

Managerial Strategy for the Utilization of *Open Educational Resources* (OER) in Inclusive Learning at SMPLB Negeri Sorong City

Putri Aulia Thamrin^{a,1,*}, Fatmasari^{a,2}, Hartinah^{a,3}

^aInstitut Agama Islam Negeri Sorong, Jl. Sorong-Aimas, Sorong, 98417, Indonesia

¹putritmrn19@gmail.com*, ²fatmasari@iainsorong.ac.id, ³hartinah@iainsorong.ac.id,

*Correspondent

INFORMASI ARTIKEL	ABSTRAK
<p>Article History: Received: 22 January 2026 Revised: 23 January 2026 Accepted: 27 January 2026 Published: 31 January 2026</p> <p>Kata Kunci: Manajemen Pendidikan; <i>Open Educational Resource</i> (OER); Inklusif; Pendidikan Khusus</p>	<p>Keterbatasan sumber daya dan sarana pembelajaran masih menjadi tantangan utama dalam penyelenggaraan pendidikan inklusif, khususnya di sekolah luar biasa yang berada di wilayah dengan keterbatasan dukungan kelembagaan. Dalam konteks tersebut, <i>Open Educational Resources</i> (OER) menawarkan alternatif sumber belajar yang terbuka, fleksibel, dan adaptif terhadap kebutuhan peserta didik berkebutuhan khusus. Penelitian ini bertujuan untuk mendeskripsikan praktik pemanfaatan OER serta menganalisis strategi manajerial yang mendukung integrasinya dalam pembelajaran inklusif di Sekolah Menengah Pertama Luar Biasa (SMPLB) Negeri Kota Sorong. Penelitian menggunakan pendekatan kualitatif deskriptif dengan teknik pengumpulan data melalui wawancara mendalam, observasi, dan studi dokumentasi terhadap kepala sekolah dan guru. Analisis data dilakukan secara interaktif melalui tahap reduksi data, penyajian data, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa pemanfaatan OER di SMPLB Negeri Kota Sorong masih terbatas dan bersifat individual, dengan hanya sebagian guru yang menggunakan sumber belajar terbuka dalam pembelajaran. Meskipun demikian, penerapan OER terbukti mampu meningkatkan motivasi belajar, partisipasi aktif, serta kemandirian siswa, terutama melalui penggunaan media visual dan video pembelajaran yang dapat diakses serta diulang secara mandiri. Dari sisi manajerial, penelitian menemukan bahwa integrasi OER belum didukung oleh kebijakan sekolah yang sistematis dan masih bergantung pada inisiatif personal guru, sehingga belum terkelola secara berkelanjutan. Penelitian ini memberikan kontribusi konseptual dengan menawarkan kerangka integrasi OER sebagai bagian dari strategi manajemen pendidikan inklusif yang mencakup perencanaan, pengorganisasian, pelaksanaan, dan pengawasan pembelajaran, khususnya pada konteks sekolah luar biasa di wilayah dengan keterbatasan sumber daya.</p>
<p>Keywords: Education Management; <i>Open Educational Resource</i> (OER); Inclusion; Special Education.</p>	<p>ABSTRACT Limited resources and learning facilities remain a major challenge in the implementation of inclusive education, especially in special schools located in areas with limited institutional support. In this context, Open Educational Resources (OER) offer an alternative learning resource that is open, flexible, and adaptable to the needs of students with special needs. This study aims to describe the practice of utilizing OER and analyze the managerial strategies that support its integration into inclusive learning at the State Special Junior High School (SMPLB) in Sorong City. The study uses a descriptive qualitative approach with data collection techniques through in-depth interviews, observations, and documentation studies of the principal and teachers. Data analysis was conducted interactively through the stages of data reduction, data presentation, and conclusion drawing. The results showed that the use of OER at SMPLB Negeri Kota Sorong was still limited and individual in nature, with only some teachers using open learning resources in their teaching. Nevertheless, the application of OER has been proven to increase student motivation, active participation, and independence, especially through the use of visual media and learning videos that can be accessed and repeated independently. From a managerial perspective, the study found that the integration of OER is not yet supported by systematic school policies and still depends on the personal initiative of teachers, so it is not yet managed sustainably. This study provides a conceptual contribution by offering an OER integration framework as part</p>

of an inclusive education management strategy that includes planning, organizing, implementing, and supervising learning, particularly in the context of special schools in resource-limited areas.

