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Inclusive Teaching Practices and Classroom Participation: Examining the Role of Teacher Readiness, Differentiated Instruction, and Academic Belonging among Diverse Learners

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Abstract

Inclusive teaching requires instructional responsiveness that supports participation without separating learners by ability or background. This comparative study examined teacher support, differentiated instructional responsiveness, and academic belonging across six Southeast Asian education systems using publicly available PISA 2022 indicators. Student-reported teacher interest, extra help, school belonging, loneliness, and outsider status were analysed descriptively against OECD reference values, with country-level pattern comparison used to identify configurations of support and participation. Teacher interest ranged from 57% to 79%, while extra help ranged from 64% to 86%. Belonging ranged from 73% to 86%, showing that strong social connection did not always coincide with the highest instructional-support indicators. Indonesia displayed high belonging despite below-OECD teacher-support measures, whereas Singapore combined very high extra help with belonging slightly below the OECD benchmark. The results indicate that inclusive participation depends on both instructional responsiveness and relational school conditions. Policy attention should connect teacher preparation for differentiation with routines that cultivate belonging, reduce exclusion, and sustain active participation among diverse learners.

Keywords: Academic belonging, Differentiated instruction, Inclusive pedagogy, Student participation, Teacher readiness.



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INTRODUCTION

Inclusive pedagogy has become an increasingly important dimension of educational quality as contemporary classrooms accommodate learners with diverse academic abilities, linguistic backgrounds, socio-economic circumstances, disabilities, cultural identities, and learning preferences. Such diversity requires educational systems to reconsider instructional arrangements that assume students possess comparable prior knowledge, learning opportunities, and capacities to engage with standardized classroom activities. Although access to mainstream education represents an essential component of educational inclusion, physical placement within the same learning environment does not necessarily guarantee equitable participation, meaningful academic interaction, or adequate instructional assistance. The effectiveness of inclusive education therefore depends on how teachers organize learning opportunities, respond to individual differences, and establish classroom conditions that enable students to participate without experiencing academic or social marginalization. Dewsbury et al. (2022) demonstrate that inclusive and active pedagogical approaches can reduce academic outcome gaps by creating more equitable opportunities for students to engage with instructional content and classroom activities. Ainscow (2020) similarly emphasizes that educational inclusion requires systematic attention to participation, equity, and the institutional processes through which particular groups of learners may encounter barriers to educational opportunity. These perspectives position inclusive teaching as an integrated instructional and relational responsibility rather than a supplementary intervention directed exclusively toward students identified as having additional educational needs.

Differentiated instruction provides an important pedagogical mechanism for addressing learner diversity because it enables teachers to adjust instructional content, learning processes, assessment activities, and classroom environments in accordance with students' academic characteristics and developmental requirements. Its implementation requires more than providing different assignments, since effective differentiation depends on the continuous interpretation of learning evidence and the selection of instructional responses appropriate to emerging student needs. Teachers must possess sufficient pedagogical knowledge, diagnostic competence, professional confidence, and flexibility to recognize differences in student understanding without establishing rigid categories that restrict opportunities for academic development. Langelaan et al. (2024) identify teacher preparation, practical professional learning, and contextual support as important elements influencing the implementation of differentiated instruction across educational settings. Nevertheless, translating differentiation principles into classroom practice remains challenging when teachers face large class sizes, limited instructional preparation time, insufficient access to specialized materials, or inconsistent institutional support. Rosenberg et al. (2024) indicate that beginning teachers may experience discrepancies between their perceived responsibilities as inclusive educators and their readiness to respond effectively to learner diversity. These challenges suggest that teacher readiness should be examined not merely as professional confidence or theoretical knowledge but also through the instructional assistance and responsiveness that students actually experience.

The relationship between instructional responsiveness and classroom participation is particularly important because students may receive formally differentiated learning activities without developing a corresponding sense of involvement, recognition, or academic belonging. Participation encompasses more than attendance or task completion, extending to students' willingness to ask questions, exchange ideas, collaborate with peers, request assistance, and contribute to shared learning activities. Academic belonging refers to the perception that students are accepted, respected, and recognized as legitimate members of an educational community, making it an important relational condition for sustained classroom engagement. Google et al. (2023) demonstrate the importance of examining belonging across interacting educational and social environments, particularly where students encounter overlapping forms of marginalization, although their higher-education findings require contextual consideration when applied to school settings. Martin and Borup (2022) further distinguish behavioural, emotional, and cognitive engagement, indicating that visible participation does not necessarily represent students' underlying psychological connection to learning. When learners experience social exclusion or perceive themselves as outsiders, opportunities for instructional support may remain underutilized because participation and help-seeking can involve concerns about acceptance, competence, or peer judgment. Consequently, inclusive pedagogy requires simultaneous attention to instructional adaptation and the relational conditions that influence whether diverse learners feel sufficiently secure to participate in classroom activities.

International comparative evidence offers an opportunity to investigate the extent to which supportive teaching practices and academic belonging coexist across education systems with different institutional arrangements and educational outcomes. The Programme for International Student Assessment (PISA) 2022 provides internationally comparable information on students' educational experiences, including their perceptions of mathematics teachers' instructional support and their social connection to school. Teacher-support indicators include whether students perceive their teachers as interested in individual learning and whether additional instructional assistance is available when difficulties arise, while school-climate measures include belonging, loneliness, and feelings of outsider status (OECD, 2023a). These indicators can support comparative interpretations of enacted instructional responsiveness and students' relational experiences, although they do not directly measure teachers' formal professional preparation, the systematic implementation of differentiated instruction, or individual classroom participation. OECD (2024) emphasizes the significance of students' learning experiences and attitudes for understanding educational processes beyond achievement outcomes alone. The analytical value of these measures lies in their capacity to reveal discrepancies between instructional assistance and perceived social connection across education systems. However, appropriate interpretation requires recognition that student-reported experiences constitute indirect evidence of classroom conditions rather than comprehensive assessments of instructional quality or professional competence.

