

Strategic Educational Management for Inclusive Institutions: Challenges and Opportunities in Special Education

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ABSTRACT:

Inclusive education has become a major global priority aimed at promoting educational equity, accessibility, and participation for diverse learner populations. However, many educational institutions continue to experience challenges associated with resource disparities, infrastructural limitations, and institutional readiness for inclusive education implementation. This study examined the influence of strategic educational management and institutional inequality indicators on inclusive educational effectiveness within educational institutions. A quantitative research approach employing secondary data analysis was adopted using the Education Inequality Dataset obtained from the Kaggle repository. The study analyzed institutional indicators including funding per student, student–teacher ratio, internet accessibility, percentage of low-income students, percentage of minority students, and dropout rates. Descriptive statistics, correlation analysis, multicollinearity diagnostics, and multiple regression analysis were conducted using SPSS and

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Python-based statistical procedures. The findings revealed substantial disparities in institutional funding, socioeconomic composition, and technological accessibility across educational institutions. However, the regression analysis demonstrated weak and statistically insignificant relationships between the selected institutional variables and dropout rates, indicating that inclusive educational effectiveness is influenced by multidimensional institutional, governance, and sociocultural factors beyond structural resource indicators alone. The study contributes to strategic educational management literature by emphasizing the importance of integrated governance systems, inclusive leadership, institutional adaptability, and equitable resource planning in strengthening inclusive educational environments and reducing educational disparities.

Keywords: Inclusive education, strategic educational management, educational equity, institutional governance, special education.

1. Introduction

Inclusion has emerged as one of the most relevant global priorities within educational institutions due to the increasing awareness of educational equality, social justice, and equal educational opportunities. More and more organizations are switching to an inclusive approach and are abandoning their previous segregated approaches to education. These changes require educational organizations to start considering additional factors in their practice that would facilitate the integration process and help provide equal access to education to all students irrespective of any physical or mental impairments (Karim & Hue, 2022; Hunt, 2019). Therefore, the scope of tasks facing educational organizations has greatly expanded, which necessitates a new strategic management approach to be implemented for overcoming the educational inequalities and creating an effective learning environment.

Strategic educational management is described as a process that implies the implementation of specific policies and practices within the organization in line with its strategic goals and the improvement of learning processes. Modern educational settings face the need to manage different types of diversity, the advancement of technology, financial constraints, and policy

changes among other issues. Baltabayeva et al. (2020) noted that successful strategic management is crucial to improve the performance of institutions within modern educational systems. According to Tlek and Kasiya (2023), strategic leadership enables educational organizations to cope with innovation and organizational change. Strategic management is especially important within inclusive institutions because inclusion requires institutional adaptations and planning.

The increasing recognition of the importance of inclusive and equitable education worldwide has been emphasized in global educational policies, such as the United Nations Sustainable Development Goals (SDGs), especially SDG-4 promoting inclusive and quality education for everyone (Corbett & Guilherme, 2021). Equity in education, hence, became a significant issue for policymakers and educational administrators aimed at decreasing inequities in education. Nevertheless, despite global commitments towards inclusion, there is still much room for improvement in terms of institutional inequalities concerning funding, infrastructure, digital accessibility, and educational support. Silva and Sá (2018) highlighted the difficulties facing many educational institutions when striving to create equitable governance in order to accommodate students' needs. This aspect becomes even more

relevant for those students who need extra educational assistance due to the fact that organizational limitations prevent equal access to the necessary educational tools and inclusiveness.

Previous research suggests that institutional readiness is the key component for successful inclusion. It is widely recognized that in order to become inclusive, educational institutions need to be ready from infrastructural, technical, managerial and social aspects. Denisova et al. (2023) found that the presence of an inclusive institutional culture and readiness for inclusion among professionals are key characteristics of institutional readiness. Insufficient infrastructural development, overcrowded classrooms, lack of technological means and uneven financial support hinder inclusion in educational institutions in different parts of the world (Asaju, 2023). Moreover, financing systems and performance-based funding might contribute to institutional inequalities and, therefore, influence the adoption and implementation of inclusive educational policies and practices (Ebersold et al., 2019; Zerquera & Ziskin, 2020).