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1. Introduction

A strategic issue that is also receiving more attention today is the management of inclusive education, especially within the framework of fulfilling the right to education for all children, including children with special needs. In line with the guidelines issued by the Ministry of Education and Culture, "it is not only the curriculum and infrastructure that are demanded by the inclusive education system, but also the effectiveness of the management of educational units in creating an equal, participatory, and adaptive learning environment" (Arriani et al., 2021). The use of *Open Educational Resources (OER)* is one potential approach in supporting the success of inclusive education (Nugrahayu, 2025). OER offers open and flexible learning resources. This learning resource can also be adjusted to meet students' needs, including those with special needs. However, the use of OER in special schools in Indonesia remains limited, despite internal school policies (Wahid & Khouilita, 2023).

The implementation of inclusive education in Indonesia still faces various structural and cultural obstacles, although progress has been seen in terms of quantity. Based on data from the Coordinating Ministry for Human Development and Culture, the number of regular schools providing inclusive education in Indonesia increased from 35,802 schools (2021) to 40,928 schools (2022), and reached 44,477 schools in September 2023 (Maulana Surya, 2023). However, this increase in number is not offset by the availability of adequate teaching staff. Data from the Ministry of Education and Culture as of December 2023 reveals a worrying fact: of the 40,164 schools with students with special needs, only 5,956 schools (14.83%) have special supervisors (Habibah, 2024). This gap indicates a misalignment between the inclusive policies launched and the on-the-ground implementation, underscoring that Indonesia still needs to work hard to realize a high-quality inclusive education system. The disparity between the expansion of access and the limitation of resources directly affects the quality of inclusive learning services, as schools struggle to provide adaptive, individualized, and sustainable learning that meets the needs of students with special needs.

The situation at the Sorong City State Extraordinary Junior High School (SMPLB) reflects limited educational resources. This school has four teachers who also perform administrative duties, three of whom have a background in Special Education (PLB). The four teachers serve 43 students spread across 13 study groups with four different disability categories. This condition illustrates the high ratio of teachers to students and the complexity of learning needs that must be handled in the educational unit.

The limited number of educators amid the diversity of student needs has implications for challenges in learning management and school management. This situation shows a gap between the ideal demands of inclusive education management and schools' actual capacity to manage learning services optimally. Therefore, more targeted support is needed through affirmative policies and strengthening resource allocation from local governments so that the capacity of extraordinary schools can be increased sustainably. This condition also indicates that the implementation of inclusive education management based on open technology in practice in the field has not been optimal.

The role of local governments in supporting inclusive education is an important factor in addressing the limitations of education services in extraordinary schools. So far, the allocation of the education budget in West Papua has tended to be more oriented towards regular schools, while exceptional schools still face limited resources and institutional support. This condition has implications for the lack of effective management and inclusive learning services in special education units, even though they are located in urban areas. Along with changes in education management authority at the provincial level, a more targeted approach is needed to strengthen the capacity of exceptional schools, particularly through human resource development and sustainable policy support.

In the context of learning, these limitations have an impact on teachers' ability to design teaching materials that are adaptive to the diversity of needs of students with special needs. The lack of training, high workload, and limited digital resources encourage the need for alternative approaches that can support inclusive learning more flexibly. Therefore, the use of Open Educational Resources (OER) is relevant to study as a strategy that can strengthen learning management, expand the variety of teaching methods, and improve the efficiency of teachers' work in the context of inclusive education.