Southeast Asian education systems provide a relevant comparative context because they operate within a region characterized by substantial linguistic diversity, differences in educational resources, varied institutional structures, and ongoing efforts to strengthen learning equity. Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam share broad commitments to educational improvement while differing in instructional conditions, student experiences, and the organization of school-level support. These differences create an opportunity to examine whether relatively high levels of teacher assistance are consistently accompanied by strong academic belonging or whether instructional and relational conditions follow different patterns. PISA 2022 country-level findings indicate that students' reported experiences of teacher support and school belonging vary across these systems, suggesting that neither dimension can be treated as a reliable substitute for the other (OECD, 2023b). In particular, a system may demonstrate substantial instructional assistance while some students continue to experience loneliness or social disconnection, whereas another system may sustain strong school belonging despite comparatively limited perceived academic support. Such contrasts are relevant to the design of professional-development programs because interventions focused exclusively on technical differentiation may overlook relational barriers that affect student participation. A regional comparison therefore provides a basis for identifying different configurations of inclusive educational conditions without assuming that all systems face identical instructional or social challenges.

Despite increasing research attention to inclusive pedagogy, differentiated instruction, teacher preparedness, and student belonging, the relationship among these dimensions remains insufficiently integrated within comparative assessments of Southeast Asian education systems. Existing scholarship provides important explanations of teacher professional learning and differentiated instructional design, while other studies emphasize engagement, social connection, and the consequences of educational exclusion (Gheysens et al., 2023; Whitley et al., 2021). However, examining these constructs separately can obscure situations in which strong instructional assistance coexists with weaker belonging or where positive school relationships are not matched by adequate individualized academic support. The present study addresses this analytical gap by comparing publicly available PISA 2022 indicators across six Southeast Asian education systems and interpreting their configurations through an integrated framework of instructional responsiveness and relational belonging. Specifically, the study examines differences in student-reported teacher interest, additional instructional help, school belonging, loneliness, and outsider status relative to OECD reference values. Its intended contribution is to identify convergent and divergent patterns that may inform teacher preparation, classroom differentiation, school inclusion initiatives, and the evaluation of learning participation among diverse students. Rather than testing causal relationships, the analysis develops a comparative diagnostic interpretation of the conditions associated with inclusive participation and identifies areas requiring more detailed investigation using individual-level and classroom-level evidence.

RESEARCH METHODS

This study employed a comparative secondary-data research design to examine instructional responsiveness and school belonging across six Southeast Asian education systems using publicly available indicators from the Programme for International Student Assessment (PISA) 2022. The selected systems comprised Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam, representing educational contexts with different institutional arrangements, instructional practices, and student experiences. The OECD average was incorporated as a comparative benchmark to facilitate the interpretation of national indicator values relative to a common international reference. The education system constituted the primary unit of analysis, meaning that comparisons were conducted using published country-level percentages rather than individual student records or school-level observations. Data were obtained from official OECD PISA 2022 country notes and supporting publications containing information about student-reported mathematics teacher support and perceptions of the school environment (OECD, 2023a, 2023b). This design was selected because the research objective concerned identifying cross-system configurations of instructional and relational conditions rather than estimating causal relationships between teacher characteristics and individual learning outcomes. The use of standardized international indicators enabled descriptive comparison across the selected systems while retaining the limitations associated with aggregated observational data.

Five indicators were included to operationalize the instructional and relational dimensions of inclusive classroom participation, namely teacher interest, extra help, school belonging, loneliness, and

outsider status. Teacher interest represented the proportion of students reporting that their mathematics teacher demonstrates interest in every student's learning, while extra help reflected the proportion reporting additional assistance from the teacher when needed. These indicators were interpreted as student-perceived expressions of instructional attentiveness and responsiveness rather than direct assessments of teachers' formal qualifications, professional readiness, or systematic implementation of differentiated instruction. School belonging represented students' perceived acceptance and connection within the school community, whereas loneliness and outsider status captured distinct negative experiences of social participation. The analytical distinction between positive and negative relational indicators was maintained because a comparatively high proportion of students reporting belonging does not necessarily eliminate the presence of students experiencing exclusion or social isolation. The operational definitions, OECD reference values, and interpretive boundaries employed in the analysis are presented in Table 1.

Table 1. Operational Definitions and OECD Reference Benchmarks for the Study Indicators

Analytical dimension	Indicator	Operational definition	OECD average (%)	Analytical interpretation
Instructional responsiveness	Teacher interest	Students reporting that their mathematics teacher shows interest in every student's learning	63	Perceived individual instructional attention
Instructional responsiveness	Extra help	Students reporting that their mathematics teacher provides additional help when needed	70	Perceived availability of responsive academic assistance
Relational belonging	School belonging	Students reporting that they feel they belong at school	75	Perceived school membership and social connection
Relational exclusion	Loneliness	Students reporting that they feel lonely at school	16	Experience of social isolation within school
Relational exclusion	Outsider status	Students reporting that they feel like outsiders at school	17	Perceived exclusion or marginality within the school community

Source: Compiled from the PISA 2022 indicators reported in the OECD publications and country notes used in the study.

Table 1 establishes the conceptual boundaries used to interpret each indicator and clarifies the distinction between instructional responsiveness and the relational experiences associated with school participation. The OECD benchmark values provide a consistent reference against which the six education systems can be compared without implying that these averages constitute universal standards of inclusive educational quality. Higher percentages for teacher interest, extra help, and school belonging were interpreted as more favourable student-reported experiences within their respective dimensions, whereas lower loneliness and outsider percentages indicated fewer reported experiences of social disconnection. These directional interpretations were applied consistently throughout the comparative analysis to prevent positive instructional indicators from being treated as equivalent to positive relational outcomes. Importantly, the teacher-support variables were not regarded as comprehensive measures of differentiated instruction because the available data did not directly identify flexible grouping, curriculum adaptation, individualized assessment, or other specific differentiation techniques. Likewise, school belonging was not assumed to provide a direct measurement of behavioural participation, since students' emotional connection to school may differ from their actual classroom interactions. The operational framework therefore supports descriptive interpretation of potentially complementary educational conditions while avoiding claims that exceed the measurement characteristics of the available PISA indicators.

