for learners with special needs.

Literature Review

Inclusive Instructional Environments in Special Education

Inclusive education requires more than placing learners with disabilities in ordinary or special classes. It requires deliberate instructional adaptations, accessible support, responsive relationships, and organizational systems that enable meaningful participation. Florian (2019) argued that special and inclusive education continue to coexist in policy and practice, making it necessary to focus on how instruction can respond to learner differences without lowering expectations. Nilholm (2020) similarly emphasized that inclusive education theories must be translated into practices that change participation and learning conditions rather than merely relabeling existing arrangements.

The experiences of learners and teachers show that inclusion depends on the availability and consistent implementation of support. Paul et al. (2022) synthesized the perspectives of children and youth with disabilities and identified teacher attitudes, accommodations, safe physical environments, transitions, friendships, and self-perception as major dimensions of inclusive experience. Allam and Martin (2021) found that teachers often face limited training, inadequate materials, and weak stakeholder support, suggesting that placement alone does not guarantee curriculum access or meaningful participation.

Instructional Practices, Differentiation, and Learner Support

Special education instruction must account for learner variability through differentiated content, process, products, and learning conditions. Tomlinson and Imbeau (2019) emphasized that differentiation is a proactive response to readiness, interests, and learning profiles. In practice, it may involve visual supports, task analysis, multisensory instruction, assistive technology, additional instructional time, and individualized goals. Alnahdi (2019) reported that assistive technology can strengthen access and learning outcomes when teachers possess the competence and support needed to integrate it meaningfully.

Instructional effectiveness is also influenced by the balance between academic and socio-emotional support. Jones and Bouffard (2021) highlighted the role of social-emotional learning in improving emotional regulation and peer relationships, while Azwar et al. (2021) showed that repeated instruction, behavior modification, and choices aligned with learner interests can strengthen resilience among students with special needs. These findings support instructional environments that combine literacy and academic goals with behavior, safety, emotional support, and opportunities for independence.

The organization of adult support affects the quality of intervention. Hjörne and Säljö (2019) observed that special-class interaction may become teacher-centered and limit student agency when instruction is dominated by one-to-one initiation-response-feedback patterns. Collaborative models, by contrast, distribute expertise and create opportunities for joint problem-solving. Friend and Cook (2020) and Paulsrud and Nilholm (2020) stressed that co-teaching and consultation are most effective when roles, authority, planning time, and administrative support are clearly established.

Physical Arrangement, Accessibility, and Predictability

The physical arrangement of a classroom shapes movement, interaction, attention, behavior, and access to instructional resources. Clearly defined learning areas can signal where particular activities occur, while visible boundaries and accessible materials support independence and reduce uncertainty. Kimanzi et al. (2022) found a significant relationship between school physical-environment factors and learner performance, emphasizing the need for barrier-free, stimulating, and meaningful learning environments.

Predictability is especially important for learners who experience sensory, communication, behavioral, or executive-function challenges. Visual schedules, labeled areas, consistent seating patterns, quiet spaces, and organized pathways can reduce anxiety and improve transitions. Bucholz and Sheffler (2019) described welcoming classroom environments as essential for participation and belonging, while Sharma et al. (2021) emphasized that supportive social conditions and empathy contribute to confidence and academic functioning among persons with disabilities.

Physical organization must remain connected to instructional purpose. Hansson et al. (2023) demonstrated that special education learning environments may be constructed around different ideas of schooling, including knowledge transmission, socialization, functional life skills, care, and teacher-centered practice. Klang et al. (2020) likewise found differences in instructional focus across special and mainstream settings. These studies indicate that classroom arrangement should not be treated as decoration; it must be designed to support the intended learning, interaction, and independence outcomes.

Teacher Competence, Collaboration, and Professional Development

Teacher competence is a major condition for sustaining effective special education environments. Cooc (2019) reported that classrooms with high proportions of learners with special needs may be served by teachers with fewer qualifications and greater professional development needs. Gyasi et al. (2020) likewise found limited teacher knowledge of special educational needs, inclusion policies, and classroom-management procedures. Continuous professional learning is therefore necessary to strengthen differentiation, behavior support, assistive technology use, and environmental adaptation.