The main principle in inclusive education management is to provide equal and accessible education for all students, including those with special needs. This includes resource management, adaptive curriculum development, and the creation of a learning environment that supports diversity (Saptadi et al., 2023). However, the reality on the ground is often the opposite of theory. Reality on the ground shows that at SMPLB Negeri Sorong City, the number of teachers who also have to handle administrative tasks is very limited, while the number of students exceeds the ideal capacity. This situation illustrates how theories about the importance of adequate resources and adaptive learning environments do not always materialize in everyday practice. This gap highlights the need for a more effective, context-based management approach, such as the use of *Open Educational Resources* (OER). OER can provide flexible learning materials adapted to students' needs and help teachers develop relevant teaching materials, thereby overcoming resource limitations in schools facing similar challenges (Unesa, 2025).

Although many studies have examined OER in education, very few specifically address how OER is integrated in the management of education in special schools (SLBs). Reports (ERStrategies, 2023) describe a model of organizing resources to support inclusion, but do not discuss the integration of OER in a specific school management framework. Similarly, a research report by (Gottschalk & Weise, 2023) on digital equity and inclusion highlights technological barriers in inclusive education, but ignores OER-based management frameworks, (Ravet & Mtika, 2024) examined inclusion practices in rural schools in Cambodia, but did not explore systemic management of open content. Other research conducted by (Charles, Otindo, & Hadijah, 2024) focuses on physical and pedagogical accessibility in schools in Uganda, without incorporating OER strategies in special education management.

Although various studies have examined *Open Educational Resources* (OER) in the context of inclusive education, those that specifically place OER within education management strategies in special schools (SLBs) remain very limited. A number of studies have placed greater emphasis on accessibility, digital equity, and inclusion practices in general, without examining how OER are systematically managed and integrated within specific school management functions. Based on this gap, this study aims to analyse the integration of OER in inclusive education management at SMPLB Negeri Sorong City. The novelty of this research lies in the meaning of OER not only as a learning resource, but as a strategic instrument in planning, organising, implementing, and supervising inclusive learning in the context of exceptional schools with limited resources. Therefore, this study aims to describe the practice of utilising OER and analyse managerial strategies that support its integration in inclusive learning in Extraordinary Junior High School (SMPLB) of Sorong City.

2. Methods

The data analysis in this study was conducted qualitatively using a descriptive approach, following the qualitative research analysis procedure (Creswell, 2013). This research uses a qualitative

approach with a case study design to understand in depth the managerial practices and dynamics of the use of Open Educational Resources (OER) in supporting inclusive learning at SMPLB Negeri Sorong City. The qualitative approach was chosen because the problems studied are contextual, complex, and cannot be explained quantitatively, especially related to the experience, meaning, and strategies developed by the school in managing inclusive education in the midst of limited resources. The design of the case study allows researchers to explore the phenomenon in its entirety within clear location and time constraints, resulting in a deep and contextual understanding (Creswell, 2013).

The research was conducted at the State Extraordinary Junior High School (SMPLB) in Sorong City, Southwest Papua, a location that represents the challenges of managing inclusive education in resource-constrained areas. The research subjects consisted of school principals and teachers with a total of five informants, who were selected *purposively* (Sugiyono, 2021) based on criteria, directly involved in the management and implementation of learning, have experience teaching students with special needs, and understand or are involved in the use of digital learning resources or OER

Data were obtained through in-depth interviews, participatory observations, and documentation studies, and were then transcribed and analysed repeatedly to gain a comprehensive understanding of the practice of using *Open Educational Resources* (OER) in inclusive education management. The data analysis process follows an interactive analysis model (Miles, Huberman, & Saldana, 2014), which includes data reduction, data presentation, and drawing conclusions. At the data reduction stage, information relevant to the research focus is selected and categorised into main themes, including educational managerial practices, constraints on the use of OER, and OER integration strategies in inclusive learning. The reduced data is then presented as a thematic narrative to identify patterns, relationships between categories, and trends in the field data. To maintain the validity of the data, this study applies triangulation of sources and techniques and confirms the findings with informants (*member checks*) to ensure compatibility between the data, the researchers' interpretation, and reality in the field (Lincoln & Guba, 1985). Conclusion drawing and verification are carried out by linking empirical findings to the theoretical framework of educational management, the concept of *Open Educational Resources* (OER), and the principles of inclusive learning.

