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Dynamics of Education in Coastal Communities: An Analysis of Limited Access and Distribution of Teachers

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Abstract

Educational inequality remains a critical issue in marginalized coastal communities, where standardized schooling systems often fail to accommodate local socio-economic conditions. This study examines the educational challenges faced by fishing communities in Tegalsari Timur Village, Ampelgading District, Pemalang Regency, Central Java, Indonesia. Using a qualitative case study approach, data were collected through in-depth interviews, participant observation, and document analysis involving eight key informants, including teachers and parents. Data validity was ensured through source and methodological triangulation, while analysis followed the Miles and Huberman interactive model. The findings reveal that educational disparities are driven by three interconnected factors: unequal teacher distribution due to geographic isolation, fluctuating student attendance associated with seasonal fishing activities, and limited educational infrastructure. These challenges create a mismatch between nationally standardized educational policies and the realities of coastal communities. To address these issues, participants emphasized the importance of geographically differentiated teacher incentives, flexible academic calendars aligned with local livelihood cycles, and community-based school management involving fishing households. This study introduces the concept of Coastal Pedagogical Adaptivity, which highlights the importance of institutional flexibility and community collaboration in improving educational access and participation in marginalized coastal areas. The findings demonstrate that context-sensitive educational policies are more effective than uniform approaches in addressing local needs and promoting educational equity for children in fishing communities.

Kata kunci:
pendidikan pesisir, disparitas guru, partisipasi siswa,

Abstrak

Ketidaksetaraan pendidikan tetap menjadi isu kritis di komunitas pesisir yang terpinggirkan, di mana sistem sekolah standar seringkali gagal mengakomodasi kondisi sosial ekonomi lokal. Studi ini meneliti tantangan pendidikan yang dihadapi oleh

adaptivitas pedagogis, studi kasus.

komunitas nelayan di Desa Tegalsari Timur, Kecamatan Ampelgading, Kabupaten Pemalang, Jawa Tengah, Indonesia. Dengan menggunakan pendekatan studi kasus kualitatif, data dikumpulkan melalui wawancara mendalam, observasi partisipan, dan analisis dokumen yang melibatkan delapan informan kunci, termasuk guru dan orang tua. Validitas data dipastikan melalui triangulasi sumber dan metodologis, sementara analisis mengikuti model interaktif Miles dan Huberman. Temuan menunjukkan bahwa kesenjangan pendidikan didorong oleh tiga faktor yang saling terkait: distribusi guru yang tidak merata karena isolasi geografis, fluktuasi kehadiran siswa yang terkait dengan kegiatan penangkapan ikan musiman, dan infrastruktur pendidikan yang terbatas. Tantangan-tantangan ini menciptakan ketidaksesuaian antara kebijakan pendidikan standar nasional dan realitas komunitas pesisir. Untuk mengatasi masalah ini, para partisipan menekankan pentingnya insentif guru yang berbeda secara geografis, kalender akademik yang fleksibel yang selaras dengan siklus mata pencaharian lokal, dan pengelolaan sekolah berbasis komunitas yang melibatkan rumah tangga nelayan. Studi ini memperkenalkan konsep Adaptabilitas Pedagogis Pesisir, yang menyoroti pentingnya fleksibilitas kelembagaan dan kolaborasi masyarakat dalam meningkatkan akses dan partisipasi pendidikan di daerah pesisir yang terpinggirkan. Temuan menunjukkan bahwa kebijakan pendidikan yang peka terhadap konteks lebih efektif daripada pendekatan seragam dalam mengatasi kebutuhan lokal dan mempromosikan kesetaraan pendidikan bagi anak-anak di komunitas nelayan.

INTRODUCTION

Ideally, education in coastal areas should be a golden bridge to equitable distribution of the quality of human resources, where the availability of competent and adequate educators is directly proportional to the high enthusiasm of students to study (Rashid 2020). These ideal conditions demand a fair distribution of teachers and a decent infrastructure so that fisher children can access knowledge without geographical constraints, making schools a center of hope to break the chain of structural poverty. However, the facts on the ground show a paradoxical reality that is in sharp contrast to this noble goal. The shortage of education personnel occurs due to the lack of incentives and comfort of life, causing many teachers to be reluctant to serve or often absent from remote areas (Ilmiyah et al. 2021). On the other hand, the number of students has decreased drastically not because of intellectual incapacity, but due to economic pressure that forces children to go to sea to help their parents from an early age. This form of opposition is clearly seen in the dynamics of society; On the one hand, there is a

collective hope that education raises social status, but on the other hand, the socio-economic structure actually encourages children to leave school for the sake of contributing instant income (Gamaputra et al. 2025). Government policies that mainstream compulsory education are often out of sync with the reality of the subsistence needs of fishery families. Instead of empowering, this inequality perpetuates the cycle of ignorance and poverty. Education, which should be a basic right and a tool of social mobility, has turned into a luxury item that is difficult to reach. This contradiction creates despair, where people realize the importance of schools but are trapped in conditions that make education feel irrelevant to the needs of daily survival, so that the goal of full human development on the coast fails to be achieved optimally, equitablely, and sustainably (Hidayati et al., 2025).

This contradictory phenomenon of education in coastal areas of Indonesia has attracted serious attention from various academic circles, as evidenced by five recent studies that have consistently confirmed the multidimensional crisis based on strong empirical findings (Hugen and Zulkarnain 2025) Triwiyanto & Kusumaningrum (2025) found that low financial incentives and living comforts are the main causes of the lack of distribution of quality teachers in remote areas.(Triwiyanto and Kusumaningrum 2025a) In line with that, (Marwansyah and Ritonga 2025) highlighting the family economic pressure factors that systematically encourage fishermen's children to choose to work to help their parents rather than pursue formal education. Meanwhile, (Zulham et al. 2023) strongly criticize digital infrastructure inequities that hinder access to information, and (Rosalia 2024) emphasized that centralistic education policies are often not in accordance with the local wisdom of coastal communities. These collective findings suggest that the problems are structural, economic, and policy in nature. However, there is a research gap that has not been optimally filled from the five studies. The majority of research still focuses on macro problem analysis and top-down policy evaluation, and not many have explored participatory community-based empowerment models that integrate local wisdom into everyday practical curricula. No in-depth study has yet formulated concrete collaborative strategies between schools, fishing families, and local stakeholders to create an independent and sustainable education ecosystem without relying entirely on central government assistance. The absence of a micro-intervention model that touches on psychological and socio-cultural aspects and how to design alternative education systems that are relevant to the fishing season cycle is a very important gap to be further researched in order to address the root of the problem in a more humanistic, contextual, and sustainable way in the future in the context of rapid social change.

