Basic Schools Classroom Size Debate in Nepal: Policy and Practice Landscape

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Abstract

Class size and seating arrangements are critical components of effective classroom delivery, often debated among educationists and policymakers. While smaller class sizes are believed to enhance learning outcomes by enabling more individualized teacher attention, their implementation faces significant challenges, including financial constraints and limited stakeholder support. This paper reviews the current government policies and observes class size and seating arrangement in Nepal's Basic Schools, while also exploring the global discourse surrounding class size reduction and its theoretical underpinnings. The central objective of this study is to assess whether classroom sizes in Nepal's Basic Schools align with the provisions outlined in national and international educational policy documents. To achieve this, present study first conducts a comprehensive review of Nepal's policies on class size and seating arrangement, critically analyzing their alignment with global educational standards and their practical implementation in school settings. In the second phase, classrooms of 30 Basic Schools in the districts of Kathmandu, Bhaktapur, and Lalitpur were observed using purposive sampling. The findings of this study indicate that while Nepal's educational policies clearly advocate for smaller class sizes, proper classroom space and effective seating arrangements, the actual implementation reveals a significant gap. Further classroom observations reveal that many schools face infrastructural and logistical challenges, such as inadequate space and insufficient seating arrangements, which hinder the effective implementation of the learner-centered pedagogical practices. Despite notable progress in policy development, a persistent disconnect

476

between policy and practice remains. Addressing these infrastructural deficiencies is essential to fully realizing the benefits of class size reduction and improved seating arrangements in Nepal's Basic schools.

Context of the Study

Education experts, policymakers, curriculum developers, psychologists, parents, and teachers often hold favorable views on the influence of class size on educational outcomes. It is widely believed that, under otherwise equal conditions, smaller class sizes contribute to enhanced educational performance (Blatchford & Mortimore, 1994). The concept of reducing class sizes to improve student achievement has been a focal point of research, discussion, and policy debate for decades. The rationale is straightforward: with fewer students, teachers are positioned to attain higher academic outcomes, a consideration that frequently motivates parents to opt for private schooling (Beavis, 2004). Nevertheless, policymakers must rigorously assess three essential factors when contemplating educational reforms: the reform's effectiveness, associated costs, and the complexities of implementation, which include addressing the support or resistance of key stakeholders, such as school administrators, educators, and parents (Folger & Breda, 1989).

In the past, researchers reached varying conclusions about the benefits of smaller class sizes because they measured it in different ways, resulting in inconsistent recommendations. In 2002, Margaret Spellings, the US Secretary of Education under President Bush, emphasized the need for a clear and standardized definition of class size. The education community now recognizes the direct count of students in a class as the most reliable measure for understanding a teacher's ability to connect with students. In contrast, the pupil-to-teacher ratio is less reliable, as it includes non-teaching staff and can inflate the perceived benefits of reducing class size.

To differentiate between student-teacher ratio and class size, it is important to understand their key differences. Class size usually refers to the average number of students in a classroom at a specific grade level within a school. On the other hand, the student-teacher ratio is calculated by dividing the total number of students by the total number of teachers in a school. This distinction is significant because the student-teacher ratio does not always reflect the actual class size. For example, a school might have a low student-teacher ratio but still have larger class sizes than what that ratio indicates.

The physical environment of the classroom - including space, seating materials, instructional materials, and furniture - enhances student comfort and supports effective teaching and learning. However, it is difficult to define specific parameters for classroom size, seating, and displays. Adequate space per student is crucial for effective learning. Schools should incorporate large communal areas, such as media centers, dining halls, and courtyards, to promote interaction and community building. Specialized rooms like labs and art studios require more space than standard classrooms. Classroom size should be based on curriculum activities, with these guidelines serving as basic recommendations for traditional setups, such as lectures and small group work. Research underscores the importance of natural light and adjacent outdoor spaces, particularly in elementary schools, where classrooms should have windows and access to outdoor learning areas (Tanner, 2000).

The provision of adequate exit doors is essential for ensuring safety, particularly in light of increasing concerns surrounding school violence. A frequently posed question in this context is: What constitutes the ideal classroom size? Addressing this issue is inherently complex, as it is shaped by a multitude of social, educational, and cultural factors. Hawkins and Lilly (1998) and Castaldi (1994) have conducted extensive analyses of various classroom environment dimensions. However, the principal focus extends beyond mere physical space to encompass the ratio of students to available classroom space. Thus, the central question becomes: What is the optimal number of students a classroom should effectively accommodate?