3. Results and Discussion

The results and discussion section in this study will comprehensively describe the implementation of *Open Educational Resources* (OER) in the context of inclusive education management in the Extraordinary Junior High School (SMPLB) of Sorong City. The main focus is directed at the analysis of the implementation of OER as an innovative strategy in supporting the learning process for students with special needs in the midst of limited human resources and educational infrastructure. Through this approach, it is hoped that open learning resources can expand access, enhance learning adaptability, and strengthen educational practices oriented towards equality and inclusivity.

In addition, the discussion highlighted the managerial and pedagogical dimensions that arise from OER integration in an extraordinary school environment. This study will explore the dynamics of implementation, focusing on the roles of teachers, principals, and institutional support in optimising the use of open learning resources. Thus, this section is expected to provide an in-depth understanding of how OER not only functions as a learning tool but also as a strategic component in strengthening an inclusive education management system that is sustainable in meeting students' needs.

Utilization of OER as an Innovative Strategy in Inclusive Learning

Open Educational Resources (OER) are open learning resources that can be accessed, reused, modified, and distributed freely for educational purposes (Iswanto, 2021). The concept of OER is evolving alongside the growing need for flexible, adaptive, and equitable access-oriented learning for all students (UNESCO, 2019). In the context of inclusive education, especially in special schools, OER is highly relevant because it allows materials, media, and learning approaches to be adjusted to the characteristics and needs of students with special needs. The openness and flexibility of OER

make it a potential alternative learning resource in answering the limitations of learning resources in special education institutions (Harliansyah, 2020).

Based on field findings, the use of *Open Educational Resources* (OER) at SMPLB Negeri Sorong City is still in its early stages and is not yet widespread among teachers. Of the five informants, only one teacher consistently used OER in learning, especially in the deaf classroom. Based on the results of class observations and documentation of teaching tools, the teacher uses learning videos from *YouTube Edu*, which are equipped with captions (*closed captions*) and Canva-based visual modules that are modified according to the level of student understanding. This is confirmed by the statement of teacher Ratna as follows:

"I use videos from open sources so that children can see pictures and writing, they understand faster than just reading books" (Ratna, G- 2025).

In line with that, the other three teachers have never implemented OER due to limited training and facilities. Guru Leni (2025) said:

"We are not used to using digital media; we still use textbooks because we don't know how to use them" (Leni, G- 2025).

This statement shows that there is a gap between potential and practice in the field, which indicates that OER should be systematically optimized as an innovative strategy in inclusive learning in SLB. Theoretically, OER has great potential to support flexible, adaptive learning that meets the needs of students with special needs. The *5R* (*Retain, Reuse, Revise, Remix, Redistribute*) principle (Tlili et al., 2023) allows teachers to adapt learning resources to local contexts without licensing constraints. In the context of SLB Sorong, this principle is highly relevant because students' learning needs vary widely, from sensory to mild intellectual barriers. This approach is also in line with *the Universal Design for Learning (UDL) theory*, which emphasizes the importance of variation in the representation of the material and the way students demonstrate understanding (Florian & Black-Hawkins, 2011). Thus, even though only one teacher has used OER, this approach can be a strategic innovation that all SLB teachers should integrate.

The experience of teachers who have implemented OER shows that using open learning resources can create a more engaging and participatory learning environment (Ratna, 2025). Learning videos allow deaf students to focus on visuals and to review the material independently at home with parental assistance (Ratna, 2025). This practice reflects the principle of open and continuous learning, where access to materials is not limited to the classroom (Eromosele & Ph, 2025).