The main purpose of this study is to comprehensively analyze the problems of education in coastal areas, especially related to the critical shortage of educators and low student participation that threaten the quality of future human resources (2025). This research will achieve this goal by answering three key problem formulations: mapping the profile of teacher distribution and student attendance, identifying the most dominant economic and geographical factors influencing these conditions, and formulating an effective education management model to address the disparity in the number of teachers and students. The urgency of this research is specifically located in

East Tegalsari Village, Ampelgading District, Central Java Province, based on the logical reason that this area is an empirical representation of the southern coastal region of Java that faces extreme geographical isolation and severe transportation infrastructure limitations, and has typical socio-cultural characteristics of fishing communities. Harsh natural conditions and difficult accessibility make this region often overlooked in national education mapping (B. Gunawan 2022). Preliminary field data show a striking disparity between the available teacher quota and the realization of class attendance, as well as the high dropout rate due to economic pressure from fishing families who prioritize parental assistance to go to sea (Triwiyanto and Kusumaningrum 2025b). Without in-depth analysis in these specific locations, government-generated education policies tend to be generalist, uniform, and do not touch on the root of unique local problems. Therefore, this research is very crucial to produce concrete policy recommendations based on real data in order to break the chain of long-term continuous education lag in the coastal areas of Central Java, ensure that the right to education is fulfilled fairly even in challenging geographical conditions, and become a pilot project for other coastal areas in Indonesia nationally.

This research is very important and urgent to be carried out immediately because it concerns the survival of the golden generation in marginalized areas that are threatened with permanent disadvantage. In East Tegalsari Village, Ampelgading District, the education crisis is not just a statistic, but a real humanitarian emergency where the absence of teachers and absenteeism of students has the potential to create a lost generation that exacerbates structural poverty. This urgency is based on the fact that national education policies have tended to be centralistic and have failed to respond to the specific challenges of unique coastal localities. Without accurate research-based interventions today, the gap in human resource quality between inland and coastal areas will widen, hampering the social mobility of fishing communities (Susilawati and Rahmah 2023). In addition, economic pressures and geographical barriers in Ampelgading have reached a critical point where delays in handling will have fatal consequences on the high dropout rate which is difficult to recover. This research is important because it provides the empirical evidence that policymakers need to design affirmative strategies that are on target, not just symbolic assistance. By immediately examining the root of the problem in these locations, we can prevent the normalization of long-standing educational injustices. The long-term impact of this waiver has the potential to burden the country with a much greater social cost than the initial research investment. Ultimately, the urgency of this research lies in the moral and constitutional commitment to ensure that every child of the nation, regardless of the geographical conditions in which they were born, has the same right to quality education for the sustainability of inclusive and socially just national development for all Indonesians in coastal areas that are often neglected, so that no more areas are left behind in global competition.

RESEARCH METHODS

This study adopts a qualitative approach with a case study design to dive deeply into the complexity of education problems in coastal areas that cannot be measured

through statistics alone. The qualitative approach was chosen because it allows researchers to explore the meaning behind the phenomenon of shortage of educators and students from the perspective of direct actors in the field. The case study design is applied by limiting the focus of the research to a specific location-bound system, so that geographical, social, and cultural contexts can be analyzed intact. Through this design, the researcher seeks to understand the dynamics of interaction between harsh coastal environmental conditions and existing education policies (Yuliyani and Khoirunnisak 2026). This research does not just describe the surface of the problem, but also explores the hidden root causes behind the social structure of fishing communities. Using the lens of a case study, each local uniqueness such as seagoing traditions and infrastructure limitations became important variables analyzed. This ensures that the results of the research have a strong empirical depth. This approach facilitates a holistic understanding of how teacher and student limitations are interrelated in the coastal education ecosystem (Utina et al. 2018). Thus, this methodology is designed to produce an accurate picture of real conditions on the ground, providing a solid foundation for the development of educational theory and practice in marginalized areas that are often overlooked in development. The flexibility of the qualitative approach allows researchers to tailor research questions as new findings emerge in the field, ensuring no important aspects are overlooked in this in-depth and ongoing investigative process. The focus on case studies allows for analytical generalizations to similar cases, rather than statistical generalizations, so that the findings at these locations can serve as a reference for other coastal areas that have similar socio-geographic characteristics in the archipelago.

Data collection techniques are rigorously carried out through in-depth text-based interviews or chats, participant observations, and document analysis to ensure the completeness of information from primary and secondary sources. The interview activity was the core of the data collection, which was carried out for a total of 180 minutes and divided into 3 different sessions to maintain the comfort and depth of information from 8 key resource persons which included curriculum teachers, parents of students, and homeroom teachers. The via chat method was chosen to provide time flexibility for fishermen and students to be able to respond to questions according to the occasion without the pressure of face-to-face interaction. To maintain research ethics and the security of personal data, the names of the interviewees were disguised using initials such as GK for curriculum teachers, OT1 to OT5 for parents, and WK1 to WK3 for homeroom teachers. The linguistic process is carried out in stages where the interview is carried out in Javanese to build emotional closeness, then transliterated into Indonesian with the consent of the source, and finally translated into English for scientific publication (Subyantoro 2019). Observation was carried out directly in the school environment and students' homes to validate oral statements with real physical conditions, while document analysis included attendance data and report card scores. This protocol is designed to minimize language bias and maintain the confidentiality of participants' identities. With this rigorous procedure, the data generated has a high level of accuracy and can be accounted for academically as well as ethically in the context of rural social research. Each interview session is recorded with full permission to ensure

that no important details are lost during the transcription process, so that data integrity is maintained from the beginning to the end of this research reporting. Each chat interview session is stored as a screenshot and a full permission conversation log export to ensure data integrity is maintained from the beginning to the end of this thorough research reporting.