The major objectives of the present study are given below:

- to undertake a comprehensive review of the prevailing policies of government on class size and seating practices in Nepal, and
- to observe and assess the adequacy and inadequacy of classroom sizes in Basic Schools in Nepal.

Review of Literature

In this section, I commence with an exposition of Lazear's theory of class size, elucidating its theoretical implications and deriving significant insights relevant to the subject matter. Subsequently, I provide a succinct historical overview of the classroom reduction movement, highlighting its evolution and the key milestones that have influenced contemporary educational practices. Conclusively, I engage in a critical analysis of the existing literature pertaining to class size and seating practices, synthesizing findings from various studies to contextualize the ongoing discourse within the field.

Classroom Reduction Movement (RRM) Movement

Research on the impact of class size on student achievement is abundant (Biddle & Berliner, 2002), but class size experiments often occur in uncontrolled field settings, which can affect the results. A meta-analysis of early class size studies (Glass & Smith, 1979) yielded mixed conclusions about class size effects on student achievement. They identified several issues in past studies, including selective literature searches, primarily narrative reviews, and mistakes in the quantitative integration of findings. The meta-analysis by Glass and Smith (1979) categorized class size research into four stages: the pre-experimental era (1895-1920), the primitive experimental era (1920-1940), the large-group technology era (1950-1970), and the individualization era (1970-present). They noted that with each new stage, the research methodology became more sophisticated, allowing for different perspectives on the effects of class size on student achievement. These perspectives were influenced by historical events, including the post-war baby boom of the 1940s, the introduction of teaching technologies in the 1960s, and teacher labor movements along with declining enrollments in the 1970s. As new interpretations emerged, the understanding of class size data evolved to serve changing purposes (Glass & Smith, 1979).

In a separate meta-analysis, Biddle and Berliner (2002) echoed the findings of Glass and Smith, noting that early experimental studies on class size began in the 1920s. They observed that it was not until the late 1970s that more sophisticated research methods, including meta-analyses, became available. These advanced methods allowed for the statistical aggregation of results from similar smaller studies to estimate the effects of class size on various populations. Likewise, Both Glass and Smith (1979) and Biddle and Berliner (2002) agreed that short-term exposure to smaller classes led to improvements in student achievement, particularly in early grades and in classrooms with fewer than 20 students. Additionally, these gains were more pronounced for traditionally disadvantaged student groups.

Slavin (1990), argue that smaller classes have only moderately positive effects compared to larger ones. These benefits are primarily observed when class sizes are significantly reduced, such as from 25 to 15 students for three or more consecutive years. Reducing class sizes from 30 to 25 students, however, has little impact on achievement. Slavin suggests that hiring additional teachers for one-to-one tutoring would be more effective than simply reducing class sizes, as the outcomes would be similar. He acknowledges that smaller classes can improve school morale and help retain teachers. While Slavin contends that current research does not strongly support funding for class size reduction, he still recognizes that smaller class sizes yield some positive effects compared to larger classes. Students spend most of their day, typically 6-7 hours, in the classroom, making classroom size and student numbers crucial for effective learning.

Research that Supports the Effectiveness of Smaller Classes

The Student Teacher Achievement Ratio (STAR) study, conducted in Tennessee in the late 1980s, is the most credible research on class size reduction (CSR). Starting in 1985, students and teachers were randomly placed in either small classes (15 students) or regular classes (22 students), resulting in a 32%

478

class size reduction. Several studies have been based on the STAR experiment, including one that examines long-term outcomes. Krueger (1999)'s analysis of the Tennessee STAR experiment shows that students in smaller classes outperformed their peers in regular classes by 0.22 standard deviations, equivalent to about three extra months of schooling after four years. The positive effects were strongest in the first year and most significant for black, economically disadvantaged students, and boys. A follow-up study using IRS tax records found that the economic benefits of smaller classes outweighed the costs, with a 6% positive rate of return. STAR researchers also discovered that students in small classes were 2% more likely to attend college by age 20, although income impacts at age 27 were inconclusive due to measurement issues. Overall, the research indicates that early class-size reduction significantly boosts academic achievement and has lasting economic benefits.