Data analysis involved descriptive comparison, OECD-benchmark deviation, and interpretive pattern matching across the five selected indicators. Initially, the published percentages for each education system were organized into a comparative dataset to identify differences in reported teacher interest, additional instructional help, school belonging, loneliness, and outsider status. The deviation of each national indicator from its corresponding OECD benchmark was then interpreted in percentage points, allowing the analysis to distinguish relatively favourable and less favourable national positions without standardizing or transforming the original percentages. Patterns were examined across the instructional and relational dimensions to identify systems characterized by stronger perceived support, stronger belonging, or divergent configurations between the two. These comparative configurations were interpreted using published scholarship on teacher preparation, differentiated instruction, inclusive pedagogy, learner engagement, and school belonging, while recognizing that the indicators were reported at the education-system level. No inferential statistical tests, regression models, or causal estimates were conducted because the study did not use student-level microdata and was not designed to establish individual-level relationships among the variables. The analysis relied exclusively on publicly accessible, anonymized aggregate indicators and published literature; consequently, no individual participants were recruited, no personal information was collected, and no new ethical approval was sought.

RESULTS AND DISCUSSION

Teacher Support as an Indicator of Inclusive Instructional Responsiveness

The comparative findings reveal substantial variation in students' perceptions of instructional support across the six Southeast Asian education systems, indicating that opportunities to receive teacher attention and additional assistance are not distributed uniformly across the region. Student-reported teacher interest ranged from 57% in Indonesia to 79% in the Philippines, while additional instructional help ranged from 64% in Indonesia to 86% in Singapore. Relative to the OECD reference values of 63% for teacher interest and 70% for extra help, Indonesia was the only selected system reporting lower percentages on both instructional indicators. The Philippines, Singapore, Thailand, and Viet Nam exceeded the OECD averages for both measures, while Malaysia similarly demonstrated values above the international reference for instructional attentiveness and assistance. These results establish differences in the perceived availability of teacher support, although they do not directly reveal the quality, frequency, or pedagogical appropriateness of differentiated classroom activities. OECD (2023a) emphasizes the importance of interpreting teacher-support measures within the broader conditions of students' learning experiences, particularly when comparing educational systems with different institutional structures. The observed variation consequently provides an empirical basis for examining instructional responsiveness as one component of inclusive teaching rather than assuming that a common regional approach produces comparable classroom experiences.

An important feature of the findings is that additional instructional help exceeded reported teacher interest in five of the six education systems, with Thailand recording equal percentages for the two indicators. This distinction suggests that students may recognize practical assistance with learning difficulties more frequently than they perceive individualized teacher interest, although the aggregated measures cannot establish how the same students experience both practices. Providing explanations, clarifying tasks, reviewing errors, or offering supplementary assistance may constitute visible instructional responses even when interpersonal attentiveness is less consistently recognized. Gheysens et al. (2023) explain that differentiated instruction involves multiple forms of responsiveness, including adjustments to learning activities and support arrangements in accordance with students' educational requirements. However, additional help cannot automatically be equated with systematic differentiation because assistance may be delivered through uniform remedial activities without considering differences in students' prior knowledge or learning processes. A distinction must therefore be maintained between students' perceptions of teacher availability and the broader instructional competence required to diagnose and respond to heterogeneous learning needs. The differences between the two indicators suggest that inclusive instructional evaluation should consider

both the visibility of academic assistance and the interpersonal conditions through which students recognize teachers' attention to their learning.

Teacher readiness constitutes an underlying professional capacity that cannot be measured directly through the two student-reported support indicators available in PISA 2022. Effective readiness for differentiated instruction requires teachers to interpret assessment evidence, identify learning barriers, adjust instructional materials, organize flexible participation arrangements, and monitor whether adaptations improve students' access to learning. Langelan et al. (2024) emphasize that successful differentiation depends on professional preparation that connects theoretical understanding with sustained opportunities to practice instructional decision-making in authentic classroom situations. Student-reported teacher interest and extra help nevertheless provide useful information about whether particular aspects of this professional capacity become visible within everyday classroom interactions. Where instructional assistance is widely reported, students may encounter more frequent opportunities to obtain clarification or support, but such percentages do not establish whether teachers possess comprehensive differentiation skills or apply them equitably. Conversely, lower support percentages do not necessarily indicate an absence of teacher competence because responses may also reflect classroom organization, student expectations, curricular demands, or differences in how instructional help is experienced. These interpretive boundaries are essential for preventing descriptive cross-national differences from being converted into unsupported judgments about the overall competence of teachers in particular education systems.

Indonesia displayed the lowest instructional-support profile among the selected systems, with 57% of students reporting teacher interest and 64% reporting additional help when needed. Both indicators were six percentage points below their respective OECD benchmarks, suggesting comparatively limited visibility of individualized instructional attention and assistance within the student-reported measures. This configuration deserves attention because differentiation requires instructional environments in which learning difficulties can be identified and addressed before they become persistent barriers to classroom participation. Sofiana et al. (2024) document challenges associated with Indonesian teachers' readiness to implement differentiated learning, including differences in preparedness across instructional components and constraints affecting practical implementation. Such findings offer a contextual explanation for why expectations of responsive teaching may not always translate into consistently perceived instructional support, although they cannot establish the causes of the national PISA pattern. The Indonesian results therefore point toward the importance of examining classroom assessment routines, access to professional development, workload conditions, and the institutional arrangements supporting teachers' instructional decisions. A relevant improvement priority would be to strengthen observable learning assistance while investigating whether students with different academic requirements experience comparable opportunities to request and receive support.