Professional development is most effective when supported by collaboration and organizational commitment. Fernandes et al. (2021) highlighted the importance of teachers' soft skills, while Balading et al. (2023) documented the pressure experienced by special education teachers when government, financial, and

material support are inadequate. Paulsrud and Nilholm (2020) found that cooperation between regular and special educators is facilitated by equal responsibility, communication, personal compatibility, planning time, and management support. Sustained improvement therefore requires both individual competence and institutional systems.

Ecological Systems Theory and Conceptual Integration

Bronfenbrenner's (1979) Ecological Systems Theory provides a comprehensive explanation of how classroom conditions influence learners. The microsystem includes immediate interactions with teachers, peers, routines, instructional activities, and classroom spaces. The mesosystem involves connections among home, school, and support professionals. The exosystem includes school leadership, resource allocation, community services, and policies that indirectly shape classroom practice, while the macrosystem encompasses cultural values and societal expectations concerning disability and inclusion. The chronosystem recognizes that learner needs, school practices, and educational policies change over time.

Applied to the present study, the theory suggests that instructional environment and physical arrangement are interdependent features of the learner's immediate ecology. Instruction determines how space is used, while spatial organization affects how instruction, behavior support, communication, and movement are carried out. The study therefore treated teachers' profile as a contextual factor, assessed instructional environment and physical arrangement as related classroom conditions, and used the findings to formulate ways of sustaining a conducive learning environment.

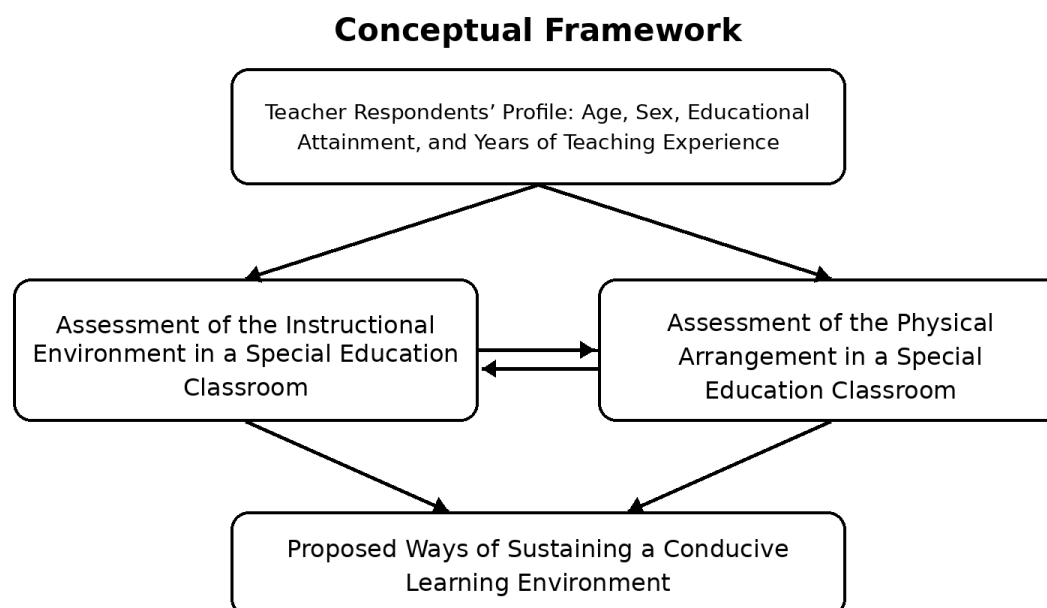


Figure 1. *Conceptual framework of the study.*

METHODS

Research Design

The study employed a quantitative descriptive-comparative-correlational research design. The descriptive component determined the respondents' demographic profile and the extent to which instructional-environment and physical-arrangement practices were evident. The comparative component tested whether teachers' assessments differed according to age, sex, highest educational attainment, and years of teaching experience. The correlational component examined the direction and strength of the association between instructional environment

and physical arrangement. The design was appropriate because the variables were measured as they naturally occurred without experimental manipulation.

Research Locale

The research was conducted in selected public elementary and secondary schools under the Schools Division Office of Antipolo City that implemented special education services through self-contained and mainstreamed or inclusive arrangements. The division served a substantial population of learners with disabilities and employed receiving teachers and special education teachers who directly participated in classroom instruction and support. The locale provided an appropriate setting for examining how instructional and spatial practices were implemented across different school contexts.