Rivkin, Hanushek, and Kain (2005) analyzed the impact of class size in Texas during the mid-1990s using data from over half a million students in 3,000 schools. Their study found that smaller class sizes had positive effects on reading and math in 4th grade, smaller but significant effects in 5th grade, and little to no impact in later grades. However, since state assessment data was only available starting in 4th grade, they could not examine early grade effects like those in the Tennessee STAR study. The class size effects in Texas were about half as strong as those seen in Tennessee's early grades. International studies also support the positive effects of class size reduction. In Israel, Angrist and Lavy studied the impact of a class-size limit of 40 students. When student numbers exceed 40, an additional teacher and classroom are added, leading to significantly smaller classes in some cases. For example, a 3rd grade with 81 students would have two classes of 27 each. The researchers found positive effects of smaller class sizes in 4th and 5th grades, though the effects were smaller than those in the STAR study. They found no effects on 3rd-grade scores.

Studies with Mixed Results

Jepsen and Rivkin (2009) carried out a sophisticated analysis to examine the influence of both the class-size reduction and the changes in the teacher workforce. They find positive effects for class-size reduction that are about half as large as those found in Tennessee. At the same time, they find that increases in the numbers of new and not-fully-certified teachers offset much of these gains. In other words, students who ended up in the classrooms of teachers new to their classrooms and grades suffered academically from the teacher's inexperience by almost the same amount as they benefited from being in a smaller class. Major education initiatives do not operate in a vacuum. Policies designed to affect one dimension of a student's educational experience are likely to affect others as well. Other unintended negative consequences of California's CSR policy included an increase in class size in grades four and five and the use of multigrade classrooms.

Woessmann and West (2006) taking advantage of differences in average class size between the 7th and 8th grades within schools, examined class-size effects on performance on international examinations in 11 countries around the world. They find educationally meaningful effects of smaller classes in a small number of countries, and a roughly even split between no effects and small effects in the remainder of the countries. Interestingly, the countries in which they find educationally meaningful positive effects of smaller classes are those with low salary levels for teachers and lower than average performance on international exams. A low average salary level for teachers suggests that a country is drawing its teaching population from a relatively low level of the overall capability distribution of all its employees. Thus, the countries studied by Woessman and West seem to have taken different paths, with some opting for relatively large numbers of poorly-paid teachers who perform better in smaller classes and others having relatively fewer but better-paid teachers whose performance isn't as affected by the number of students in class. In this regard it is worth noting that the East Asian nations that perform at higher levels than the US. on international exams have very large class sizes.

Accordingly, Dee and West (2011) used a nationally representative database of students to compare the outcomes of the same eighth-grade students who had attended different size classes in different subjects. They find no overall impact of class size on test scores, i.e., the same students did not perform better in the

subjects in which they had smaller classes. There was, however, a small positive effect on test scores in urban schools, and modest overall positive effects on non-cognitive skills such as student attentiveness and attitudes about learning.

Studies with Negative Results

Hoxby (2000) analyzed natural class size variations in Connecticut, caused by fluctuations in student populations. For instance, a school with 15 first-graders one year and 18 the next would have a larger class in the second year. Similarly, a school with a 25-student class limit would have one second-grade class with 25 students or two smaller classes if there were 26 students. Hoxby found no link between class size and student achievement in fourth and sixth grades, even in schools serving disadvantaged or minority students.

Chingos (2010) systematically examined the broad and expensive Florida CSR policy. In 2002, voters approved an amendment to the Florida state constitution that set limits on the number of students in core classes (such as math, English, and science) in the state's public schools. Beginning with the 2010-2011 school year, the maximum number of students in each core class would be: 18 students through grade 3; 22 students in grades 4 through 8; and 25 students in grades 9 through 12. Chingos (2010) analyzed the phased implementation of class-size reductions from 2004 to 2009 using a before-and-after approach. He found no evidence that the Florida policy improved test scores in grades 3 through 8, where state assessments in math and reading were conducted.

Research Methods and Materials

This study utilizes two methodologies. First, an extensive review of educational policies documents was conducted to investigate policies and arrangements concerning classroom sizes at the school level. Secondly, direct observations were carried out to assess classroom dimensions in 30 selected basic schools within the Kathmandu Valley. This article is grounded in a comprehensive analysis of reports from educational commissions, governmental educational policies, strategic plans, curriculum frameworks, and other policy documents published since the establishment of Nepal's first education commission in 1956. Thematic content analysis was conducted using an inductive-deductive iterative approach (Fereday & Muir-Cochrane, 2006) to systematically examine and interpret the educational policies.