Malaysia demonstrated a comparatively favourable instructional-support configuration, with teacher interest reaching 70% and additional help reaching 80%. These percentages exceeded the OECD benchmarks by seven and ten percentage points, respectively, indicating that student-reported instructional attention and assistance were relatively prevalent within the selected indicators. The ten-percentage-point difference between Malaysia's two teacher-support measures also suggests that additional help was more frequently recognized than generalized individual interest in learning. Nevertheless, the availability of assistance does not establish whether teaching practices were sufficiently differentiated to address language differences, prior attainment, disability-related requirements, or other dimensions of learner diversity. Ainscow (2020) argues that educational inclusion requires attention to the barriers affecting participation and equity, rather than relying exclusively on the provision of additional educational services. From this perspective, Malaysia's instructional-support profile provides a favourable starting point for investigating how classroom assistance can promote independent learning, reduce exclusionary practices, and expand students' opportunities to engage with demanding academic tasks.

The Philippines recorded the highest percentage of students reporting teacher interest at 79%, together with an additional-help percentage of 81%, placing both indicators substantially above OECD reference values. The corresponding advantages of sixteen percentage points for teacher interest and eleven percentage points for extra help indicate strong student-reported visibility of instructional assistance and attentiveness. However, these favourable indicators should not be interpreted as evidence

that all learners experience sustained engagement or that classroom differentiation adequately addresses every dimension of educational disadvantage. Martin and Borup (2022) distinguish behavioural, emotional, and cognitive engagement, demonstrating the importance of recognizing that participation involves multiple processes beyond receiving instructional support. Students may report accessible teachers while continuing to encounter barriers related to confidence, classroom interaction, learning motivation, or differences in educational resources. Geletu (2022) further associates teachers' professional and pedagogical competencies with cooperative learning and student engagement, supporting the need to examine how assistance is translated into meaningful learning opportunities. The Philippine findings therefore indicate the presence of favourable instructional-support perceptions while leaving open important questions about the distribution, pedagogical effectiveness, and participatory consequences of that support.

Thailand and Viet Nam presented distinct combinations of instructional-support indicators despite both exceeding the OECD reference values. Thailand reported 76% for teacher interest and 76% for additional help, indicating an equal level of student-reported endorsement across the two measures and comparatively smaller emphasis on extra assistance than in the other selected systems. Viet Nam recorded 77% for teacher interest and 83% for extra help, producing a six-percentage-point difference between attentiveness and assistance while maintaining relatively high values on both indicators. These configurations suggest that strong instructional responsiveness may be perceived through different combinations of teacher availability, interpersonal attention, and direct academic assistance. The historical comparisons included in the OECD country notes additionally indicate that student-reported teacher-support conditions can change over time, making professional readiness better understood as a capacity influenced by institutional and pedagogical circumstances rather than a permanently established teacher characteristic (OECD, 2023g, 2023h). Whitley et al. (2021) emphasize the relevance of school-wide inclusion and well-being arrangements, reinforcing the importance of considering instructional practices alongside broader organizational support. Differences between Thailand and Viet Nam thus illustrate why professional-development priorities should emerge from each system's observed needs instead of assuming that similar positions above the OECD benchmark represent identical classroom conditions.

Table 1. Comparative Indicators of Inclusive Classroom Support and Belonging

System	Teacher interest (%)	Extra help (%)	Belong (%)	Lonely (%)	Outsider (%)
Indonesia	57	64	86	16	13
Malaysia	70	80	75	22	18
Philippines	79	81	84	28	28
Singapore	77	86	73	19	20
Thailand	76	76	76	20	18
Viet Nam	77	83	82	14	21
OECD average	63	70	75	16	17

Source: PISA 2022 country indicators reported in the manuscript, based on OECD publications.

Table 2 demonstrates that the instructional and relational indicators do not follow a single consistent pattern across the six education systems, making simultaneous examination of both dimensions necessary for evaluating inclusive participation. Singapore illustrates this distinction through its high teacher-interest value of 77% and the highest reported additional-help value of 86%, while its school-belonging percentage remained below the OECD benchmark. In contrast, Indonesia recorded the lowest teacher-support percentages but the highest school-belonging percentage, demonstrating that relatively strong social connection can coexist with less frequently reported instructional assistance. The Philippines combined favourable instructional support and high belonging with comparatively elevated percentages

of loneliness and outsider status, indicating that positive system-level indicators may not capture the experiences of all students. These contrasts reinforce the argument that instructional responsiveness should be evaluated in relation to the accessibility and social consequences of support rather than its reported availability alone (Ainscow, 2020; Langelaan et al., 2024). The data also show why teacher readiness should not be ranked directly from aggregate student-support percentages, since instructional effectiveness involves professional judgment, appropriate adaptation, and responsiveness to specific learning circumstances. A more informative approach is to treat the indicators as complementary diagnostic evidence for identifying where closer investigation of instructional practice and student participation may be warranted.