This experience demonstrates that OER supports the principles of *lifelong and accessible learning*. This is in line with the findings (Eromosele & Ph, 2025) that multimedia-based open learning resources can increase students' social and cognitive engagement, especially in educational contexts that require individual adaptation. Thus, the implementation of OER, even though it was carried out by a single teacher, has shown positive results and can serve as a model of good practice worth replicating. One teacher has implemented OER, but that alone is not enough to motivate other teachers to use it as a teaching method. This is in evidence of interviews with other teachers, who reported that most teachers faced technical obstacles and a lack of support in accessing OER. Desi (2025) reveals:

"We have not had any *training* from the school to learn to use OER. So we are still using the old way" (Desi, G-2025).

This condition shows that the lack of policy intervention and professional development is a major factor in the slow adoption of OER. (Maina, Santos-Hermosa, Mancini, & Guàrdia Ortiz, 2020). Parallel research also confirms that the adoption of educational technology requires institutional support and ongoing training so that innovation does not stop at the individual level (Han et al., 2019). Therefore, developing teachers in digital literacy competencies is a strategic step to ensure OER functions optimally in inclusive learning.

The study found that using OER has a positive impact on students' learning independence. Teacher Ratna mentioned that some students have taken the initiative to watch learning videos at home with their parents' help. These findings demonstrate the potential of OER in support of *self-directed learning*, as open-source learning helps learners build learning autonomy and improve digital skills. Therefore, if facilitated with the right policies and training, OER can be an important catalyst in strengthening independent learning for students with disabilities at SLB Sorong.

Thus, although OER implementation in SMPLB Negeri Sorong City remains very low, interview data indicate that this strategy can be optimised to improve the quality of inclusive learning. Teacher Ratna's experience provides empirical evidence that OER can increase student engagement and understanding, while teacher Leni's (2025) view highlights the urgent need for training and policy support. If these two aspects are integrated through visionary school management, OER has great potential to become a transformative strategy for realising equitable, innovative learning for all students with special needs.

Managerial Strategies in the Integration of OER in Special Education Institutions

The results of interviews with the principal of SMPLB Negeri Sorong City indicate that OER implementation remains individual and has not been integrated into school policies. The principal said the initiative to use open-source materials came from teachers who had a personal interest in digital media, not from school programs. He said,

"We don't have a special policy on OER yet, but if there are teachers who can develop digital media, we support it" (Aisyah, G- 2025).

This statement indicates that the role of school management in OER integration is still in the early stages, reactive to teacher initiatives rather than the result of strategic planning. It can run systematically when optimised through management functions such as planning, organising, implementing, and supervising. As described in OER, it can be a key instrument in supporting sustainable, inclusive learning.

In the planning phase, interview results with teacher Leni (2025) indicate that some teachers do not understand how to use OER systematically in learning. He said:

"We know there are open learning resources, but we don't know how to adapt to the needs of the children in our classroom" (Leni, G- 2025).

Only one teacher has tried to leverage OER in SMPLB learning, using educational videos and digital modules from *Canva* for deaf students. However, this effort is still independent and has not been integrated into school planning. This condition indicates a weak stage in identifying needs during OER implementation at the institutional level. This is in line with the findings of L(Granda-piñán, Tarín-moreno, & Ferrer-lores, 2025), which affirm that the success of digital learning transformation depends on *needs assessment* and collaborative planning between school leaders and teachers. Therefore, SLB Sorong needs to prepare a medium-term plan that includes the development of OER in the School Work Plan (RKS).

In the organising stage, the principal has actually formed the group and does not have a clear task structure. Guru Ratna (2025) said:

"We have been asked to share learning media, but there has been no specific direction or training on OER" (Ratna, G- 2025).