Accordingly, the findings are thematically structured and aligned with policy documents to ensure consistency and enhance trustworthiness (Braun & Clarke, 2006; Nowell et al., 2017). In instances where documents, such as the All-Round National Education Commission (ARNEC, 1961) and the Higher-Level National Education Commission (HLNEC, 1999), were available exclusively in Nepali, the necessary data were translated into English. This translation process was essential to ensure the accessibility and comprehensibility of the data for broader analysis. Meticulous attention was given to maintaining the fidelity of the original meaning, particularly with nuanced terminologies specific to Nepal's educational policies. Additionally, cross-referencing with bilingual experts was employed to validate the accuracy of critical terms and concepts, thus enhancing the reliability of the translated information. The authors rigorously examined the themes and subthemes, maintaining referential adequacy through repeated reference to the documentary data.

Table-1 summarizes the education policies reviewed, emphasizing their concerns related to classroom size.

Table-1: Major educational commissions and plans

Years (AD)	Name of the Educational Commissions	Short Name
1956	Nepal National Education Planning Commission	NNEPC
1961	All-round National Education Commission	ARNEC
1971	National Education System Plan	NESP

1981	Curriculum Implementation Plan	CIP
1992	National Education Commission	NEC
1999	Higher Level National Education Commission	HLNEC

Table-2 provides a summary of the project documents reviewed, highlighting their specific concerns regarding classroom size.

Table-2: Major educational projects and report

Years (AD)	Name of the Educational Commissions	Short Name
1992-1998	Basic and Primary Education Project I	BPEP-I
1999-2004	Basic and Primary Education Programme-II	BPEP-II
2004-2009	Education for All	EFA
2010	Child Friendly School for Quality Education Framework	CFQEF
2009-2015	School Sector Reform Plan	SSRP

The research process began with a comprehensive analysis of educational policies focusing specifically on regulations and guidelines related to classroom size. This phase involved thoroughly examining policy documents, educational frameworks, and other official guidelines that dictate or influence how classrooms should be structured in terms of space, capacity, and layout at the school level. The purpose was to understand the standards set by governing bodies and educational authorities regarding the optimal or required classroom size, as these standards directly impact the learning environment. Following the document analysis, the study proceeded to the practical observation phase, which involved visiting nine schools offering basic-level education across the districts of Kathmandu, Bhaktapur, and Lalitpur. A purposive sampling method was utilized to select the sample schools. In the sample selection process, 10 schools were chosen from each district. Within each district, the sample was stratified to include 3 schools from remote areas, 3 from mid-range areas, and 3 from urban areas, ensuring a diverse representation of educational settings. As a result, 30 basic-level schools were selected as samples from the three districts. During these site visits, the researcher conducted direct observations of the physical dimensions of the classrooms in each school. These observations involved measuring or assessing the available space, evaluating its alignment with policy recommendations, and identifying any discrepancies or issues related to the adequacy of classroom size.

By combining policy analysis with field observations, this approach allowed for a deeper understanding of how classroom size standards are implemented or challenged in actual school settings across different regions. This method also provided insights into whether the conditions in these classrooms met the standards specified in educational policies, shedding light on potential gaps between policy and practice. The objective of this process is to discern the discrepancies between policy provisions and actual classroom practices

Results and Discussion

The Results section is structured into two distinct subsections. The first subsection presents the findings derived from the policy review. In the second subsection, the results obtained from the field study are discussed. These subsections collectively provide a comprehensive overview of the research outcomes.

Review of Policies Documents

This section provides a comprehensive summary of the provisions concerning classroom size as outlined in the documents of various educational commissions and implemented projects in Nepal. These provisions reflect the evolving policies and guidelines aimed at optimizing classroom environments to support effective teaching and learning. Additionally, the review highlights the alignment - or lack thereof - between policy recommendations and their practical implementation in schools.