Participants and Sampling Technique

The participants were 66 public school teachers, including receiving and special education teachers assigned to schools offering special education classes. Purposive sampling was used because participation required direct experience in teaching, receiving, or supporting learners with special needs. The sample included teachers of different ages, educational qualifications, and lengths of service, allowing the study to examine whether professional-profile characteristics were associated with differences in classroom-environment assessments.

Research Instrument

Data were gathered through a researcher-developed survey questionnaire based on relevant literature and studies. The instrument contained a profile section and two principal scales: instructional environment in a special education classroom and physical arrangement in a special education classroom. The instructional-environment scale covered learner outcomes, general instruction, literacy, intervention time, staff expertise, teacher-aide support, socio-emotional and behavioral support, specialized programs, and effective use of staff time. The physical-arrangement scale covered physical boundaries, designated activity areas, behavior expectations, predictability, and accessibility of materials. Responses used a four-point scale: 4 (Always), 3 (Often), 2 (Sometimes), and 1 (Somewhat). The questionnaire underwent expert validation and revision based on feedback from research advisers, graduate faculty, and panel members.

Data Gathering Procedure

The researcher secured permission from the appropriate education offices and participating schools before data collection. Eligible teachers were informed of the purpose, procedures, voluntary nature, and expected time requirements of the study. After informed consent was obtained, the questionnaires were distributed and retrieved from the participants. Completed responses were reviewed for completeness, encoded, and prepared for statistical analysis. Only pooled data were used in reporting the findings.

Data Analysis

Frequency and percentage were used to describe the respondents' profile. Weighted mean and standard deviation summarized the assessments of instructional environment and physical arrangement. Independent-samples t-tests were applied to two-group comparisons, while analysis of variance was used for profile variables with three or more categories. Pearson product-moment correlation determined the relationship between instructional environment and physical arrangement. All inferential tests used a 0.05 level of significance; probability values below 0.05 were interpreted as statistically significant.

Ethical Considerations

Participation was voluntary and based on informed consent. Respondents were informed that they could decline or discontinue participation without penalty. No minors or vulnerable respondents were included. Personal identifiers were not reported, and responses were analyzed only in aggregate form. Data were handled

confidentially and used exclusively for academic purposes. The study reported no conflict of interest and offered no monetary incentive that could unduly influence participation.

RESULTS AND DISCUSSION

Profile of the Teacher Respondents

The respondents represented a professionally mature and academically developing teaching workforce. The largest age group was 25–35 years (30.3%), followed closely by 36–45 years (28.8%) and 46–55 years (27.3%). Women constituted 93.9% of the sample, reflecting the female-dominated composition of basic education teaching. Most respondents had undertaken graduate education: 39.4% had master's units and 34.8% held a master's degree. In terms of experience, the largest group had taught for 11–20 years (42.4%). The combination of early-career, mid-career, and veteran teachers provided a range of practical perspectives, while the high proportion with graduate preparation indicated substantial engagement in professional development.

Table 1. *Profile of the teacher respondents (N = 66)*

Profile Variable	Category	n	%
Age	25–35 years	20	30.3
	36–45 years	19	28.8
	46–55 years	18	27.3
	More than 55 years	9	13.6
Sex	Male	4	6.1
	Female	62	93.9
Educational attainment	Bachelor's degree	9	13.6
	With master's units	26	39.4
	Master's degree	23	34.8
	With doctoral units/degree	8	12.1
Teaching experience	10 years and below	20	30.3
	11–20 years	28	42.4
	More than 20 years	18	27.3

Instructional Environment in Special Education Classrooms

The instructional environment obtained an overall mean of 3.65 (SD = 0.31), interpreted as very highly evident. Ensuring that all students could read received the highest mean (M = 3.85), followed by effective general education instruction (M = 3.74) and expanded social, emotional, and behavioral support (M = 3.73). These priorities reflect an environment that combines foundational academic goals with learner well-being. The emphasis on outcomes, strong staff intervention, and purposeful use of teachers and aides also suggests that respondents viewed effective special education as a coordinated rather than isolated classroom responsibility.

The lowest-rated item was knowing how staff spent their time and providing guidance on the effective use of time (M = 3.41), interpreted as highly evident rather than very highly evident. Providing daily extra instructional time and high-quality district programs for learners with severe needs also received comparatively lower ratings. These findings indicate that the overall instructional environment was strong, but operational constraints related to time, specialized programming, and resource allocation remained. This pattern is consistent with studies identifying teacher workload, limited materials, and insufficient institutional support as barriers to inclusive practice (Allam & Martin, 2021; Balading et al., 2023; Yuwono & Okech, 2021).