As a result, collaboration among teachers remains informal and not oriented towards open-source development. Foreducational organisations seeking to adapt to technological innovation, building an organisational system grounded in *a collaborative learning culture* with clear goals, responsibilities, and feedback is essential. Therefore, the formation of the OER development team at SLB Sorong needs to be complemented by a structured division of roles and routine supervision so that integration efforts do not stop at the individual level.

In implementation, teachers are given the flexibility to choose OER that suits the conditions of their class. For example, for deaf students, teachers use videos with open texts and symbolic images, while for students with intellectual barriers, simple visual teaching materials are used. Teachers also actively adapt materials to the local context of Southwest Papua, such as by adding examples from the surrounding culture or environment. This approach demonstrates the application of *contextualized open pedagogy*, in which open resources are adapted to students' social realities. These findings are in line with the *student-centered active learning* model presented (Bilgiç & Demir, 2025.), which emphasizes the importance of adapting technology to the social and cultural needs of educational users.

In terms of supervision, the principal conducts a routine evaluation of OER effectiveness through monthly reflection forums. Teachers are asked to report technical and pedagogical obstacles and to provide recommendations for improvement. This mechanism resembles the *Continuous Quality Improvement (CQI)* approach, as put forward by (Bendermacher, De Grave, Wolfhagen, Dolmans, & oude Egbrink, 2020), , which emphasizes the importance of reflective evaluation cycles in educational management. Through this approach, OER at SLB Sorong is not only a teaching tool but an integral part of the school's quality management system.

The aspect of human resource development emerged as the most urgent need. Guru Leni emphasizes that the training needed is practical and contextual. Guru Leni (2025) emphasizes that:

"We need training that is not only theory, but direct practice of making media from open sources for children with special needs" (Leni, G- 2025).

This statement emphasizes the urgent need for a digital competency improvement program for teachers. (Hartinah, et al, 2025) emphasized that the success of technology integration in education is highly determined by the ability of teachers to produce and manage digital content according to the characteristics of students (Hartinah, et al, 2025). Therefore, an effective managerial strategy in SLB Sorong must include regular training, inter-school collaboration, and policy support so that the use of OER does not stop at individuals, but rather becomes a planned and sustainable inclusive learning system. Therefore, the table below will explain how managerial strategies can be a reference for educational institutions:

Table 1. Managerial Strategies in the Integration of OER in Special Education Institutions

Management Functions	Applied Managerial Strategies	Forms of Implementation in Inclusive SLB
Planning	Develop a plan to integrate OER into the curriculum and school work plan (RKS) based on the needs of students with disabilities.	Principals and teachers conduct a <i>needs assessment</i> of the type of disability and learning media needed, then determine the relevant and adaptive OER.
Organizing	Forming a <i>School OER Development Team</i> consisting of classroom teachers, special assistant teachers, and experts.	Task division between teachers as content developers, ICT technicians as digital facilitators, and principals as coordinators.
Actuating	Implement OER into teaching and learning activities and assessments based on student needs.	Use of interactive videos for deaf students, adaptive e-modules for the visually impaired, and simple digital worksheets for students with intellectual disabilities.
Controlling	Conduct regular evaluations of the effectiveness of OER in supporting student learning and engagement.	The principal holds monthly evaluative meetings and supervises learning to ensure that OER is implemented consistently and effectively.

Human Resource Development	Improving teacher competence through digital training and ongoing OER workshops.	Cooperation between SLB and universities for open content creation training and sharing of good practices through <i>community of practice</i> .
Stakeholder Support and Collaboration	Building synergy between schools, parents, and the Education Office in supporting OER.	Collaboration to provide ICT facilities, internet access, and internal policies on the use of open learning resources.

OER Integration Model in Inclusive Education Management Systems

Based on theoretical studies and empirical evidence, a model of OER integration in an inclusive education management system can be developed, comprising four main pillars: policy support, human resource readiness, digital infrastructure, and cross-stakeholder collaboration. This model is in line with research (Gumilao, 2025) on integration in technology-based curricula, which emphasizes the importance of the ability to share, manage, and utilize digital resources in the learning process. In the context of SLB, the model translates into collaborative practices among special education teachers, therapists, and content developers to produce OER materials appropriate to students' characteristics. Quality control is carried out through collective reflection and user feedback (from teachers and students) to ensure OER remain relevant and adaptable to students' needs. This approach builds a sustainable open learning ecosystem and is oriented towards equity in access to education.