Basic School Classroom Size Policy and Practices in Nepal

In ancient times, there were no dedicated school buildings. Learners would assemble in open spaces, such as Choutari, or in communal areas like temples, Mathas, Patis, or Pouas, as well as in the homes of teachers or wealthy individuals. Some classes were even conducted within learners' homes, with either a visiting teacher or a family member providing instruction (Singh, 2012; Shah, 2024). Buddhist education was primarily conducted in Gompas, Ghangs, Viharas, and monasteries, with lessons often held outdoors or amidst nature. The Hindu Varnashram system, which structured society according to religious principles, designated specific schools and curricula for each Varna, with institutions such as Devakula, Gurukula, Rhishikula, and Rajkula serving distinct educational purposes (Shah, 2024). In 1853, Jung Bahadur Rana established Durbar School, marking the introduction of modern English education in Nepal. For 38 years, the school operated without a permanent facility, moving between various Rana palaces (Shah, 2020). In 1891, a permanent building was finally constructed, with Durbar School located on the upper floor and Ranipokhari School on the ground floor, marking a significant advancement in Nepal's educational infrastructure (Shah, 2024).

By 1951, it was observed that school buildings were primarily constructed by the government. Following the advent of democracy, both the government and local communities became involved in the construction of schools or the repurposing of existing structures for educational purposes. In regions lacking dedicated school buildings, alternative provisions continued to be utilized (Shah, 2013; Singh, 2012). In areas where school buildings were present, respondents frequently reported substandard conditions, including poor lighting, inadequate ventilation, minimal resources, floor seating, and a single teacher responsible for multi-age and multi-grade classrooms (Singh, 2012). The development and expansion of education in Nepal significantly accelerated following the introduction of democracy in 1950. Schools were established without a formal assessment of community needs or a strategic framework for their distribution. The government adopted a liberal policy towards school establishment, facilitating the opening of schools without stringent regulations. While some schools were founded by the government, a substantial number were initiated by local communities through independent efforts. In many cases, the infrastructure for these schools was constructed by the local populace, often without any financial assistance from the government.

In 1961, the Panchayat system (Panchayat Democracy) was introduced, resulting in the suspension of the democratic system in the country. The government implemented stringent regulations, effectively prohibiting the establishment of schools by the general public. To assess the existing educational landscape and recommend strategies for its advancement, the government appointed an education commission to conduct a comprehensive review of the prevailing education system.

In 1971, based on the recommendations of previous education commissions, advisory councils, and consultations with teachers and head teachers, the National Education System Plan (NESP 1971-75) was implemented. This plan brought about a comprehensive transformation of the existing education system, encompassing significant reforms in curriculum design, the structure of education, and educational financing. Despite these reforms, the government did not fully subsidize the salaries of lower secondary and secondary school teachers, providing only partial funding. Additionally, there was insufficient investment in essential physical infrastructure, including school buildings, desks, benches, and other classroom materials.

Classroom Size Policy and Practices in Education Commissions and Plan

Following the 1951 popular movement and the establishment of democracy, the Nepal National Education Planning Commission (NNEPC, 1956) assessed the country's education system and produced a comprehensive report. Many schools at the time were one-room structures with only one or two teachers, often conducting classes outdoors or in makeshift shelters (Shah, 2024; Singh, 2012). These schools lacked the resources to offer quality education. The NNEPC recommended that Basic Schools occupy at least three acres of land, have up to five classrooms, and provide ample play space, proper drainage, and an aesthetically pleasing environment. Class sizes should be limited to 30 students, with nine square feet per pupil. Schools were expected to include a library, laboratory, workshop, community room, office, and a common room for teachers (Singh, 2012). Classroom essentials included floor mats, individual writing boards, chalkboards, teacher's desks, and storage facilities (College of Education, 1956). The grounds were also to have play areas, a garden, and space for agricultural activities.

The All-round National Education Commission (ARNEC, 1961) did not address the current state of education or previous recommendations (ARNEC-1961) It acknowledged the continuation of 'one-room schools' until a teacher and school could be assigned to each grade, without specifying when this would happen (Shah, 2024). The report emphasized co-education with 25-40 students per teacher. It also prioritized boarding schools for delivering quality education (Singh, 2012; Shah, 2024). The National Education System Plan (NESP, 1971-76) was introduced in 1971. It recommended a 1:30 teacher-student ratio at the primary level and emphasized the importance of proper buildings, furniture, playgrounds, and facilities for quality education (NESP-1971) The NESP reaffirmed the earlier NNEPC recommendation to set standards for school buildings and their sites (Singh, 2012; Shah, 2024). It also called for enforcing rules on necessary physical facilities based on location and function. However, little progress was made in improving school infrastructure over the following 15 years. National Education Commission, (NEC, 1992), High Level National Education Commission (HLNEC, 1999) also laid emphasis on the physical infrastructures, open space, and seating arrangement.