Table 1: Informant profile

No.	Initials	Residence	Gender	Old
1	GK 1	Tegalsari	Women	45 Years
2	GK 2	Tegalsari	Women	35 Years
3	GK 3	Tegalsari	Male	50 Years
4	GK 4	Tegalsari	Male	47 Years
5	OT 5	Tegalsari	Women	36 Years
6	OT 6	Tegalsari	Male	40 Years
7	OT 7	Tegalsari	Women	27 Years
8	OT 8	Tegalsari	Male	25 Years

The validity of the data in this study is guaranteed through the application of source triangulation techniques and techniques, which are very functional to test the credibility of information by comparing data from various very different perspectives (AfD, 2008). The data that has been collected is then analyzed using the Miles and Huberman interactive model which consists of three important main activity flows, namely data reduction, data presentation, and conclusion drawn. In the early stages of data reduction, the researcher selects focus, focus, and simplifies raw data from existing field interview transcripts for data management without losing the essence of its original main meaning. Furthermore, the presentation of data is carried out in the form of a visual matrix or logical narrative that allows researchers to see the pattern of relationships between economic, social, geographical, and teacher availability factors in a very clear and structured manner. The final stage is the drawing of conclusions with a continuous verification process throughout the research process to ensure the findings have a strong evidence base. This analysis model was chosen because of its ability to manage complex qualitative data into highly systematic findings. Triangulation is carried out by checking the correctness of information from teachers against parents' information to avoid the existing one-sided subjectivity (Syahidan et al. 2015). With a combination of triangulation validation and systematic analysis of Miles and Huberman, this study ensures that the resulting education management model recommendations are based entirely on valid, highly reliable, and reliable empirical evidence for targeted policymaking. The conclusions were revalidated by member checking with the relevant resource persons to ensure that the interpretation was in accordance with the original intention, so that the final results of the research have high accountability in the eyes of academics and relevant local education stakeholders.

RESULTS AND DISCUSSION

A. Educational Inequality in Marginalized Coastal Communities in Indonesia

The findings reveal that educational inequality in East Tegalsari Village is shaped by the interaction of geographical marginalization, socio-economic vulnerability,

and institutional limitations. Three major challenges emerged from the data. First, the unequal distribution of teachers remains a persistent problem, as professionally certified educators are often unwilling to serve in the area due to inadequate living facilities and limited transportation access, particularly during periods of extreme weather. This condition has resulted in recurring shortages of teachers in several key subject areas. Second, student attendance patterns are strongly influenced by the seasonal dynamics of the local fishing economy. Many students are required to assist their families in fishing-related activities, leading to irregular school participation and disruptions in learning continuity. Third, inadequate educational infrastructure further exacerbates these challenges. The poor condition of classrooms and the lack of adequate learning facilities reduce both teacher retention and student engagement, thereby weakening the overall quality of educational provision.

Importantly, these factors do not operate independently but reinforce one another, creating a cycle of educational disadvantage that reproduces social inequality across generations. The findings suggest that conventional standardized educational policies are insufficient for addressing the needs of coastal communities. Instead, context-responsive interventions are required, including geographically differentiated teacher incentives, flexible academic calendars aligned with local livelihood cycles, and targeted infrastructure development. Such measures are essential for promoting equitable educational opportunities and strengthening educational resilience in marginalized coastal regions.

The findings of the study revealed a significant inequality in the distribution of teachers in East Tegalsari Village, despite the difference in perception between the administration and the existing field reality. Administratively, GK 1 states that "The distribution of teachers for now is even, either in the village or in the city", but this view is contradicted by the real conditions in schools. GK 4 added that "There are enough educators in our school", but the homeroom teacher feels that there is an "imbalance in the distribution of teachers" that affects learning. WK 3 explained in detail that "civil servant teachers are scattered and seem to be stacked in schools where easy access is in the city", so that coastal areas lack permanent teachers. Public perception is also in line with this, where OT 5 admits that "Regarding teachers, I think it is not even", because access is difficult and facilities are minimal. OT 6 also reinforces this complaint by stating that "often the number of teachers is uneven", which has an impact on the quality of teaching. This data shows that even though the administrative quantity is met, the quality and stability of teachers are still a serious problem for the continuity of learning. Dependence on honorary teachers and unequal distribution are felt by the community and homeroom teachers every day. This creates a gap between official school data and the real experience of students in coastal areas. Therefore, the validity of teacher distribution data needs to be reviewed by involving the perspective of the local community so that recruitment policies really touch the real needs of schools in remote areas that are often neglected in national education planning which is centralistic and rigid so that it is detrimental to the quality of student learning.

The pattern of student attendance shows drastic fluctuations that are directly correlated with the annual fishing season cycle, as many students are forced to miss

school to help their parents. GK 1 observed that "sometimes student attendance is low due to the high rainy season", which worsens accessibility to the school. WK 2 emphasized that "student absenteeism is often influenced by economic factors", so that education often loses priority to the needs of life. WK 3 recorded a unique phenomenon where "student attendance seems 'seasonal'", especially during the fishing season and abundant catches students will choose to join their parents to go to sea. OT 5 felt the impact firsthand, stating that "his presence is often unstable", not because of laziness but because of family conditions that require children to help their parents. OT 7 highlights that "low student attendance is often influenced by economic conditions", distance, and uncertain natural factors at all times. OT 8 also confirmed that "students are often absent due to economic factors", which has led to the uneven quality of education in the region. This cycle of poverty forces children to choose short-term jobs over longer-term investments in education, which are more beneficial. This phenomenon shows that financial assistance alone is not enough without real parental economic empowerment. Schools need to have flexible mechanisms that allow students to work without dropping out of school completely. Without real economic intervention, school dropout rates will remain high even though educational facilities are fully available in those areas that require special attention. Interview evidence from the Curriculum Teacher of SMP N 3 Ampelgading and SMP N 3 Petarukan