Table 2. *Assessment of the instructional environment in a special education classroom*

Indicator	Mean	SD	Interpretation
Ensuring all students can read	3.85	0.36	Very highly evident
Effective general education instruction	3.74	0.44	Very highly evident
Expanded social, emotional, and behavioral supports	3.73	0.45	Very highly evident
Focusing on student outcomes	3.71	0.46	Very highly evident
Providing additional time for struggling students	3.55	0.50	Very highly evident
High-quality programs for students with severe needs	3.52	0.64	Very highly evident
Guidance on effective use of staff time	3.41	0.66	Highly evident
Overall	3.65	0.31	Very highly evident

Differences in Instructional-Environment Assessments

No statistically significant differences were observed in instructional-environment assessments when respondents were grouped by age, sex, educational attainment, or years of teaching experience. The *p*-values ranged from .09 to .61, all exceeding the .05 criterion. Although some mean variations appeared—for example, teachers aged 46–55 years and those with more than 20 years of experience reported slightly higher means—the differences were not sufficient to establish profile-based variation. The findings indicate a relatively uniform understanding and implementation of instructional practices across demographic and professional groups, possibly reflecting common division policies, training experiences, and professional expectations.

Table 3. *Differences in instructional-environment assessments according to profile*

Profile Variable	Statistical Test	Value	<i>p</i>	Decision
Age	ANOVA	$F = 0.60$	.61	Not significant
Sex	t-test	$t = 0.64$	.53	Not significant
Educational attainment	ANOVA	$F = 3.20$	.09	Not significant
Teaching experience	ANOVA	$F = 1.15$	.32	Not significant

Physical Arrangement in Special Education Classrooms

Physical arrangement received an overall mean of 3.71 ($SD = 0.30$), indicating that structured spatial practices were very highly evident. Learning to respect physical boundaries ranked first ($M = 3.86$), demonstrating the importance of clearly defined spaces in promoting discipline and safe movement. Anticipating activities associated with specific classroom areas ranked second ($M = 3.70$), while accessible materials ($M = 3.68$) and predictable arrangements ($M = 3.67$) supported independence and reduced uncertainty. Even the lowest indicator—learning which behaviors were expected in particular locations—remained very highly evident ($M = 3.62$).

These results support the view that physical arrangement functions as part of instruction rather than as a separate classroom-management concern. Designated learning areas, predictable routines, visual cues, accessible resources, and safe movement pathways help learners understand what to do, where to do it, and how to participate. Such conditions are especially relevant for learners who benefit from structure and reduced sensory or organizational demands (Bucholz & Sheffler, 2019; Kimanzi et al., 2022; Paul et al., 2022).

Table 4. *Assessment of physical arrangement in a special education classroom*

Indicator	Mean	SD	Interpretation
Respecting physical boundaries	3.86	0.35	Very highly evident
Anticipating activities in designated areas	3.70	0.50	Very highly evident
Accessible placement of materials	3.68	0.50	Very highly evident
Predictability and calming structure	3.67	0.48	Very highly evident
Location-specific behavior expectations	3.62	0.49	Very highly evident
Overall	3.71	0.30	Very highly evident

Differences in Physical-Arrangement Assessments

Physical-arrangement assessments did not significantly differ according to age, sex, educational attainment, or teaching experience. All probability values exceeded .05. Older and more experienced teachers tended to provide slightly higher mean ratings, but the differences were not statistically meaningful. The uniformity across groups indicates that purposeful classroom organization was widely recognized and practiced regardless of demographic profile. This suggests that physical-arrangement competence may be shaped more strongly by professional expectations, inclusive education policies, school routines, and shared training than by age or length of service alone.

Table 5. *Differences in physical-arrangement assessments according to profile*

Profile Variable	Statistical Test	Value	p	Decision
Age	ANOVA	F = 0.63	.60	Not significant
Sex	t-test	t = 0.73	.47	Not significant
Educational attainment	ANOVA	F = 2.25	.07	Not significant
Teaching experience	ANOVA	F = 0.60	.55	Not significant

Relationship Between Instructional Environment and Physical Arrangement

A strong positive relationship was found between instructional environment and physical arrangement ($r = .73, p < .001$). The null hypothesis of no significant relationship was therefore rejected. The result indicates that improvements in classroom organization were associated with stronger instructional conditions. Clearly defined learning areas, accessible resources, predictable routines, and physical boundaries may reduce distractions and behavioral uncertainty, allowing teachers to deliver interventions more consistently and learners to participate with greater independence.