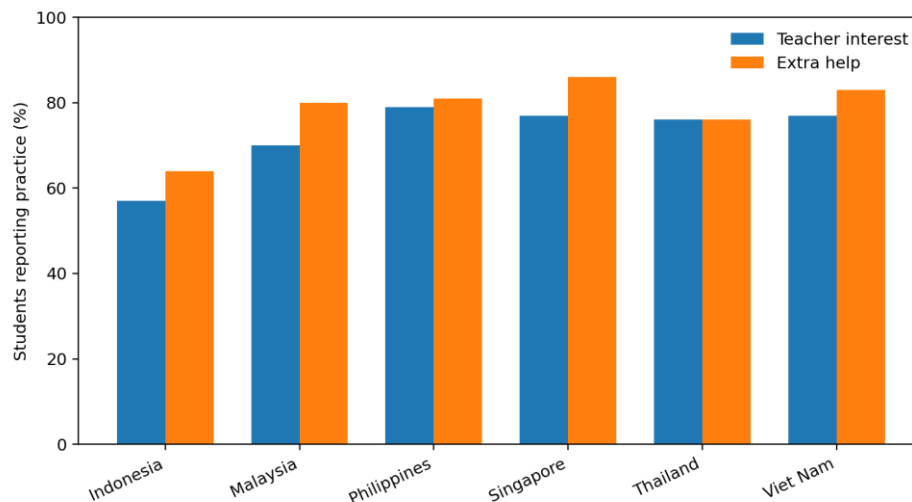


Figure 1. Student-Reported Teacher Support Across Six Southeast Asian Systems

Figure 1 visualizes the differences between teacher interest and additional instructional help, making the relative position of each education system against OECD benchmarks more readily observable. Singapore exhibits the highest additional-help percentage, while the Philippines records the highest teacher-interest percentage, indicating that leadership on one instructional indicator does not necessarily translate into the highest position on the other. Indonesia remains below both international reference values, whereas Malaysia, the Philippines, Singapore, Thailand, and Viet Nam exceed the respective benchmarks. The relatively narrow difference between the two measures in the Philippines and their identical values in Thailand contrast with the larger gaps observed in Malaysia and Singapore. These differences are compatible with the interpretation that visible academic assistance and perceived individual teacher attention represent related but analytically distinct dimensions of instructional support (Gheysens et al., 2023). From a professional-development perspective, the comparison suggests the value of evaluating whether teachers can communicate individual academic attention while offering timely assistance that responds to differences in learning progress. Nevertheless, the figure presents descriptive percentages rather than evidence of causal relationships or direct observations of differentiated instructional implementation.

Academic Belonging and the Social Conditions of Participation

The comparative results reveal that academic belonging varies considerably across the six education systems and does not consistently increase alongside the availability of instructional support. Indonesia recorded the highest percentage of students reporting school belonging at 86%, followed by the Philippines at 84% and Viet Nam at 82%, placing all three systems above the OECD average of 75%. Thailand reported 76%, Malaysia matched the OECD benchmark at 75%, and Singapore recorded the lowest belonging percentage among the selected systems at 73%. These findings are important because Singapore simultaneously demonstrated the highest percentage of students reporting additional instructional help, whereas Indonesia combined the highest belonging percentage with the lowest instructional-support values. The contrast indicates that positive school membership cannot be understood simply as an automatic consequence of teacher availability or academic assistance. Google

et al. (2023) emphasize that academic belonging develops through interactions among multiple social and educational environments, suggesting that instructional relationships represent only one component of students' broader experiences of acceptance and recognition. The regional findings consequently support examining academic belonging as a distinct relational dimension of inclusive participation that may be influenced by peer relationships, school culture, classroom interactions, and students' perceptions of their place within the learning community.

Indonesia presents a particularly important configuration because students reported the strongest school belonging despite comparatively lower percentages for teacher interest and additional academic help. The belonging percentage of 86% exceeded the OECD reference by eleven percentage points, while loneliness remained equal to the OECD average at 16% and outsider status was four percentage points lower at 13%. The original OECD country note also reported that 87% of Indonesian students perceived that they made friends easily at school, providing additional contextual information about the potential relevance of peer relationships. These indicators suggest that students' connection to school may be supported by social and institutional experiences that extend beyond the direct availability of individualized teacher assistance. However, the aggregate data do not establish which particular relationships or school practices account for Indonesia's relatively favourable belonging profile. Whitley et al. (2021) demonstrate the significance of school-wide approaches to inclusion and well-being, highlighting the need to consider social relationships and institutional conditions alongside instructional intervention. Indonesia's findings therefore indicate that strengthening academic responsiveness should not require replacing existing sources of social connection but should instead be designed to complement relational conditions that students already perceive positively.

The Philippines also exhibited high school belonging, with 84% of students reporting that they felt they belonged at school, exceeding the OECD benchmark by nine percentage points. However, 28% reported loneliness and an identical percentage reported feeling like outsiders, representing the highest values for both negative relational indicators among the six systems. This combination demonstrates that a high aggregate belonging percentage can coexist with substantial experiences of disconnection, requiring cautious interpretation of positive national averages. Although the survey percentages describe different indicators and cannot identify individual students experiencing contradictory conditions without microdata, their coexistence indicates that perceived membership does not eliminate loneliness or exclusion within an education system. Research on academic belonging emphasizes that social recognition may vary across relationships and environments, particularly where learners encounter different forms of marginalization or institutional barriers (Google et al., 2023). Consequently, the Philippine profile should not be interpreted exclusively through its high belonging percentage, since the elevated loneliness and outsider indicators also reveal important concerns for educational inclusion. A more comprehensive evaluation would investigate which student groups experience social disconnection and whether classroom practices provide sufficient opportunities for peer interaction, recognition, and participation.

Malaysia's school-belonging percentage of 75% was identical to the OECD average, while loneliness reached 22% and outsider status reached 18%, exceeding their respective OECD benchmarks of 16% and 17%. These indicators suggest that relatively favourable teacher-support perceptions were not accompanied by equally favourable outcomes across every relational measure. Malaysia's additional-help percentage of 80% was ten percentage points above the OECD reference, indicating that students frequently reported instructional assistance even though experiences of loneliness remained comparatively elevated. This difference highlights the conceptual distinction between obtaining help with academic tasks and experiencing a broader sense of acceptance within the educational community. Okolie et al. (2022) associate collaborative learning with student engagement in practical learning contexts, suggesting that opportunities for shared responsibility and interaction can complement teacher-directed assistance. Nevertheless, collaborative activities require careful organization because interaction alone does not guarantee that every student receives recognition or meaningful opportunities to contribute. The Malaysian findings therefore support integrating existing instructional-support practices with classroom structures that encourage peer connection, shared participation, and the inclusion of learners who may otherwise remain socially peripheral.