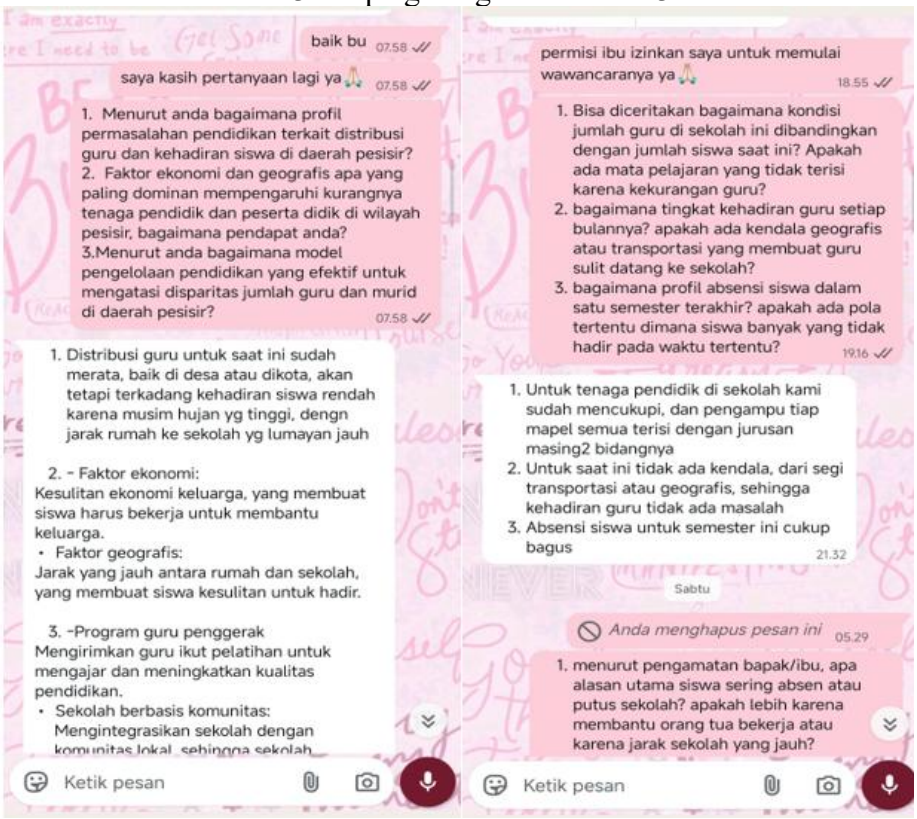

Figure 1: results of interviews with Curriculum Teachers

Geographical and infrastructure conditions are significant obstacles that affect the accessibility of education for teachers and students in East Tegalsari. GK 1 admitted

that there were obstacles "with a considerable distance from home to school", which affected attendance when bad weather hit the area. WK 2 states that "student absenteeism is often influenced by economic factors and geographical conditions", which requires a special approach from the school. WK 3 noted that "the weather is also a challenge for students who want to go to study science", especially when the tide is high or the waves are high in the sea. OT 5 complained about "weather factors and the distance to the school that is sometimes far away", which makes teachers lazy to be placed there permanently. OT 6 argues that "geographical factors have more influence on the lack of teachers", due to the extreme isolation of the region. OT 8 adds a "geographical condition" barrier, which hinders the daily mobility of teachers and students. This data contradiction suggests that physical infrastructure may already exist, but dynamic coastal natural conditions remain a major barrier. Limited sea and land transportation during extreme weather makes attendance inconsistent and difficult to predict. Therefore, infrastructure policies must consider resilience to coastal natural conditions, not just the construction of ordinary roads that are not weatherproof. The provision of special transportation for teachers and students is an urgent need to ensure the continuity of learning in areas with extreme geographical challenges such as East Tegalsari which requires innovative solutions.

The lack of proper and adequate school infrastructure has exacerbated the previous two problems, as the limitations of damaged classrooms and modern learning facilities reduce teacher motivation. WK 3 explained that "many are assisted by honorary teachers for every day in teaching and learning activities", so often teachers teach subjects that are not their field of expertise. OT 6 added that "there are teachers who have to concurrently teach several subjects at once", which certainly affects the quality of learning that children receive. GK 4 claims that "the teachers of each map are all filled with the majors of their respective fields", but the reality of the field shows a lack of competency matches. OT 8 states that "not always appropriate to the field makes learning less optimal", while students are often absent due to economic factors and geographical conditions. OT 7 emphasizes that "Teacher shortages and inconsistencies, as well as inconsistent attendance, make the quality of learning low", so that children are vulnerable to being left behind. WK 2 concluded that "The limited number of teachers makes learning less than optimal", which causes the learning process to not run consistently. This data shows that the main problem is not in recruitment, but in the retention and consistency of teacher attendance in isolated areas. Therefore, affirmative policies should not only focus on increasing quotas, but also on special incentives and mobility guarantees for educators in coastal areas so that administrative availability is directly proportional to the reality of classroom attendance.

These three complex problem profiles create a cycle of educational poverty that is difficult to break without real affirmative policy intervention from the local government in authority. OT 7 suggests that "serious attention is needed through equitable distribution of teachers, facility support", as well as approaches that understand the socio-economic conditions of coastal communities. OT 5 reminds that "the problem is not just education, but also about living conditions on the coast", so the solution must be holistic. WK 3 warns that "the quality of education on the coast is

difficult to catch up with national standards", if this patterned absence makes it difficult for teachers to carry out the applicable curriculum. OT 8 is concerned that "children in coastal areas are at risk of being left behind compared to other areas", due to the uneven quality of education. WK 2 emphasized that this "requires special attention and approach from schools and parents", so that the learning process does not run consistently. OT 7 added the need for an "approach that understands the socio-economic conditions of coastal communities", to ensure that the educational rights of East Tegalsari children are fulfilled equally. Flexibility of curriculum and schedule is key so that students can work and school together without conflict. Special incentives for local teachers are also needed to maintain the stability of educators so that they feel at home on duty. Collaboration between schools, governments, and community leaders is needed to create a sustainable education ecosystem. Only with an approach that humanizes local conditions, education problems in East Tegalsari can be solved in a sustainable and dignified manner for all education stakeholders in the region.

B. Geographical Isolation, Seasonal Livelihoods, and Educational Vulnerability in Coastal Indonesia

These findings highlight three dominant economic and geographical factors that affect the crisis of educators and students in East Tegalsari Village, Pemalang. First, the geographical conditions of isolated coastal areas with difficult access to land and sea transportation during bad weather are the main obstacles for teachers to perform their duties consistently, leading to high turnover and vacancy of qualified teaching staff in these remote areas due to high travel safety risks. Second, traditional fishery-based economic factors make children a vital resource for parents to go to sea, so that the student attendance rate increases drastically during certain fishing seasons because the priority of daily family income takes precedence over long-term formal education which is considered less urgent for the daily survival of the surrounding community. Third, the limitation of school infrastructure due to limited regional budgets worsens the situation, where minimal facilities are not proportional to the workload of teachers in difficult areas, thereby reducing the motivation of educators to survive for a long time and reducing the attractiveness of schools for students to attend regularly every day. This combination of extreme geographical isolation and seasonal economic pressure of fishermen creates a vicious circle of educational poverty that significantly hinders the equitable distribution of access to learning in the northern region of Central Java. Without special financial incentives for coastal teachers and adjustment of the academic calendar to the local economic cycle, the quality of education in East Tegalsari will continue to lag behind the more developed surrounding mainland. The local government needs to immediately formulate affirmative policies to address the root of these geographical and economic problems simultaneously to ensure the sustainability of a stable teaching and learning process for the coastal community of Ampelgading for a brighter future for the younger generation.

