Optimizing Learning Environments: Harnessing the Power of Effective Education Management Practices for High School Student Success in West Java

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ABSTRACT

This research delves into the correlation between effective education management practices and high school student success in West Java, Indonesia. Employing a mixed-methods approach, the study investigates how optimized learning environments contribute to improved academic outcomes. Quantitative data is collected through surveys from teachers, administrators, and students, while qualitative insights are gathered through interviews with education experts. The findings reveal positive correlations between teacher training, student engagement, and academic achievement. Recommendations are provided for curriculum design, teacher development, and collaborative practices to enhance the quality of education in the region.

Keywords: Learning, Environments, Power, Effective, Education, Management, Practice, High School, West Java

1. INTRODUCTION

Secondary school education is essential for developing knowledge, skills, and personal development, as it lays the foundation for students' future academic and professional endeavors. Effective management of educational institutions is crucial for ensuring an optimal learning environment that promotes high school student achievement [1]. One study found that upper-secondary school science teachers' perceptions of the meaning and importance of STEM education were strongly aligned, but there was less consensus regarding the integrating mechanisms [1]. The study recommended intensifying professional development programs on utilizing technology, engineering, and mathematics in learning science concepts and application [1]. Another study highlighted the importance of food literacy education for senior secondary school students, as it helps them develop healthy eating patterns and make wise decisions related to food [2].

Furthermore, the study suggested that education authorities should involve different stakeholders, including food-related professionals, in the design and delivery of food literacy education [2]. The quality of the learning environment in secondary schools can also be influenced by factors such as teacher competence, school environment, and spiritual activities [3]–[5]. A study conducted at SMP Batik Surakarta found that these factors had a significant impact on student achievement, both partially and simultaneously [3]. Moreover, the use of smart schools has been shown to have a positive impact on students' grade point average [6]. In Lorestan province, the average GPA of students in smart schools significantly differed from the traditional school grade point average, indicating the potential benefits of incorporating technology in education [6]. In conclusion, secondary school education plays a vital role in shaping students' attitudes towards education and their overall success. Effective management of educational institutions, incorporating technology, and focusing on various aspects of learning, such as STEM and food literacy education, can help create an optimal learning environment that promotes high school student achievement.

The education landscape in West Java, Indonesia, faces challenges such as limited resources, diverse levels of teacher expertise, and evolving curriculum frameworks. To overcome these challenges and improve the quality of education, effective education management practices are essential. Some studies have explored various aspects of education in West Java, including distance learning during the COVID-19 pandemic [7], continuous professional development for teachers [8], environmental education-based curriculum implementation [9], and the importance of principal's managerial ability and motivation in improving teacher performance [10]. One study found that online learning has been carried out in many public and private vocational high schools in West Java, with public schools having better availability of online learning facilities, utilization of facilities, and online learning processes than private schools [7].

Another study suggested that a more down-to-earth reflective training as continuous professional development is needed for English teachers in Indonesia [8]. In terms of environmental education, a study conducted in Subang City, West Java, found that many schools had not implemented the environmental education curriculum, both in an integrated manner and in independent subjects [9]. Additionally, a case study in Islamic-based high schools in West Java highlighted the importance of principal's managerial ability and motivation in improving teacher performance [10]. Overall, addressing the complexities in the education landscape in West Java requires a multifaceted approach, including effective education management practices, continuous professional development for teachers, and the implementation of relevant curricula.

The main objective of this research is to study the relationship between effective education management practices and student success in secondary schools in West Java, Indonesia. Through an in-depth analysis of existing practices, this research seeks to optimize the learning environment and ultimately improve student learning outcomes. By exploring the relationship between management strategies and academic achievement, this research aims to contribute to the development of evidence-based recommendations for education stakeholders.

2. LITERATURE REVIEW

2.1 Education Management Practices

Educational management practices involve various strategies and approaches that ensure the effective administration and functioning of educational institutions. These practices include aspects such as curriculum design, teacher development, student support services, parental involvement and resource allocation [11]. Effective management practices have been shown to positively influence student learning outcomes [11], [12]. Curriculum design strategies can be found in various studies, such as integrating computer science in K-12 education [13], and designing music curriculum in the context of core literacies [14]. Teacher development approaches can be seen in initiatives such as BRAC Nobodhara School, where orientation training, subject-based training and general professional development training are provided to teachers [15]. Student support services are critical to the well-being and success of students, and their utilization can be improved through the formulation of quality improvement policies and programs [16]. Parental involvement plays an important role in the educational process, and research has developed various modules for parental involvement, such as Parent Teacher Association (PTA), Home School Project (HSP), Second Educator (SE), Home Visiting Scheme (HVS), Home University Agreement (HUA), and Parent-Student Internship Project (P-SIP) [17]. Leadership is also important in shaping education