Classroom Size Policy and Practices in Educational Projects

Basic and Primary Education Project I (1992-1998). The Primary Education Project (PEP) sought to enhance school facilities with 40% funding from the project and 60% from the community. An evaluation by CERID in 1986, published in 1989, revealed that PEP schools in six districts outperformed non-PEP schools, particularly in building and seating quality. The Basic and Primary Education Project I (BPEP-I), from 1992 to 1998, developed designs for school infrastructure, focusing on well-ventilated, well-lit, and spacious environments. A minimum space standard of 0.75 square meters per pupil was established, with three-seater desks for Grades I to III and two-seater desks for Grades IV and V. The designated seating space of 0.75 square meters per pupil ensures adequate room for students to sit comfortably while facilitating movement and interaction. The use of three-seater desks in lower grades promotes collaboration, while two-seater desks in higher grades support individual work and group activities. This thoughtful arrangement is critical for creating a conducive learning environment.

The Basic and Primary Education Programme-II (BPEP-II) (1999-2004) highlighted the inadequate infrastructure in Nepal's Basic Schools, particularly the minimal allocation of 0.75 square meters of space per child, which was deemed insufficient. The plan stressed the importance of creating suitable learning environments to encourage student retention. The "Education for All National Plan of Action Nepal, 2001-2015" reinforced this by prioritizing educational facility surveys, school mapping, and infrastructure improvements, including libraries and computers, while maintaining the minimum space requirement per child. The plan also set forth guidelines to maintain optimal class sizes of 25-30 students in Grade 1 and 30-35 in other primary grades, while ensuring a minimum classroom space of 0.75 square meters per child. Additionally, it proposed providing a minimum of two computers per primary school and establishing libraries and science laboratories in all Basic Schools. According to the Department of Education (DOE), there was notable progress in infrastructure development during this period (DOE, 2006).

The Education for All 2004-2009 Core Document (MOES, 2003) stressed the need for at least 0.75 square meters of classroom space per child to ensure a proper learning environment. It recommended limiting class sizes to 25 students in Grade I and 30 in Grades II-V. Classrooms should be flexible to allow different layouts and equipped with teaching aids, reading materials, and areas for specialized activities. Each primary school was also expected to have two computers, a library, and a science laboratory.

Child Friendly School for Quality Education Framework (2010) also raise voice on per child space. A classroom setting refers to a space designed for education, where participants can interact with each other and the instructor (DOE, 2010). It includes essential elements like chairs, writing surfaces, and a focus on creating a conducive, distraction-free learning environment. Key factors include class size, seating arrangement, and the positions of the teacher and interpreter. The DOE (2010) emphasized the importance of inclusiveness, calling for teachers to have skills in seating planning, student interaction, and individualized support. Standards for classroom settings also cover space allocation and classroom displays.

A learning space refers to the physical environment where teaching and learning take place. It goes beyond just being a classroom and can be indoors, outdoors, or even virtual. Learning spaces vary in use, style, and setup, depending on the needs of the learners and the educational institution. These spaces are more than just tables and chairs - they are considered a "third teacher," meaning that the environment itself can be designed to engage, support, and inspire students in their learning. This requires flexible furniture that can be adjusted to suit different learning activities. Child Friendly School for Quality Education Framework (2010) does not specify seating arrangements but offers guidelines for classroom space which is provided in the table-3.

Table 3: Minimum expected standards

Minimum	Expected
1 classroom per 50 students	1 classroom per 40 students
0.75 square meter area per student	1 square meter area per student
Mat, cushion for floor seating for the students of grades 1 to 3	Carpet, cushion for floor seating for the students of grades 1 to 3
One set of desk and bench for every 4 students	Appropriate chair and table for each student
Students age-appropriate height of the desk and bench	Light desk and bench that allow variety of seat arrangements as required
Width of student's desk 15 inches	Width of student's desk 18 inches

School Sector Reform Plan (SSR, 2009-2015) emphasizes the importance of sufficient space per child, mandating a minimum of 1 square meter for basic education and 1.25 square meters for secondary education. It also requires class sizes to be limited to 40 students and a teacher-student ratio of 1:40. Schools must ensure well-furnished, ventilated classrooms, each equipped with essential resources like desks, benches, and a writing board. Additionally, schools must provide proper infrastructure, including a compound wall, toilets, a playground, drinking water, and a library (MOES, 2008).