The findings of the study highlight the geographical conditions of isolated coastal areas with difficult access to land and sea transportation when bad weather is a major obstacle for teachers to perform consistently. WK 3 emphasized that "What

affects educators the most is geographical factors", which leads to the high turnover of qualified teaching staff in these remote areas due to the high risk of travel safety. OT 5 observed that "remote locations, difficult access, and natural conditions such as bad weather make teachers lazy to be placed there", so that regional isolation becomes a real barrier to teacher distribution. OT 6 added that "geographical locations in coastal areas that tend to be remote also make many teachers less at home", which has a significant impact on the stability of long-term teaching. OT 7 noted that "access to schools in coastal areas is often constrained by distance, limited transportation", exacerbating the isolation conditions for out-of-area educators who want to serve. OT 8 concludes that "difficult access such as long distances, limited transportation, and weather conditions are barriers for students and teachers", creating a work environment that is not conducive to educator professionalism. WK 2 also confirmed that "geographical factors such as difficult access, distance, and weather conditions make it difficult for students and teachers to attend consistently", which disrupts the academic calendar. This data proves that extreme geographical isolation significantly hinders the equitable distribution of access to learning in the northern region of Central Java. Without special handling of transportation infrastructure, the quality of education in East Tegalsari will continue to lag behind the surrounding land areas which are more developed because teachers are reluctant to stay in areas with severe natural challenges every rainy season arrives in the coastal area of Ampelgading which requires concrete solutions.

Traditional fishery-based economic factors make children a vital helper for parents to go to sea, so that student attendance rates increase dramatically during certain fishing seasons because the priority of daily family income takes precedence over long-term formal education. GK 1 identifies that "Family economic difficulties, which make students have to work to help the family", so that academic learning consistency is seriously impaired by urgent needs. WK 2 states that "the dominant economic factor is uncertain family income so that children often help their parents", which makes education less of a priority for the daily survival of the surrounding community. WK 3 explained that "for students, economic factors are the most influencing because of needs", during the fish harvest season, children prefer to follow their parents rather than go to school. OT 5 felt the impact directly, where "the most felt economic factor is because parents' income is unstable, so education is often considered less important". OT 6 added that "Family economic factors also have an effect, because there are those who prefer their children to help earn income rather than attend school regularly". OT 7 reinforces this by stating that "many families depend on jobs such as fishermen or day laborers with uncertain incomes, so children often help their parents". This combination of extreme geographical isolation and seasonal fishermen's economic pressures creates a vicious cycle of educational poverty. The local government needs to immediately formulate affirmative policies to address the root of these geographical and economic problems simultaneously to ensure the sustainability of a stable teaching and learning process for the coastal community of Ampelgading for a brighter and more prosperous future for the young generation in a sustainable manner.

The limited school infrastructure due to the limited regional budget exacerbates the situation, where the lack of facilities is not proportional to the workload of teachers

in difficult areas, thus reducing the motivation of educators to survive for a long time and reducing the attractiveness of schools for students to attend regularly every day. WK 3 complained that "poor health facilities and internet signals make teachers feel isolated", which adds to the psychological burden while serving in coastal areas with minimal connectivity. OT 7 highlighted that "the location is far from the city centre, limited facilities and lack of incentives make many teachers reluctant to be placed in the area", making it difficult for the quality of teaching to maintain national standards. OT 5 mentions that "natural conditions such as bad weather make teachers lazy to be placed there and students also find it difficult to go to school", which shows the dependence on infrastructure conditions that can withstand extreme weather. OT 6 notes that "the geographical location in coastal areas that tend to be remote also makes many teachers less at home or often change assignments", as a result of which the continuity of learning is disrupted for students. WK 2 emphasizes that "geographical factors such as difficult access, distance, and weather conditions make it difficult for students and teachers to attend consistently", which is exacerbated by inadequate facilities. Although GK 4 states "For now there are no obstacles, in terms of transportation or geography", the reality on the ground shows many teachers feel isolated. The lack of life support facilities and access to land and sea transportation that are difficult to reach during extreme weather causes teacher vacancies in specific subjects that are crucial for the future of students in this region.

This combination of extreme geographical isolation and seasonal economic pressure of fishermen creates a vicious circle of educational poverty that significantly hinders the equitable distribution of access to learning in the northern region of Central Java. WK 3 maps out the problem clearly that "What affects educators the most is geographical factors and what affects learners is the economy", so solutions must address both sides simultaneously to be effective. WK 2 concluded that "The combination of the two leads to a lack of educators and low student participation in coastal areas", which exacerbates the region's lagging behind national standards. OT 8 asserts that "These two factors affect each other resulting in a lack of educators and a low number of students in coastal areas", creating a cycle that is difficult to break without intervention. OT 7 felt that "children in coastal areas face greater challenges in obtaining a proper education than other regions", as a result of a system that does not take sides with local conditions. OT 6 warns that "As a result, the continuity of learning is disrupted", which has a long-term impact on the quality of human resources in coastal areas. WK 3 reveals the mindset of the community that "in their minds a diploma does not guarantee welfare as fast as fishing skills", which reinforces the economic reasons for dropping out of school early. Without special financial incentives for coastal teachers and adjustment of the academic calendar to the local economic cycle, the quality of education in East Tegalsari will continue to lag behind the surrounding mainland areas which are more developed and have better access to existing national education resources.

The local government needs to immediately formulate affirmative policies to address the root of these geographical and economic problems simultaneously to ensure the sustainability of a stable teaching and learning process for the coastal community of

Ampelgading for a brighter future for the younger generation. WK 3 highlights the burden on teachers where "transportation costs swell so that the existing salary is used up for travel", which requires special financial compensation from the local government so that teachers feel at home. OT 7 states that "the lack of incentives makes many teachers reluctant to be placed in the area", so teacher retention is a major problem that must be resolved immediately with a special policy. OT 5 notes that "education is often considered less important", so there needs to be a paradigm shift through specific approaches from schools and parents to raise awareness. OT 8 reminds that "difficult access such as long distances, limited transportation, and weather conditions are obstacles for students and teachers", which requires specialized infrastructure that is weather-resistant. GK 1 states that "The long distance between home and school, which makes it difficult for students to attend", needs to be overcome with adequate school dormitory or transportation. WK 2 emphasized that this situation "requires special attention and approach from schools and parents", so that the learning process does not run consistently and is disrupted by external factors. These three complex problem profiles create a cycle of educational poverty that is difficult to break without real affirmative policy intervention from the local government which is authorized to ensure that the educational rights of the children of East Tegalsari are fulfilled equally and sustainably for a better future for the young generation in the northern coast region of Java so that they are not left behind.