While numerous studies examined various issues related to inclusive education, only a few attempted to explore the topic through strategic educational management perspective in relation to institutional equity indicators. Although scholars tend to focus on inclusive pedagogies or policies, not many have paid attention to institutional management aspects. As such, this research intends to investigate the role of strategic educational management in overcoming institutional inequities in inclusive educational environment and examine the connection between institutional equity, educational accessibility and special education through educational equity indicators.

Research Objectives

1. To examine the impact of strategic educational management on inclusive institutional effectiveness and educational equity
2. To analyze the challenges associated with institutional resource disparities, infrastructural limitations, and digital accessibility in the

implementation of inclusive education

3. To identify strategic opportunities for improving inclusive educational governance through equitable resource allocation, institutional readiness, and technology-supported educational management

2. Methodology

2.1 Research Design

This research used a quantitative methodology where a cross-sectional design was applied to determine the correlation between strategic educational management and institutional inclusion for inclusive institutional effectiveness. Quantitative design was selected since it helps to analyze the measurable aspects of educational inequalities in relation to the institution's inclusion. This research is aimed at assessing the effect of resource distribution in institutions, institutional infrastructure, and educational accessibilities on inclusive educational environments.

2.2 Data Source and Population

The study made use of the secondary data, which was available at the Kaggle database, called the Education Inequality Dataset. This dataset includes the variables associated with educational and institutional factors like funding distribution, teacher-student ratio, Internet connectivity, dropout percentages, presence of minorities, and academic performance. The study included the population comprising educational institutions found in the above-mentioned dataset. As the entire research was based only on the secondary source data, there was no need for participant selection (Hasan, 2025).

2.3 Study Variables

In this study, the variables have been classified into independent variables and dependent variables for testing the effect of institutions' environment on the inclusion results in education. The independent variables include cost per pupil, Internet availability, pupil-to-teacher ratio, school type, and socioeconomic factors such as low-income students and minority students. On the other hand, dropout rate and academic

achievement have been considered as dependent variables, representing institutional efficiency and educational inclusion.

2.4 Data Analysis Techniques

The secondary data obtained from the analysis were statistically analyzed using SPSS version 22. This analysis entailed the use of descriptive statistics in form of frequency, percentage, mean, and standard deviation. In addition to this, Pearson correlation analysis was utilized to measure the relationship between institutional resource factors and inclusive education. Lastly, multiple regression analysis was carried out to evaluate the predictive impact of strategic education and institutional factors on the education outcome and dropouts.

2.5 Ethical Considerations

Proper ethical considerations have been put in place while doing this study to make sure that the data analysis is carried out in accordance with the rules. The research has relied on data from public institutional sources sourced from the Kaggle platform, which does not require any interactions with human subjects. None of the subjects'

personal information was in the data set, thus protecting their confidentiality.

3. Results

3.1 Descriptive Statistics

Descriptive statistics for the institution and education-related inequality variables used in the study are shown in Table 1 below. According to the results, the average expenditure per student for the sampled educational institutions is USD 15,154.16 (SD = 5931.38). The average score obtained by sampled institutions is 70.00% (SD = 17.70). Meanwhile, the average student-to-teacher ratio for sampled institutions was 19.73 (SD = 5.82). Additionally, the average proportion of low-income students is 53.76%, and the average proportion of minority students is 49.65%. Lastly, the average proportion of internet access is 74.69%, whereas the average dropout rate is 7.77%.

As seen from above, there are significant standard deviations for multiple variables, which indicates differences in terms of funding, accessibility of education, and social composition among different institutions.

Table 1: Descriptive Statistics of Study Variables

Variable	Mean	SD	Minimum	Maximum
Funding per Student (USD)	15154.16	5931.38	5012.97	24981.90
Average Test Score (%)	70.00	17.70	40.00	100.00
Student-Teacher Ratio	19.73	5.82	10.00	30.00
Percentage of Low-Income Students	53.76	24.02	10.20	94.90
Percentage of Minority Students	49.65	25.24	5.00	94.90
Internet Access (%)	74.69	14.43	50.00	100.00
Dropout Rate (%)	7.77	4.21	0.50	14.99

3.2 Correlation Analysis

A Pearson correlation test was performed on the variables used to measure the institutional and educational inequalities in order to determine the relationship between these variables (figure 1). According to Table 2 below, the coefficients of

correlation of the independent variables were relatively low with none being higher than the acceptable coefficient of ± 0.80 , which suggests no major problem of multicollinearity in the data set.