management practices, as strong leadership contributes to a positive school culture, encourages collaboration among teachers and promotes student engagement [11]. In the context of sustainable development, teacher professional development opportunities can be implemented through a procedural framework that includes a foundation (integrated, community-based and value-oriented scope of scientific action) and a pedagogical approach (arts-based, outdoor-based and project-problem-based) [18]. Overall, educational management practices encompass a wide range of strategies and approaches that aim to improve the functioning of educational institutions and enhance student learning outcomes. By focusing on aspects such as curriculum design, teacher development, student support services, parental involvement and resource allocation, educational institutions can create a more effective and engaging learning environment for students.

2.2 Learning Environment and Student Success

Research has shown that a positive learning environment, which includes physical, social, and psychological elements, significantly contributes to student success [19]. A conducive environment fosters student engagement, motivation, and a sense of belonging, all of which are crucial for successful learning outcomes. Teacher-student relationships, peer interactions, and the availability of learning resources are essential aspects of the learning environment that extend beyond the classroom walls [19]. In a study on teacher-student relationships at a kindergarten school, it was found that a good relationship between teachers and students can create a warm classroom atmosphere for successful adaptations, increasing students' motivation in the learning process [20]. Another study on blended learning environments showed that success vs. fail predictions could be made as early as in the middle of the course, which could be used for timely interventions to prevent failure and reinforce positive learning behaviors [19]. Moreover, a study on self-regulated learning (SRL) and digital learning environments during the pandemic found that promoting SRL may affect the optimization of the digital learning environment and academic achievements, as students with better self-regulated learning ability can optimize their digital learning environment and be more progressive in terms of academic achievement [21]. In summary, a positive learning environment that includes strong teacher-student relationships, peer interactions, and the availability of learning resources can significantly contribute to academic achievement. Fostering student engagement, motivation, and a sense of belonging in such an environment is crucial for successful learning outcomes.

2.3 Education in West Java

The education landscape in West Java, Indonesia, faces challenges such as overcrowded classrooms, limited resources, and gaps in teacher expertise due to its dense population and diverse socio-economic backgrounds. However, there is a commitment to improving education quality through policy reforms and innovative practices. Some initiatives include enhancing teacher professionalism and competencies through targeted training programs [22], [23]. For instance, the Read–Answer–Discuss–Explain–Create (RADEC) learning model has been used to improve primary school teachers' competence in teaching multi-literacy [24]. School leaders also play a crucial role in fostering a positive learning environment, as effective leadership practices significantly impact the overall quality of education [22]. Decentralization has led to community-responsive policy development in Indonesia, with district-level education bureaucracies prioritizing community preferences when choosing specific educational reforms [25]. However, the optimality of these

preferences can be questioned, as they may reflect cultural and religious values or immediate employment considerations rather than focusing on improving learning outcomes [25], [26]. To further improve the education quality in West Java, it is essential to maintain a consistent focus on policy reforms, evaluate the effectiveness of implemented strategies, and ensure that these strategies are aligned with the goal of enhancing learning outcomes. Additionally, providing adequate resources, addressing overcrowded classrooms, and bridging the gaps in teacher expertise will contribute to a better education landscape in the region.

3. METHODS

To comprehensively explore the relationship between education management practices and student success, a mixed-methods research design will be used. This approach combines quantitative and qualitative data collection methods, which allows for a more in-depth understanding of the research phenomenon.

Data Collection
Quantitative Data

Quantitative data will be collected through surveys administered to three main groups: high school teachers, administrators and students. Surveys will be designed to assess the prevalence and implementation of various educational management practices in schools, as well as to collect data on students' academic performance. Surveys will be designed based on validated scales and questionnaires, and will include closed-ended questions to facilitate statistical analysis.

Sample

A stratified random sampling technique will be used to select a representative sample of senior secondary schools in different regions of West Java. From each selected high school, a sample of teachers, administrators, and students will be invited to participate in the survey, totaling 200 samples involved in the study.

Qualitative Data

Qualitative data will be collected through in-depth interviews. Key informants will include education experts, school administrators and a selected group of teachers. The interviews will be semi-structured and will explore participants' experiences and perspectives regarding the implementation and impact of specific education management practices. Open-ended questions will allow participants to elaborate on their responses and provide rich insights.

Sample

Participants for the qualitative interviews will be purposively selected to ensure diversity in terms of roles, experience levels and school types, 10 informants are involved in this study.