C. Adaptive Educational Management for Marginalized Coastal Communities

This study formulates three effective education management models to overcome the disparity between teachers and students in East Tegalsari Village, Pemalang. First, a special incentive model based on geographical hardship zones, where local governments provide extra allowances and decent housing facilities for teachers serving in these remote coastal areas, thereby attracting the interest of quality educators to stay for a long time and reduce chronic classroom vacancies due to difficult access to land and sea transportation. Second, the implementation of a flexible academic calendar model that is strictly adapted to the local fishermen's season cycle, allows students to keep up with their studies during the fish harvest season without having to drop out of school, so that the balance between the immediate economic needs of the family and the right to formal education can be achieved in harmony without sacrificing either party. Third, a strong fishing community-based school management model, involving community leaders and parents in supervising student attendance and maintaining school infrastructure, creates a strong sense of shared ownership over the sustainability of coastal children's education so that it is not neglected. The integration of these three strategic models is expected to be able to break the chain of inequality in access to education that has occurred due to extreme geographical barriers and economic pressure in Ampelgading District. With this integrated strategy, the disparity in the number of teachers and students can be significantly minimized, ensuring that every child in East Tegalsari gets the same learning rights without being constrained by difficult environmental conditions. The success of the implementation of this policy is highly dependent on the strong commitment of the district education office to conduct

continuous monitoring and evaluation in order to create a stable and inclusive learning ecosystem for all coastal communities in Central Java who have been marginalized in the development of national education equally.

This study formulated a special incentive model based on geographical hardship zones, where local governments provide extra allowances and decent housing facilities for teachers working in these remote coastal areas, thereby attracting the interest of quality educators to stay for a long time and reduce chronic class vacancies due to difficult access to land and sea transportation. WK 3 proposes "Differential Incentives" in the form of "Additional salaries + special allowances for teachers in remote areas" to compensate for regional difficulties. OT 6 emphasizes that "the government also needs to pay more attention, such as incentives or proper facilities so that teachers want to survive in coastal areas". OT 8 agrees that effective solutions involve "equitable distribution of teachers by providing special incentives" for educators on duty. GK 4 added that "Incentives & teacher rotation: attracting and maintaining the distribution of educators" is crucial for stability. OT 5 suggests that "The government also needs to provide special incentives for teachers to be interested in teaching in isolated coastal areas". WK 2 supports "equal distribution of teachers with special incentives" as the first step of improvement. The integration of these three strategic models is expected to be able to break the chain of inequality in access to education that has occurred due to extreme geographical barriers and economic pressure in Ampelgading District. With this integrated strategy, the disparity in the number of teachers and students can be minimized, ensuring that every child in East Tegalsari gets the same learning rights without being constrained by difficult environmental conditions. The success of the implementation of this policy is highly dependent on the strong commitment of the district education office to conduct continuous monitoring and evaluation for the creation of a stable and inclusive learning ecosystem for all coastal communities in Central Java who have been marginalized in the development of national education in an equitable and equitable manner.

The application of a flexible academic calendar model that is strictly adapted to the local fishing season cycle, allows students to keep up with their studies during the fish harvest season without having to drop out of school, so that a balance between the immediate economic needs of the family and the right to formal education can be achieved in harmony without sacrificing either party. OT 6 states that "For students, I think there needs to be a more flexible system, for example adjustment of study time or additional classes, because many children also have to help their parents". OT 8 added the importance of "adjusting the learning schedule according to the student's conditions" so as not to be overburdened. WK 2 suggests "the implementation of a learning schedule that adjusts to the conditions of students" as part of effective management. GK 4 concluded that this model must be "flexible, efficient, and based on local conditions" to be relevant. OT 5 emphasized that education management "must be flexible and adjust to field conditions, not use rigid patterns like in cities". OT 7 argues that an effective model "must be flexible, contextual, and in favor of local conditions" for the sake of sustainability. The integration of these three strategic models is expected to be able to break the chain of inequality in access to education that has occurred due to

extreme geographical barriers and economic pressure in Ampelgading District. With this integrated strategy, the disparity in the number of teachers and students can be minimized, ensuring that every child in East Tegalsari gets the same learning rights without being constrained by difficult environmental conditions. The success of the implementation of this policy is highly dependent on the strong commitment of the district education office to conduct continuous monitoring and evaluation for the creation of a stable and inclusive learning ecosystem for all coastal communities in Central Java who have been marginalized in the development of national education in an equitable and equitable manner.

The strong fisherman's community-based school management model, involving community leaders and parents in the supervision of student attendance and the maintenance of school infrastructure, creates a strong sense of shared ownership of the sustainability of coastal children's education so that it is not neglected. GK 1 proposes "Community-based schools: Integrating schools with local communities, so that schools become centres of community activities and increase parental participation". OT 5 suggests that "local communities can also be involved as learning companions, so that students still receive guidance". OT 8 emphasizes the need for "cooperation between schools, parents, and the government so that the education process continues to run evenly in coastal areas". WK 2 added that "collaboration between schools, parents, and the government is needed so that education continues to run despite the limitations". WK 3 proposes "Involvement of indigenous leaders in education advocacy" to strengthen social support. OT 7 states that this model must be "in favor of local conditions" in order to be accepted by the community. The integration of these three strategic models is expected to be able to break the chain of inequality in access to education that has occurred due to extreme geographical barriers and economic pressure in Ampelgading District. With this integrated strategy, the disparity in the number of teachers and students can be minimized, ensuring that every child in East Tegalsari gets the same learning rights without being constrained by difficult environmental conditions. The success of the implementation of this policy is highly dependent on the strong commitment of the district education office to conduct continuous monitoring and evaluation for the creation of a stable and inclusive learning ecosystem for all coastal communities in Central Java who have been marginalized in the development of national education in an equitable and equitable manner.

The integration of these three strategic models is expected to be able to break the chain of inequality in access to education that has occurred due to extreme geographical barriers and economic pressure in Ampelgading District, including through the use of technology and alternative methods. GK 1 recommends "Educational technology: Using technologies such as e-learning and educational applications to improve access to education and teaching quality". GK 4 suggests "Simple use of technology: online/offline learning" to overcome teacher limitations. OT 5 states "The use of technology is also important, such as using video learning or simple online classes to help the learning process when teachers are limited". WK 3 proposes "Utilization of Technology: Distance learning for specific subjects" via satellite. GK 4 also suggests "School clusters: teachers teaching in multiple schools (mobile)" for efficiency. OT 5

added "a teacher sharing system, where one teacher can teach in several schools on a certain schedule, so that the shortage of teachers can be covered". With this integrated strategy, the disparity in the number of teachers and students can be minimized, ensuring that every child in East Tegalsari gets the same learning rights without being constrained by difficult environmental conditions. The success of the implementation of this policy is highly dependent on the strong commitment of the district education office to conduct continuous monitoring and evaluation for the creation of a stable and inclusive learning ecosystem for all coastal communities in Central Java who have been marginalized in the development of national education in an equitable and equitable manner. This study formulates three effective education management models to overcome the disparity between teachers and students in East Tegalsari Village, Pemalang. First, a special incentive model based on geographical hardship zones, where local governments provide extra allowances and decent housing facilities for teachers serving in these remote coastal areas, thereby attracting the interest of quality educators to stay for long periods of time and reduce chronic classroom vacancies.