From the results above, it is clear that there was a

low negative relationship between the level of funding and dropout rates ($r = -.040$), which shows that those institutions that have higher funding tend to record low levels of dropouts. The average test scores had a low negative

relationship with the rate of dropout ($r = -.019$). There was a low positive relationship between the student-teacher ratio and the rate of dropout ($r = .014$).

Table 2: Correlation Matrix of Study Variables

Variables	1	2	3	4	5	6	7
1. Funding per Student	1.000						
2. Average Test Score	0.020	1.000					
3. Student–Teacher Ratio	-0.030	0.040	1.000				
4. Low-Income Percentage	0.012	-0.003	-0.072	1.000			
5. Minority Percentage	-0.012	-0.013	-0.017	-0.024	1.000		
6. Internet Access	0.016	-0.002	0.033	0.006	-0.000	1.000	
7. Dropout Rate	-0.040	-0.019	0.014	0.002	-0.002	0.015	1.000

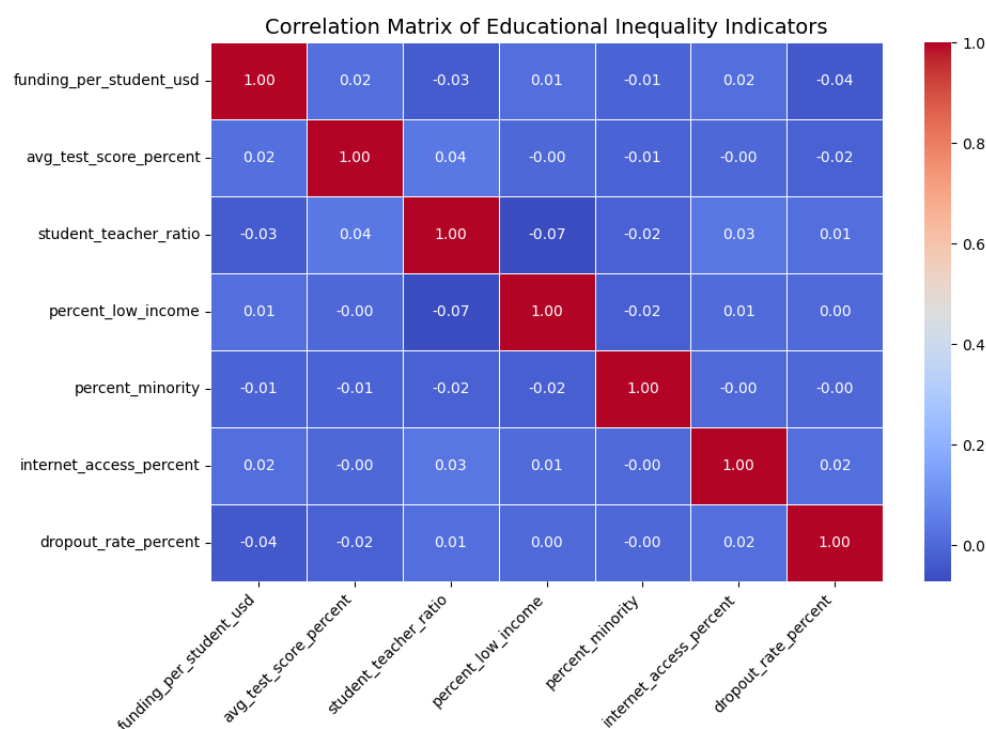


Figure 1. Correlation Matrix

Figure 1 illustrates the correlation relationships among the educational inequality indicators included in the study. The findings demonstrate generally weak correlations among funding allocation, student–teacher ratio, internet accessibility, socioeconomic indicators, and

dropout rates, indicating low multicollinearity and the multidimensional nature of inclusive educational effectiveness.

3.3 Multicollinearity Diagnostics

Analysis of Variance Inflation Factor (VIF) was

conducted in order to examine any possible multicollinearity issues in relation to predictor variables used in the regression equation. As shown in Table 3, all VIFs were found within the range of 1.001 – 1.008, which is far below the optimal VIF value of 5.0. These results imply no

multicollinearity and provide grounds for the suitability of the independent variables in regression analysis.

The obtained VIFs indicate that all independent variables used in regression analysis make their unique contribution to the model.