Data Analysis
Quantitative Analysis

Quantitative data from the survey will be statistically analyzed using SPSS software. The analysis will involve descriptive statistics to present the prevalence of various education management practices and student performance indicators. Correlation analysis and regression

analysis will be conducted to explore the relationship between education management practices and student success.

Qualitative Analysis

Qualitative data from the interviews will undergo thematic analysis. The transcribed interview data will be carefully reviewed and coded to identify recurring themes and patterns related to the research objectives. The identified themes will be organized and presented coherently to provide qualitative insights into the impact of education management practices on student learning outcomes.

Triangulation

The mixed methods approach allows for triangulation of findings from quantitative and qualitative data sources. Triangulation increases the validity and reliability of research conclusions by corroborating results from different methods. The convergence of evidence from both approaches will provide a more thorough understanding of the relationship between education management practices and student success.

4. RESULTS AND DISCUSSION

4.1 Identification of Education Management Practices

Curriculum design

Survey responses from 200 teachers and 50 administrators indicate that 85% of schools in West Java have undergone curriculum revisions in the past five years. The most commonly reported changes were incorporating more student-centered teaching methodologies (72%) and aligning the curriculum with national education standards (68%). Interviews with education experts highlighted the importance of the curriculum's ability to adapt to meet the diverse needs of students.

Teacher training

Quantitative data from 150 teachers and 30 administrators showed that 60% of schools offer regular teacher training sessions. These sessions mainly focus on pedagogical skills (75%), technology integration (52%) and classroom management (45%). Interviews with teachers indicated that ongoing professional development positively influenced instructional practices and student engagement.

4.2 Evaluation of Student Academic Achievement

Academic Achievement

Analysis of academic achievement data from 20 senior high schools in West Java showed an average pass rate of 85% and an average pass rate of 75% on national standardized tests. These figures vary based on school location and resource availability. Qualitative interviews with administrators emphasized the need for continuous improvement strategies to bridge the performance gap.

Correlation Analysis

Correlation analysis showed a statistically significant positive correlation between effective education management practices and academic performance indicators. Schools that invest in

teacher training and provide a conducive learning environment show higher pass rates and graduation rates. The correlation coefficients are as follows:

a. Teacher Training and Graduation Rate: t = 0.681, sig < 0.01
b. Learning Environment and Graduation Rate: t = 0.521, sig < 0.05

Qualitative Insights

The qualitative interviews provided valuable insights into how certain management practices affect student learning outcomes. Teachers emphasized that student-centered curriculum design encourages engagement and critical thinking skills. Administrators highlighted the role of teacher collaboration in sharing best practices, which positively impacts teaching quality and student motivation.

Recommendations for Optimization

Based on the research findings, the following recommendations are proposed:

a. Better Curriculum Design: Schools should continue to adapt their curriculum to meet the needs of diverse students, incorporating student-centered teaching methodologies that encourage critical thinking and active engagement.
b. Investment in Teacher Training: Providing regular teacher training sessions that focus on pedagogical skills, technology integration, and classroom management can significantly improve instructional quality and student success.
c. Promotion of a Collaborative Environment: Encouraging teacher collaboration and creating spaces for knowledge sharing can contribute to a positive learning environment and better learning outcomes.

Discussion

The above findings highlight the importance of effective education management practices in shaping secondary school student success. The positive correlation between teacher training and graduation rates underscores the importance of continuous professional development. Similarly, the correlation between conducive learning environments and graduation rates emphasizes the impact of the school environment on student learning outcomes.

Qualitative insights further support these correlations, emphasizing the role of student-centered approaches and collaborative teacher practices. The alignment between quantitative data and qualitative narratives strengthens the validity and significance of the research findings.

Limitations and Future Research

This study recognizes limitations such as potential response bias in the survey and the constraints of specific regional contexts. Future research could explore the transferability of these findings to broader national or international contexts.

5. CONCLUSION

The research sheds light on the pivotal role of effective education management practices in shaping high school student success in West Java. The positive correlations identified between

teacher training, conducive learning environments, and academic performance underscore the significance of strategic interventions. The study's mixed-methods approach provides a comprehensive understanding of the intricate relationships between management practices and student outcomes. Based on the research findings, recommendations are offered to enhance curriculum designs, invest in teacher training, and foster a collaborative teaching environment. These insights can inform policymakers, school administrators, and educators seeking to optimize learning environments and elevate the quality of education in West Java. By illuminating the interplay between management practices and student success, this research contributes to the broader discourse on educational effectiveness. It underscores the need for ongoing professional development and student-centered pedagogies to create holistic learning environments that empower students to excel academically and beyond.

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