Singapore exhibited the most pronounced divergence between perceived instructional responsiveness and school belonging among the selected education systems. Although 86% of students reported receiving additional help when necessary and 77% perceived teacher interest in their learning,

only 73% reported a sense of school belonging, two percentage points below the OECD average. Loneliness reached 19%, while outsider status reached 20%, placing both negative relational indicators above their international reference values. These figures suggest that strong reported instructional assistance does not necessarily correspond to equally positive experiences of school membership or social connection. Wang et al. (2022) demonstrate that classroom processes and teacher-related factors are associated with student engagement, supporting a multidimensional understanding of educational participation. However, the available PISA percentages cannot establish whether competition, academic expectations, peer relationships, or other contextual conditions explain Singapore's particular configuration. The findings instead indicate the importance of investigating relational inclusion alongside instructional effectiveness, particularly where students perceive substantial academic support but comparatively weaker belonging.

Thailand reported a school-belonging value of 76%, exceeding the OECD average by one percentage point, with loneliness at 20% and outsider status at 18%. The country's instructional-support indicators were both recorded at 76%, positioning them above their OECD reference values while producing a relatively moderate belonging profile compared with Indonesia, the Philippines, and Viet Nam. This combination indicates that the presence of comparatively favourable instructional-support reports does not necessarily correspond to equally substantial differences in school belonging. The OECD country note identifies improvement in Thailand's reported belonging relative to its earlier reference period, suggesting that relational experiences may change over time even when instructional indicators follow different trajectories (OECD, 2023g). Such changes should not be interpreted as evidence that one educational condition produces another because the descriptive data do not identify the mechanisms underlying historical differences. Ainscow (2020) emphasizes that inclusion and equity require attention to the processes through which students gain access to participation and experience recognition within educational institutions. Thailand's profile therefore supports evaluating instructional and relational conditions through separate but complementary indicators rather than treating improvements in either dimension as sufficient evidence of comprehensive inclusion.

Viet Nam displayed one of the most favourable combinations of instructional support and academic belonging, with 77% reporting teacher interest, 83% reporting additional help, and 82% reporting that they belonged at school. The belonging value exceeded the OECD average by seven percentage points, while loneliness was recorded at 14%, two percentage points below the international reference. These indicators suggest that students frequently perceived both instructional assistance and social connection, representing a comparatively balanced configuration across the principal positive measures. Nevertheless, outsider status reached 21%, four percentage points above the OECD benchmark, demonstrating that favourable belonging and loneliness indicators do not establish the absence of exclusionary experiences. Qureshi et al. (2023) associate collaborative learning and student engagement with learning performance, providing a theoretical basis for considering the interaction between instructional participation and supportive relationships. De Backer et al. (2022) further indicate that collaborative understanding is associated with shared metacognitive regulation, which requires opportunities for learners to exchange ideas and participate meaningfully in collective learning activities. Viet Nam's results are therefore consistent with relatively favourable conditions for inclusive participation while also indicating the need to identify groups that continue to experience outsider status despite strong overall belonging.

The regional evidence suggests that academic belonging should be understood as a multidimensional educational resource rather than a single positive feeling that automatically accompanies classroom attendance or teacher assistance. Students may perceive themselves as members of the school community while simultaneously encountering loneliness, limited peer recognition, or restricted opportunities to participate in particular learning situations. The coexistence of positive and negative relational indicators in several systems indicates that social integration may differ across peer groups, classroom activities, and institutional environments. Martin and Borup (2022) distinguish among behavioural, emotional, and cognitive dimensions of engagement, supporting the argument that students' visible participation and their underlying connection to educational settings should not be treated as interchangeable. Uslu and Durak (2022) also emphasize the importance of metacognitive and motivational regulation in collaborative learning, suggesting that meaningful participation requires opportunities for learners to exercise agency within supportive interactions. These perspectives indicate that inclusive classrooms should provide accessible instructional assistance while also cultivating

mutual recognition, psychological safety, and opportunities for shared academic responsibility. Accordingly, the evaluation of academic belonging should incorporate both positive membership experiences and negative social indicators to identify educational conditions that may remain concealed within favourable aggregate percentages.

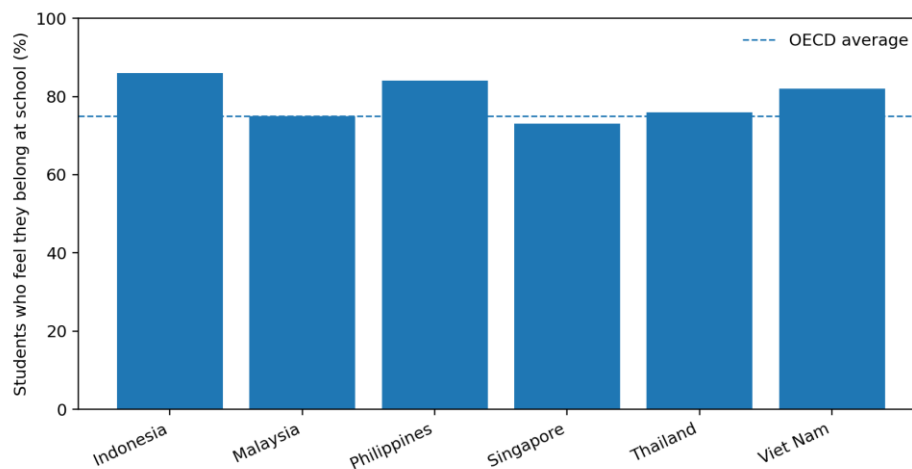


Figure 2. Academic Belonging Compared with the OECD Reference

Figure 2 illustrates the comparative position of the six education systems in relation to the OECD school-belonging benchmark of 75%, emphasizing the contrast between relatively strong belonging in Indonesia and comparatively lower belonging in Singapore. Indonesia, the Philippines, and Viet Nam stand above the reference by eleven, nine, and seven percentage points, respectively, while Thailand exceeds it by one percentage point and Malaysia matches it exactly. Singapore falls two percentage points below the reference despite reporting the strongest additional instructional-help indicator, reinforcing the finding that academic assistance and social membership do not necessarily follow parallel patterns. The relatively favourable positions of Indonesia and the Philippines should nevertheless be interpreted together with their loneliness and outsider indicators, because school belonging alone does not provide a complete description of social participation. Whitley et al. (2021) indicate that school-wide approaches to inclusion require coordinated attention to student well-being and educational participation, while Google et al. (2023) demonstrate the importance of considering belonging across interacting social environments. From an instructional perspective, the comparison suggests that teachers and school leaders should monitor students' relational experiences independently of academic-support provision and investigate whether learners perceive themselves as accepted contributors to classroom learning. The figure therefore provides descriptive evidence supporting a combined instructional and relational framework without establishing causal relationships between teacher support and academic belonging.