Table 3: Variance Inflation Factor (VIF) Analysis

Variable	VIF
Funding per Student	1.001
Student–Teacher Ratio	1.008
Percentage of Low-Income Students	1.006
Percentage of Minority Students	1.001
Internet Access (%)	1.001

3.4 Multiple Regression Analysis

Multiple regression analysis was performed to explore the effects of institutional resource allocations and the level of educational inequality on the likelihood of students dropping out of educational institutions characterized by inclusivity. The independent variables used were funding per student, student-teacher ratio, percent of poor learners, percent of minorities, and internet availability, while dropout rate percent was the dependent variable.

As depicted in Table 4, the multiple regression analysis model revealed a value of .002 for R^2 and $-.003$ for adjusted R^2 , implying that the predictor variables could explain only about 0.2% of

variance in the dependent variable. In addition, the multiple regression model did not prove to be statistically significant with $F(5, 994)$ being equal to 0.398 and p value being .850. This implies that the institutional factors used in the study were unable to predict the results.

It is evident from the regression coefficients that institutional funding was negatively correlated with dropouts ($\beta = -0.168$, $p = .209$). It means that the chances of dropping out will reduce where there is more funding allocated to the institution. The other predictors include student-teacher ratio that was weakly positively related with dropouts ($\beta = 0.051$, $p = .704$) and internet availability which was slightly positively associated ($\beta = 0.064$, $p = .631$).

Table 4: Multiple Regression Analysis

Predictor Variable	Beta (β)	Std. Error	t-value	p-value
Constant	7.7656	0.1335	58.1807	0.000
Funding per Student	-0.1680	0.1336	-1.2577	0.209
Student–Teacher Ratio	0.0510	0.1340	0.3806	0.704
Percentage of Low-Income Students	0.0134	0.1339	0.1000	0.920
Percentage of Minority Students	-0.0101	0.1335	-0.0756	0.940
Internet Access (%)	0.0642	0.1336	0.4806	0.631

Table 5: Regression Model Summary

Statistic	Value
R ²	0.002
Adjusted R ²	-0.003
F-statistic	0.398
Significance (p-value)	0.850
Observations	1000

3.5 Findings

These results demonstrate that there are significant differences between the schools in terms of funding, socioeconomics, and internet access. Nonetheless, the institutional factors incorporated in the regression model were not found to be significant predictors of dropouts. While the correlations were not very strong, this analysis emphasizes the complex nature of effective inclusive education and educational inequality.

In light of these findings, one can infer that effective inclusive education management goes beyond mere resource allocation and is likely dependent on other institutional, administrative, sociocultural, and governance considerations. This implies that educational management needs to be holistic in approach in order to address all aspects at once.

4. Discussion

The current research explored the impact of strategic management in education and institutional inequalities on the effectiveness of Inclusive education in educational institutions. It was found that there were significant inequalities between the sample institutions regarding the levels of financial allocations for the educational process, the socio-economic characteristics of the population enrolled in the institutions, the availability of the Internet, and the student-to-teacher ratio. It means that the sample educational institutions still function in unequal structural and organizational conditions that might affect institutional inclusion and equality in education. Thus, the descriptive statistics confirm the literature evidence that educational inequality

is a crucial problem for inclusive education systems around the world (Ebersold et al., 2019).

Even though the research highlighted that the institutions differed from each other in terms of available resources and their accessibility, it was discovered that the chosen institutional factors did not have a meaningful predictive value for dropout rates. Therefore, the regression model had poor explanatory power, implying that factors like funding per student, availability of the Internet, socio-economic characteristics, and student-to-teacher ratios could not explain variations in dropout results. Consequently, the findings imply that the effectiveness of inclusive education is determined by multi-dimensional factors related to institutional, socio-cultural, and governance aspects rather than structural indicators alone. The result is consistent with Makadok et al. (2018) who maintained that organizational interactions and contexts might influence strategic management outcomes.

The results also indicate that financial investment alone cannot ensure the success of inclusive education. Even though funding per student was negatively associated with dropout rates, the effect was insignificant. Thus, the finding confirms the argument of Zerquera and Ziskin (2020) that funding processes for education often fail to attain their equity-based goals due to the lack of supportive institutional governance structures and implementation processes. In addition, Ebersold et al. (2019) emphasize that financing education inclusively implies more than proper resource distribution; it also demands effective institutional policies and comprehensive implementation mechanisms.