The success of the implementation of this policy is highly dependent on the strong commitment of the district education office to conduct continuous monitoring and evaluation for the creation of a stable and inclusive learning ecosystem for all coastal communities in Central Java who have been marginalized in the development of national education in an equitable and equitable manner. OT 6 concluded that "the management must be fair, flexible, and really look at the conditions of coastal communities, so that the problem of teacher shortage and low student attendance can be slowly resolved". OT 7 emphasizes that "an effective education management model to address the disparity in the number of teachers and students in the coastal area of Pemalang must be flexible, contextual, and in favor of local conditions". WK 2 argues that "an effective model is a flexible and local-condition-based management of education" for sustainability. WK 3 suggested "Local Teacher Recruitment: Binding scholarships for coastal sons and daughters to become teachers" to reduce turnover. GK 4 states that "An effective model for addressing the teacher-student disparity in coastal areas is a combination of several holistic approaches". OT 8 concludes that "an effective management model is one that is flexible and adapts to local conditions" for the sake of the right to learn. This study formulates three effective education management models to overcome the disparity between teachers and students in East Tegalsari Village, Pemalang. First, a special incentive model based on geographical hardship zones, where local governments provide extra allowances and decent housing facilities for teachers serving in these remote coastal areas, thereby attracting the interest of quality educators to stay for long periods of time and reduce chronic classroom vacancies.

Discussion

This comprehensive study in East Tegalsari Village, Pemalang Regency, reveals critical findings regarding coastal education disparities that are significantly influenced by unique local geographical and economic factors. Three main problems are clearly identified: inequality in the distribution of teachers due to difficult access to transportation and minimal facilities, fluctuations in student attendance that are directly

correlated with the fishing season cycle, and inadequate school infrastructure. The dominant factors of the cause are the geographical isolation of coastal areas that hinder the mobility of professional educators and the economic pressures of fishing families who prioritize urgent daily income over long-term schooling (Nurlatu et al. 2025). To overcome this, the research formulated three models of effective education management. First, the provision of special incentives based on geographical difficulty zones for teachers to increase the retention of qualified teaching staff. Second, the implementation of a flexible academic calendar that adjusts to the fishing season so that students are not forced to drop out of school while helping their parents. Third, a management model based on the fishing community to create a sense of shared ownership of the sustainability of children's education. The integration of this strategy is expected to be able to break the cycle of educational poverty by ensuring that the right to learning is fulfilled without ignoring the existing economic reality. Successful implementation requires a strong commitment from local governments through affirmative policies and monitoring of continuous evaluation. Without intervention to address the root causes of geographical and economic problems simultaneously, the quality of education in this region will continue to lag behind the mainland, so that the young coastal generation is at risk of being left behind in national development. Cross-sector synergy is needed to ensure the sustainability of the program so that it has a real positive impact on the people of Ampelgading (Coin 2026).

Theoretically, the findings of this study strengthen the validity of Bronfenbrenner's Theory of the Ecology of the Education System, which asserts that the development of an individual's education is inseparable from complex interactions with the surrounding environment (Mujahidah, 205). This theoretical indicator is directly related to the field findings in East Tegalsari specifically and realistically. At the microsystem level, the limitations of damaged school infrastructure and the economic pressure of fishing families directly affect student attendance and teacher motivation, proving that the immediate environment determines the quality of students' daily learning (Adiputra 2026). At the ecosystem level, isolated coastal geographical conditions with difficult transportation access and fishing season cycles become external factors that hinder teacher distribution and learning consistency, demonstrating how local contexts shape school policy indirectly but significantly. Finally, at the macrosystem level, affirmative policy recommendations such as hardship zone incentives and flexible academic calendars reflect the need to adapt national policy structures to local cultural realities in order to be effectively implemented (Zubaidillah 2018). The main theoretical meaning is that educational disparities are not just a pedagogical technical problem, but a failure of the system to accommodate the specific ecological variables of coastal areas. This theory explains why the uniform approach fails in coastal areas; Solutions should be contextual and adaptive to the environment. A direct link is seen when macrosystem policy interventions are designed to mitigate the geographical barriers of the ecosystem to protect the learning rights of microsystem children (A. Gunawan et al. 2025). Thus, this study provides empirical evidence that educational justice can only be achieved through a holistic ecological approach that recognizes the dependence of the quality of education on the socio-economic and

geographical conditions of the local community, rejecting the view that schools are entities that stand apart from the reality of their society. This emphasizes the urgency of a contextual approach in national education public policy to be on target (Yunansah and Herlambang 2017).

The findings of this study are highly relevant and strongly support some previous research on education in remote and coastal areas of Indonesia that highlight the close link between geography and economics (Kusnanto et al. 2025). Just like previous studies, this study confirms that geographical isolation and economic pressures are the main barriers to teacher distribution and student attendance. However, there are significant differences in the approach to the solutions offered compared to the previous literature. Previous studies have tended to focus partially on physical infrastructure assistance or operational assistance funds alone, which have proven to be less effective in addressing the root of seasonal fishermen's work culture problems. This study rejects the view that a uniform policy approach can be applied nationally without deep local adaptation (Coal 2025). While other studies have only identified problems separately between economic and geographical factors, this study offers concrete, integrated solutions. The similarities lie in the identification of basic infrastructure problems, but the difference lies in the policy responses offered holistically. This study fills a gap in the literature on specific management models for traditional fishing communities that is often overlooked in general education studies. Most previous studies have focused only on urban or rural contexts in general. The novelty of this research finding lies in the integration of three complementary education management models, namely hardship zone-based incentives, flexible academic calendars according to the fishing season, and fishery community-based management, as a package of contextual solutions that have never been comprehensively formulated in previous coastal education studies in Central Java, providing a new framework for regional affirmative policies that are more responsive to reality sociocultural communities of Pemalang in specific and detailed terms for long-term sustainability and equitable distribution of inclusive national education quality (Santoso 2026).