Implications for Teacher Preparation, Differentiation, and Inclusive Participation

The comparative findings indicate that teacher preparation for inclusive education should emphasize the practical integration of differentiated instruction, responsive academic assistance, and classroom participation rather than treating these elements as independent professional competencies. Differences in student-reported teacher support across the six education systems suggest that instructional responsiveness is experienced unevenly, even where educational institutions share broad commitments to inclusive practice. Teachers therefore require opportunities to develop diagnostic assessment skills, identify differences in prior understanding, adjust learning tasks, and evaluate whether instructional modifications improve access for students with heterogeneous learning requirements. Gheysens et al. (2023) emphasize that differentiated instruction involves deliberate pedagogical decisions that respond to student variability, while Langelaan et al. (2024) identify sustained professional learning as an important condition for translating differentiation principles into classroom practice. Professional-development initiatives should consequently incorporate collaborative lesson planning, supervised instructional experimentation, classroom observation, and structured evaluation of student responses to differentiated activities. Such arrangements can help teachers distinguish between providing additional explanations and designing instructional adaptations that

address the underlying sources of learning difficulty. The findings suggest that teacher readiness should be assessed through multiple forms of evidence, including students' experiences of instructional assistance, rather than through training participation or professional self-assessment alone.

Teacher education should also integrate relational pedagogy with technical differentiation because instructional accessibility and social recognition represent complementary conditions for inclusive classroom participation. The differences between Indonesia and Singapore demonstrate that relatively strong belonging can coexist with weaker perceived instructional support, while extensive academic assistance can occur alongside comparatively lower school belonging. These configurations indicate the need to prepare teachers to attend simultaneously to students' learning requirements and their experiences of acceptance, academic confidence, and participation within classroom communities. Rosenberg et al. (2024) highlight the importance of preparing beginning teachers for the complex responsibilities associated with inclusive education, including the practical and professional demands of responding to learner diversity. Ainscow (2020) similarly positions inclusion as an institutional and pedagogical process concerned with removing barriers to participation and ensuring equitable educational opportunities. Teacher-preparation programs should therefore incorporate supervised activities that require prospective teachers to adapt instruction while monitoring participation, peer relationships, and the distribution of classroom interaction. This integrated approach would support professional readiness as a combination of pedagogical competence, relational sensitivity, and the capacity to recognize when formally accessible learning activities remain socially or academically exclusionary.

Responsive assessment represents a central mechanism through which differentiated instruction can become more closely aligned with students' changing educational needs. Teachers require timely and interpretable information about prior understanding, emerging misconceptions, learning progress, and the specific difficulties preventing students from participating effectively in classroom activities. Formative assessment practices, including short diagnostic tasks, guided questioning, feedback discussions, and student reflection, can provide opportunities to adjust instruction before learning difficulties become persistent. Langelaan et al. (2024) demonstrate the importance of preparing teachers to make differentiation decisions that reflect the requirements of actual classroom practice rather than relying exclusively on generalized instructional principles. Digital educational applications may provide additional opportunities for interactive learning and feedback, although Li et al. (2024) indicate that the effectiveness of digital learning activities should be considered in relation to students' motivation and the educational conditions surrounding their use. Consequently, technological resources should be integrated into responsive instructional processes rather than treated as independent evidence of inclusive teaching quality. Assessment practices should also avoid permanently classifying learners according to initial performance, since inclusive differentiation requires flexibility and continued opportunities for students to demonstrate academic development.

Collaborative learning offers an additional pathway for strengthening inclusive participation because it creates opportunities for students to exchange ideas, negotiate understanding, and assume responsibility within shared academic activities. However, collaborative arrangements do not automatically produce equitable participation, particularly when group interactions reproduce existing differences in confidence, academic status, linguistic competence, or social recognition. Effective cooperation requires clearly established learning objectives, distributed responsibilities, accessible tasks, and teacher monitoring of whether all group members can contribute meaningfully. Okolie et al. (2022) associate collaborative learning with student engagement in practical-skills acquisition, supporting its potential relevance for developing active participation when activities are appropriately structured. De Backer et al. (2022) further demonstrate the importance of shared metacognitive regulation for collaborative understanding, suggesting that productive group interaction requires more than simply placing students together. Inclusive collaborative instruction should therefore provide multiple participation pathways, encourage constructive peer feedback, and prevent individual learners from consistently occupying passive or peripheral roles. When combined with differentiated tasks and responsive teacher assistance, carefully organized collaboration may strengthen opportunities for academic engagement while supporting students' experiences of classroom membership.

A further implication concerns the social consequences of receiving additional academic assistance, especially where instructional support is visibly separated from ordinary classroom activities. Students who require repeated explanations, modified tasks, or supplementary instruction

may encounter unintended stigma if assistance is presented as evidence of inability or permanent academic difference. Inclusive teaching should therefore normalize help-seeking as part of learning and provide flexible opportunities for students to obtain support without being publicly categorized according to perceived deficits. Uslu and Durak (2022) emphasize the importance of learner autonomy, metacognition, and motivational regulation within collaborative learning environments, indicating that students benefit from opportunities to participate actively in managing their learning. Teacher assistance should accordingly aim to strengthen students' independent problem-solving capabilities, confidence, and capacity to identify when additional explanation is necessary. The PISA findings do not directly measure whether students perceive academic assistance as stigmatizing or empowering, but the divergence between teacher-support and belonging indicators demonstrates why this relationship warrants further investigation. Professional-development programs should therefore encourage teachers to evaluate not only whether additional help is provided but also how its organization influences student agency, peer recognition, and willingness to participate.