The result also demonstrates the reciprocal character of classroom ecology. Physical arrangement creates conditions for instruction, but instructional goals determine how space should be organized and used. An effective literacy area, behavior-support corner, group-work station, quiet space, or assistive-technology area becomes meaningful only when integrated into teaching and support plans. Bronfenbrenner's (1979) ecological perspective explains this interdependence: learning emerges through sustained interaction between the learner and the immediate physical, social, and instructional environment.

Table 6. *Relationship between instructional environment and physical arrangement*

Variables	r	p	Decision on Ho	Interpretation
Instructional environment and physical arrangement	.73	< .001	Reject	Strong, significant positive relationship

Proposed Ways of Sustaining a Conducive Learning Environment

The proposed actions were developed from the strengths and improvement areas identified in the study. The plan retains strong literacy, learner-centered instruction, social-emotional and behavioral support, clear boundaries, accessible materials, and predictable classroom organization. It also addresses comparatively weaker areas through improved time management, enhanced programs for learners with severe needs, systematic classroom monitoring, and closer alignment between instructional planning and spatial design.

Table 7. *Proposed ways of sustaining a conducive learning environment*

Priority Area	Proposed Action	Suggested Implementers
Instructional time and planning	Conduct workshops and coaching on classroom time management, intervention scheduling, and purposeful staff deployment.	School heads, SPED coordinators, department heads
Literacy and differentiated instruction	Sustain Learning Action Cell sessions on literacy intervention, differentiated instruction, and inclusive pedagogy.	Master teachers, SPED teachers, reading coordinators
Learners with severe or complex needs	Develop individualized support schedules and strengthen coordination with families and guidance personnel.	SPED teachers, guidance counselors, parents
Social-emotional and behavioral support	Integrate structured social-emotional learning, positive reinforcement, and peer-support activities.	Teachers, guidance counselors, families
Classroom organization and accessibility	Maintain clear learning stations, safe movement pathways, accessible materials, assistive devices, and sensory-responsive areas.	SPED teachers, teacher aides, maintenance personnel
Monitoring and continuous improvement	Use periodic classroom-environment audits, observations, learner feedback, and improvement plans.	School heads, SPED coordinators, safety officers

CONCLUSION

The study concluded that the instructional environment and physical arrangement of the participating special education classrooms were strongly established and mutually reinforcing. Teachers consistently reported learner-centered instruction, literacy emphasis, socio-emotional and behavioral support, clear physical boundaries, accessible materials, predictable spaces, and location-specific routines. These practices created structured and supportive conditions for learner engagement, independence, discipline, and positive behavior. The absence of significant differences across teacher-profile groups indicates that these practices were broadly shared rather than confined to particular ages, qualifications, sexes, or experience levels.

The strong positive relationship between instructional environment and physical arrangement confirms that a conducive special education classroom is produced through the integration of pedagogy, relationships, routines, resources, and spatial design. Physical organization is not a secondary concern; it directly supports the delivery and reception of instruction. At the same time, the comparatively lower ratings for time-use guidance, additional instructional time, and programs for learners with severe needs show that sustainability requires ongoing institutional investment, monitoring, professional learning, and resource support.

Recommendation

School administrators and education planners should sustain the established strengths through continuous professional development, mentoring, collaborative learning communities, and policy reinforcement. Priority should be given to effective use of instructional time, expansion of specialized support programs, equitable

allocation of learning materials and assistive resources, and regular coaching on differentiated instruction, literacy intervention, social-emotional learning, and behavior support. Common standards should be maintained while allowing teachers to adapt practices to individual learner needs.

Physical-arrangement planning should be formally integrated into instructional design and classroom-management systems. Schools should conduct periodic reviews of accessibility, learning stations, sensory conditions, movement pathways, visual cues, material placement, and safety. Administrators should institutionalize monitoring tools and improvement plans, while teachers should involve learners, families, aides, and support professionals in evaluating classroom needs. Future studies may include observations, learner and parent perspectives, larger and more diverse samples, and longitudinal or intervention designs to determine how environmental improvements affect participation, behavior, and learning outcomes over time.

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