The School Sector Reform Plan (2009-2015) outlines the importance of optimizing both the physical and educational environments within classroom settings to improve the quality of education. It provides specific guidelines to achieve this, recommending separate classrooms for each grade, ensuring at least one square meter of space per student, and maintaining class sizes not exceeding 40 students with a maximum teacher-student ratio of 1:40. Additionally, the plan envisions each classroom to be well-equipped with essential facilities, such as proper ventilation, writing boards, desks, benches, and a designated book

corner, to create a conducive learning environment (MOE, 2009). School Sector Reform Plan (2009-2015) focuses on the infrastructures including classroom size and classroom materials.

The key documents, including the Child Friendly School for Quality Education Framework (2010) framework, Education for All 2004-2009, and School Sector Reform Plan 2009-2015, outline the intended teaching practices for primary school classrooms in Nepal. They focus on important aspects of classroom and instructional settings, such as the number of students, space, seating materials, furniture, and instructional resources, all aimed at improving teaching quality. These documents outline some pedagogical practices including class room seating arrangement. A summary of these elements is provided in the table -4:

Table 4: Aspects of classroom setting

Classroom aspect	CFS framework	SSR/SSRP	EFA
Students/ classroom	40	40	25 in Grade I and 30 at Grades II to V
Area/student	1 sq. m.	1 sq. m.	At least 0.75 sq. m.
Students per class		40	
Seating material and arrangement	Chair and table for each student	Desk and benches	Flexibly designed furniture to allow for a variety of organizational layouts.

Observation of Classrooms

This section presents the findings derived from the direct observation of classrooms across 30 basic-level schools within the Kathmandu, Bhaktapur and Lalitpur District. The major objective of the present study is to examine the classroom sizes in basic schools. To achieve this, data was collected through direct observation of classroom sizes, analyzed, and subsequently presented. Initially, the researcher observed the physical infrastructures present in the sampled schools. Following this, data were collected. Finally, the collected data were analyzed, and the contextual meanings derived from the analysis were presented in the subsequent sections.

Classroom Space

Students typically spend a significant portion of their day - approximately 6 to 7 hours -within a classroom environment. Given this extensive time, the dimensions of a classroom, in terms of both spatial capacity and student numbers, are crucial for facilitating effective learning experiences. Optimal classroom size not only impacts students' comfort but also directly influences their engagement, interaction, and academic performance. Research indicates that appropriately sized classrooms can reduce stress and improve concentration, allowing educators to better manage the learning environment and meet diverse student needs.

Table-5: Classroom space

Classroom Space	Very Satisfied	Satisfied	Dissatisfied	Extremely Dissatisfied	Total
No. of Schools (30)	6	9	9	6	30
%	20	30	30	20	100

Field Survey: 2024

In this study, the classroom sizes in the selected sample schools were found to be unsatisfactory. Among the schools included in the study, only 9 (30%) classrooms were observed to be of satisfactory size. Similarly, 6 (20%) schools had classrooms that were in very good condition and suitable for seating. However, classrooms in 15 (50%) schools were found to be unsuitable for students to sit comfortably. The

485

classroom sizes in the selected basic-level schools appear inconsistent with the policies outlined in policy documents, indicating a gap between policy and practice. Provisions regarding classroom dimensions, as established in both Nepalese and international guidelines, are not being implemented effectively or uniformly. This discrepancy suggests the need for stronger policy enforcement and regular monitoring to ensure that classroom environments meet established educational standards.

Kinsler and Gamble (2001) referenced a study conducted by the US Department of Education, which found that smaller class sizes of 15-20 students in early grades yield substantial academic benefits, especially for diverse student populations. In this setting, average student performance was observed to increase from the 50th to the 60th percentile, with even greater gains among disadvantaged and minority students. Further research by Tanner (2009) examined the relationship between school facilities and student achievement. Tanner identified student density-specifically, the amount of space available per child-as a more critical factor than classroom size alone. High-density conditions, whether due to excessive numbers of students or insufficient space, contribute to stress, disruptions, and reduced control within the learning environment. Following social distancing guidelines that recommend 7 feet between individuals, Tanner proposed a chart detailing minimum classroom sizes. For example, a classroom of 50.13 square meters is recommended for 10 students and one teacher, while a space of 95.70 square meters is suggested for 20 students and one teacher. Tanner concluded that no more than 17 students should occupy an average classroom of approximately 85 square meters in elementary schools, aligning with an American standard of about 5 square meters per student. This standard accommodates student seating, display materials, storage, and learning areas. Although classroom size and space per student are essential factors for learning, they are not the sole determinants of educational outcomes.