The cross-national differences also indicate that inclusive education policies require contextual diagnosis rather than uniform regional intervention targets. Indonesia's combination of high belonging and comparatively lower instructional-support indicators suggests that improvement efforts could prioritize the accessibility of individualized academic assistance while retaining supportive school relationships. The Philippines presents a different concern because relatively strong teacher support and high belonging coexist with elevated loneliness and outsider percentages, indicating the importance of investigating unequal experiences of social inclusion. Singapore's profile suggests a need to examine relational belonging in conjunction with its comparatively strong reported instructional support, rather than assuming that extensive academic help is sufficient to secure positive participation experiences. Malaysia and Thailand exhibit intermediate belonging profiles alongside favourable teacher-support indicators, supporting the value of investigating how instructional assistance connects with peer interaction and perceived school membership. Viet Nam combines relatively strong teacher support and belonging with lower loneliness, although its outsider percentage indicates that positive system-level conditions do not eliminate the possibility of marginalization. These distinctions support locally responsive policy development that combines comparative benchmarking with detailed school-level investigation before specific instructional or relational interventions are selected (OECD, 2023a, 2023b).

The interpretation of these findings is constrained by the use of aggregated cross-sectional indicators, which provide descriptive information about education systems but do not establish relationships among variables at the individual student level. The available data reflect students' perceptions of teacher support and school connection rather than direct classroom observations of differentiated instruction or independently verified assessments of teacher professional readiness. Country-level percentages also conceal potential differences among students according to socio-economic circumstances, gender, disability, language background, school location, and other educational characteristics. Consequently, apparent convergence between teacher support and belonging at the system level cannot be interpreted as evidence that students receiving more instructional help necessarily experience stronger academic belonging. The comparison additionally depends on the indicators and reporting definitions available in the OECD publications, limiting the range of instructional practices and participation experiences that could be examined. OECD (2023a) provides a framework for interpreting internationally comparable educational measures, but substantive conclusions still require attention to the contextual and methodological boundaries of such comparisons. The present findings should therefore be understood as comparative diagnostic evidence that identifies patterns requiring further explanation rather than as a causal evaluation of the effectiveness of particular educational policies.

Future research should extend the present analysis by linking student-level indicators of instructional support and academic belonging with information about teacher professional preparation, classroom organization, and differentiated instructional practices. Multilevel quantitative designs could examine whether relationships between instructional responsiveness and belonging differ across schools, student groups, or educational environments while accounting for institutional and individual characteristics. Classroom observations would provide additional evidence concerning how teachers diagnose learning needs, organize differentiated activities, distribute instructional attention, and respond when students encounter difficulties. Qualitative interviews could investigate whether learners

experience additional help as supportive, empowering, stigmatizing, or insufficiently adapted to their educational circumstances. Rosenberg et al. (2024) emphasize the complex nature of preparation for inclusive teaching, supporting the need to examine professional readiness through both teacher perspectives and observable instructional practices. Research on classroom processes and student engagement further suggests the importance of investigating the mechanisms through which teaching arrangements influence participation under different educational conditions (Wang et al., 2022). Such studies could provide stronger empirical foundations for determining how instructional responsiveness and relational belonging interact and which interventions are most appropriate for learners experiencing overlapping academic and social barriers.

Table 2. Interpretation Matrix for Inclusive Participation Profiles

Profile	Instructional support	Belonging	Priority
Integrated inclusion	High	High	Sustain differentiation and relational practices
Relationally strong	Lower	High	Strengthen diagnostic support and extra help
Instructionally strong	High	Lower	Strengthen peer connection and identity-safe practice
Dual vulnerability	Lower	Lower	Coordinate instructional, pastoral, and equity interventions

Table 3 presents an interpretive framework that integrates instructional responsiveness and academic belonging into four conceptual profiles, each associated with different educational improvement priorities. The integrated inclusion profile represents conditions in which students report comparatively favourable instructional support and belonging, suggesting the importance of sustaining both differentiated learning opportunities and supportive relationships while examining remaining experiences of exclusion. The relationally strong profile identifies settings in which school connection appears favourable despite comparatively limited perceived academic assistance, making the accessibility and effectiveness of instructional differentiation an important improvement consideration. Conversely, the instructionally strong profile indicates that substantial teacher support may require complementary interventions directed toward peer recognition, identity-safe participation, and students' experiences of school membership. The dual vulnerability profile identifies situations in which weaker instructional responsiveness and weaker belonging may require coordinated academic, relational, and institutional responses rather than isolated classroom interventions. These profiles constitute a conceptual interpretation of the observed indicators rather than an empirically validated classification system, and the separate loneliness and outsider measures remain necessary for identifying concerns concealed by positive belonging percentages. The principal contribution of the framework is therefore its capacity to organize comparative findings into differentiated improvement questions while emphasizing that inclusive participation depends on the interaction between accessible learning support and students' recognition as legitimate participants in educational communities.

CONCLUSION

The comparison shows that inclusive classroom participation cannot be reduced to either teacher support or students' sense of belonging. Six Southeast Asian systems displayed distinct combinations: Indonesia paired high belonging with lower reported teacher support, Singapore paired very high extra help with belonging slightly below the OECD benchmark, while Viet Nam showed strong values across both instructional and relational indicators. These contrasts support an ecological account in which teacher readiness becomes visible through responsive instruction but reaches its full educational value only when students also experience acceptance, connection, and legitimate participation.

Teacher preparation and school improvement should connect differentiated instruction, responsive assessment, and belonging-building routines rather than treating them as separate initiatives. Cross-national indicators are useful for diagnosis but should be followed by student-level and classroom-level evidence capable of identifying who receives support and who remains peripheral. An inclusive pedagogy agenda is strongest when it asks two questions at the same time: whether teachers

can adapt learning to diverse needs and whether learners experience the classroom as a place in which they can participate, seek help, and belong.

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