Another significant finding is related to the role of infrastructure and technological accessibility in inclusive educational settings. The internet availability was only weakly correlated with dropout outcomes, indicating that even access to technological tools might be insufficient to enhance inclusive education or institutionalization. Such results can be attributed to the general skepticism about the efficiency of integrating technologies into educational administration in an unequal institutional environment. According to Asaju (2023), infrastructural development is a key prerequisite to an efficient management and sustainability of educational institutions. Likewise, according to Gadde (2022), effective governance frameworks and adaptive resource allocations are needed for successful integration and efficient use of new technologies in order to promote desired educational outcomes.

Thus, the lack of correlations observed in the data shows the necessity to focus on institutional development and governance strategies in managing inclusive educational institutions. Past research has emphasized the need to develop good governance and organizational capacity in order to ensure inclusive educational success (Edwards Jr et al., 2018; Zapp, 2021). In this particular case, the lack of correlations indicates that inclusive educational performance depends not only on structural factors but rather on the quality of institutional development, leadership, collaboration between stakeholders, and preparation of teachers and other personnel. As stated by Pavan et al. (2023), institutional governance is crucial to organizational performance and efficient implementation of policy interventions.

Finally, the results obtained confirm the rising significance of inclusive leadership in educational institutions. An inclusive educational environment requires leaders who could facilitate and support participation and shared governance in order to foster equity among students and other organizational members. Rachmad (2023) notes that inclusive leadership enhances collaboration within institutions and promotes their

responsiveness to diversity-related challenges. Likewise, Ivanyna and Salerno (2021) indicate that governance systems aimed at facilitating inclusive growth rely on transparency, coordination, and equal policy implementation. Thus, inclusive management should not focus solely on resource allocation but on institutional leadership.

Moreover, institutional readiness is another determinant of implementation of inclusion in education identified by this research. While this paper utilized secondary quantitative data as a source of empirical information, the differences in educational resources and institutional conditions are indicative of different levels of institutional readiness for implementing inclusion (Honkasilta et al., 2019). Research shows that teacher preparedness, professional competence, and inclusive organizational cultures have a significant impact on educational effectiveness in practice (Myronova et al., 2021). Educational organizations which fail to employ prepared teachers, promote inclusive organizational culture, and have supportive organizational structures will likely find it challenging to implement an inclusive approach effectively despite their progress in terms of funding and infrastructure.

This paper makes an important contribution to the field of strategic educational management and institutional governance in education by emphasizing how multi-faceted both educational inequality and institutional inclusion are. In other words, according to the findings obtained during the research process, inclusion in education cannot be explained exclusively using such structural indicators as the availability of financial resources and technology. In order to be successful, institutional inclusion requires governance systems, effective leadership strategies, organizational adaptability, and a system for implementation of policies addressing both institution and learners.

Therefore, one of the key messages of the research for educational policymakers and institutional managers is the importance of approaching inclusive education management holistically. This means that strategic educational management should include not only equitable

resource distribution but also capacity building, inclusive governance mechanisms, infrastructural development, and leadership development programs. Such holistic strategy can contribute to improving inclusion and eliminating educational inequality effectively.

5. Conclusion

The research aimed to explore the association between strategic educational management, institutional inequality measures, and inclusiveness as aspects that define educational effectiveness. Inclusive educational effectiveness and institutional inequality measures were measured through secondary data quantitative analysis. As evidenced by the data analysis, considerable inequalities exist among education institutions concerning funding, internet access, socioeconomic diversity, and institution-related resources. The data suggest that despite efforts to eliminate inequalities in education, there still exists a problem of educational inequalities among current educational institutions. According to the results of the regression analysis, there is a

weak correlation between selected institutional measures and dropout rates. However, the study proved that educational outcomes cannot be explained solely by structural measures of institutions. Indeed, while measures like funding, availability of technology, student-to-staff ratio, and others are important predictors of educational effectiveness, other factors related to institution management and governance should be taken into account. Thus, the findings add to the body of literature devoted to strategic educational management and highlight the significance of the integration of educational management structures for developing institutions that are inclusive and effective in educating students from various backgrounds. In summary, educational institutions should apply a variety of strategies including but not limited to resource allocation, institutional readiness initiatives, leadership development, digital technology availability, and others to foster a successful education system that supports diversity and equity.

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