Seating Arrangement in the Classrooms

Classroom seating arrangements signal the underlying pedagogical approach. Traditional rows and columns often reflect a teacher-centered model, with the teacher as the primary knowledge source and students in passive roles. This arrangement is effective when students need to focus on the front of the classroom. However, flexible seating configurations can support interactive activities without changing the fixed position of desks or benches, allowing for dynamic shifts during lessons to meet different teaching needs. These factors guided the observation and documentation of teaching-learning processes, particularly in relation to seating arrangements.

An examination of classroom dimensions and seating configurations in schools reveals that most classrooms follow traditional T and L-shaped arrangements. These setups reflect conventional approaches to seating that prioritize linear or front-facing layouts. Modern pedagogical practices, however, emphasize flexible seating arrangements that support collaborative and interactive learning. In the observed schools, group seating, U-shaped configurations, and round table formats, which foster student interaction and cooperative engagement, were implemented infrequently. This lack of varied seating arrangements suggests a gap between classroom design and contemporary instructional strategies aimed at enhancing student-centered learning.

Table-6: Seating arrangement in the classrooms

Classroom Shape	T Shape	L Shape	U Shape	Group	Round	Others
No. of Schools (30)	10	6	5	2	2	5
%	33	20	17	7	6	17

Field Survey: 2024

Classroom arrangement should follow the principle of "fitness for purpose" (Cohen, 1996). Cohen outlines five key principles: (i) allowing for both child-centered and teacher-centered activities, (ii) enhancing formal learning through real experiences or play, (iii) facilitating tactical and imaginative play, (iv) providing essential learning resources, and (v) fostering an environment for spontaneous learning. A

dynamic classroom benefits from a variety of seating arrangements suited to different instructional purposes. Light, movable furniture enhances flexibility (Alexander, 2000), but teachers must also know how to organize available furniture effectively. Row and column seating works well for individual tasks, minimizing peer interaction and maximizing teacher visibility (Cohen, 1996). Group seating supports cooperative learning, while a U-shape setup, with the teacher positioned at the open end, reinforces authority - ideal for classes needing stronger behavior management and discussion guidance (Arends, 2001). Circular arrangements foster closer student - teacher interactions and encourage peer conversation. When desks and benches cannot be moved, students can adjust seating patterns to form groups, such as facing each other across benches (Crawford, 2005). Additional seating styles, such as clusters, desk rows, table rows, semicircles, pairs, and activity zones, further enhance learning flexibility (Ramsden, 1999).

While seating arrangements in a classroom can suggest the teacher's role and level of student involvement, Alexander (2000) emphasizes the importance of observing actual teaching practices rather than relying solely on seating layouts. There is a distinction between "base" (where students sit) and "team" (how they interact). For instance, students may sit in groups but work individually or sit in rows yet collaborate. Seating can also be adjusted during lessons as needed. Nevertheless, seating arrangements offer an initial clue to a classroom's pedagogical approach. For example, row seating with students facing a teacher at the front often signals a teacher-centered, one-way communication style.

Conclusion

This study critically assessed the extent to which classroom sizes in Basic Schools across Nepal align with the standards and guidelines set forth in national and international educational policy documents. A comprehensive review of relevant policies and literature revealed a significant gap between policy intentions and actual implementation in school settings. While Nepal's educational policies advocate for smaller class sizes, sufficient classroom space, and appropriate seating arrangements, the findings indicate that the practical application of these policies is impeded by infrastructural and logistical challenges. Classroom observations further highlighted issues such as inadequate classroom space, insufficient seating arrangements, and ineffective student management practices, all of which hinder the full realization of a child-centered curriculum. Despite progress in policy development, a persistent disconnect between policy and practice remains a critical issue. To fully realize the potential benefits of these policies, addressing existing infrastructural deficiencies and ensuring effective implementation across Nepal's primary education system is essential. This study provides valuable insights into the challenges facing Nepal's education system and emphasizes the need for alignment between policy and practice to enhance educational quality and equity.

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