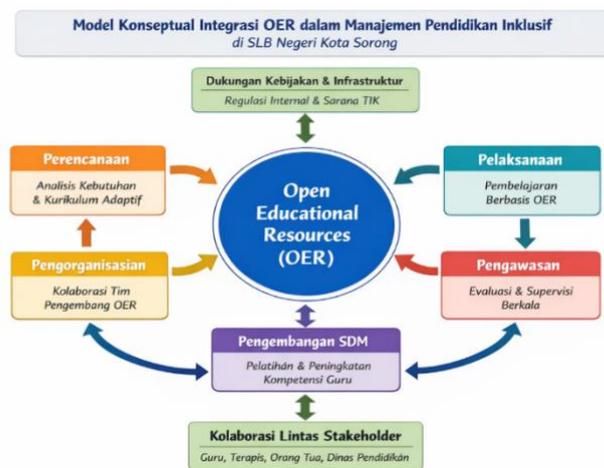


Figure 1. Conceptual Model of OER Integration in Inclusive Education Management

The conceptual model above places OER as a *strategic instrument* in the entire inclusive education management cycle. By using OER systematically from planning through evaluation, schools can create a more adaptive, efficient, and equitable learning system. OER functions not only as a teaching medium but also as a means of collaboration, professional reflection, and management innovation. Research (Moon & Park, 2021) supports the idea that integrating open sources into education can increase participation in learning communities and expand its social impact.

4. Conclusion

Efforts to realize quality, inclusive education in resource-limited areas require innovative, adaptive management strategies to meet the needs of students with special needs. In this context, the implementation of *Open Educational Resources* (OER) emerged as a relevant approach to strengthen learning at the Extraordinary Junior High School (SMPLB) in Sorong City. The results show that open learning resources have significant potential in supporting flexible, contextual, and easily

adaptable learning tailored to students' characteristics. Although it has only been applied by a small number of teachers, the experience gained shows an increase in student motivation, understanding, and participation through the use of visual and interactive media that can be accessed openly and modified according to learning needs.

From a managerial perspective, the study's results show that the use of open resources in SLB Negeri Sorong City remains an individual initiative and has not been systematically integrated in school policies. This condition emphasizes the importance of improving the education management function, especially at the planning, organizing, implementing, and evaluation stages so that digital learning resources can be used optimally. Institutional support through partisan school policies, improved teachers' digital literacy, and stronger collaboration among stakeholders are the main factors in building an open and sustainable learning system. School principals are expected to play an active role in driving innovation by establishing a digital media development team and including it in the School Work Plan (RKS) as part of a strategy to improve the quality of inclusive learning.

Theoretically, this research contributes to the development of inclusive education management studies by positioning OER as an integral part of the learning management system rather than merely a pedagogical tool. These findings enrich the perspective of open-source-based education management by emphasizing the importance of synergy between learning innovation, school leadership, and human resource development. In practice, the results of this research can serve as a reference for extraordinary schools, local governments, and education stakeholders in formulating policies to improve teacher competence, strengthen digital literacy, and provide digital learning support facilities in resource-limited areas.

There are several limitations in this study, including the limited scope of the location to a single educational unit and the relatively small number of informants, so the findings cannot be generalized. In addition, this study has not examined in depth the effectiveness of OER on student learning outcomes in the long term. Therefore, further research is recommended to involve more exceptional schools in different regions to obtain a comparison of best practices. Further studies should also examine practice-based training models and open collaboration among teachers in develop digital teaching materials, thereby strengthening OER's role as a catalyst for a more adaptive, innovative, and equitable transformation of inclusive education.

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