Based on the novelty of the findings of this study, the strategic step that needs to be taken immediately is the transformation of education policy from a uniform approach to a contextual affirmative model that is responsive to coastal realities (Putra et al. 2025). From the aspect of government policy, the Pemalang Regency Education Office needs to immediately issue a special regulation on geographical difficulty zoning that provides significant financial incentives, decent housing facilities, and priority career paths for teachers serving in East Tegalsari Village. Local governments should also coordinate with the Ministry of Education to pilot a flexible academic calendar adapted to the fishing season cycle as a national pilot project, so that student attendance is no longer considered an administrative offense but rather an adaptive response to family economic pressures. In the context of coastal rural education, schools need to build structural partnerships with community leaders and fisher groups to establish community-based education oversight committees that ensure the continuity of student learning even in difficult economic conditions (Hugen and Zulkarnain 2025). Teacher training should also be directed at the development of adaptive learning modules that

can be accessed offline or through distance learning methods when students help parents go to sea. Cross-sectoral synergy between governments, schools, and communities is key to success, supported by a real-time data-based evaluation monitoring system to ensure targeted policy interventions. Without concrete action to implement this integrated model, the disparity in coastal education will continue to widen, exacerbating the lagging of the young generation of fishermen in the national development competition (Widyastuti 2021). Therefore, the urgency of evidence-based affirmative policies must be a priority for regional budgets and priority programs for the development of inclusive education that is socially just for all Indonesians in coastal areas.

CONCLUSION

This study concludes that the disparity in education in East Tegalsari Village is not just a technical problem of lack of teachers or facilities, but a manifestation of systemic failure of national education policies that ignore the ecological and sociocultural realities of coastal communities. The surprising finding that was revealed was that student "absenteeism" and teacher "unwillingness" were actually rational responses to rigid and uncontextual policy structures, not forms of laziness or apathy as often stigmatized. Even more surprising, the solution to this complex problem does not necessarily require large budgets or advanced technology, but rather the political courage to undertake administrative flexibilities such as academic calendar adjustments and difficulty-zone-based incentives that are already possible in regulation but never consistently implemented at the local level. This study uncovers a painful paradox: the more uniform education policies are implemented, the deeper the inequality created in marginalized areas such as East Tegalsari. The most surprising implication is that without a paradigm shift from a "one size fits all" approach to an integrated, contextual affirmative model, any educational assistance program in coastal areas will only be a pseudo-solution that prolongs the cycle of structural poverty. This conclusion challenges the common assumption that educational equity can be achieved through national standardization, but instead proves that educational equity requires policy differentiation that is responsive to local diversity. Thus, this research not only offers a technical solution, but also challenges the philosophical foundation of Indonesia's education policy which is still trapped in pseudo-uniformity, demanding fundamental reforms so that the learning rights of fishermen children are no longer sacrificed for the sake of rigid administrative consistency and do not humanize the reality of the lives of the coastal communities of Pemalang.

The main weakness of this study lies in the limited geographical coverage only in East Tegalsari Village, Ampelgading District, Pemalang Regency, so that the findings regarding coastal education disparities cannot be generalized widely to other regions in Indonesia that have different sociocultural and geographical characteristics. The specificity of the context of traditional fishing communities on the north coast of Java may not represent the reality of coastal communities in the eastern region of Indonesia or areas with different livelihoods such as agriculture or tourism. In addition, the

limitations of the sample and the duration of the research have the potential to ignore long-term seasonal variations and the perspectives of other stakeholders such as provincial governments or non-governmental organizations that also affect education policies. To address these weaknesses, future researchers will need to conduct multisite comparative studies involving various coastal villages with different characteristics in several provinces, so that the pattern of findings can be validated more comprehensively. A longitudinal approach is also recommended to observe the dynamics of policy changes and their impact on teacher distribution and student attendance over a longer period of time. The use of mixed methods with a larger and more diverse sample will increase the reliability of the data and enrich contextual analysis. Research collaboration across institutions and disciplines is also important to produce policy recommendations that are more holistic and applicable nationally. By expanding the scope and methodology of the research, the novelty of the fisherman's community-based education management model offered by this research can be tested for external validity, thus becoming a strong foundation for inclusive education policy reform that is truly responsive to the diversity of Indonesia's coastal ecosystem as a whole and fairly.

REFERENCES

Adiputra, Sowan. 2026. "Management of Ecosystemic Education in Eco-Friendly Schools (Case Study at UPT SD Negeri 2 Margodadi)." *Journal of education buds* 8 (2): 368–81.

AfD, yes. 2008. "Validity and Reliability in Qualitative Research." *Indonesian Journal of Nursing* 12 (2): 137–41.

Coal, eka elviana. 2025. "Reconsidering School Uniform Policy: Regulations, Challenges, and Its Impact on Learners." *Ihsan: Journal of Islamic Education* 3 (3): 598–604.

Gamaputra, Gading, Septina Alrianingrum, and Agung Dwi Bahtiar El Rizaq. 2025. *Expansion of higher education: hopes, challenges, and opportunities for social transformation*. Publisher: Kramantara JS.

Gunawan, agam, rizdki elang gumelar, and sholeh hidayat. 2025. "Critical and Transformative Pedagogics: The Foundations of Emancipatory Education in the Era of Disruption." *Pendas: Scientific Journal of Basic Education* 10 (04): 243–54.

Use, brilliant. 2022. "Public Accessibility Index in Coastal Areas of Makassar City = Public Index Accessibility in Coastal Areas of Makassar City." Preprint, Hasanuddin University.

Hidayati, inayah, Mochammad Wahyu Ghani, Intan Adhi Perdana Putri, Widayatun Widayatun, and Augustina Situmorang. 2025. *The aspirations of fisher families on the north coast of Java towards children's education*.

Hugen, Muhammad, and Iskandar Zulkarnain. 2025. "Cultural Construction of School Dropouts in the Coastal Community of Desa Baru, East Belitung." *Journal of multidisciplinary scientific research* 2 (02): 946–61.

Ilmiyah, lailatul, husnul khotimah, nur rachma aryani, and alaika m. Bagus kurnia ps. 2021. "PAI Learning Problems in Remote Areas: A Study on Human Resource Limitations." *Tarbiyah islamiyah: scientific journal of Islamic religious education*

11 (1): 31–40.
Kebubun, Rosina Jostina Marise. 2025. "Analysis of Factors of Reducing School Participation in Remote Areas in Merauke." *Journal of Social Sciences and Humanities* 1 (2): 425–41.
Kusnanto, s. Pd, candra gudiato, m. Kom, silvester s. Pd, hendrikus torimtubun, and siprianus jewarut ss. 2025. *Family resilience and elementary school education: social and cultural perspectives in remote areas*. Uwais is inspired by Indonesia.
Marwansyah, Marwansyah, and Hasnun Jauhari Ritonga. 2025. "Coastal Adolescents' Perceptions of Higher Education." *Indonesian journal of innovation studies* 26 (3): 10–21070.
Mujahidah, Mujahidah. 2015. "Implementation of Bronfenbrenner's Ecological Theory in Building Quality Character Education." *Lantera: Journal of Da'wah and Communication* 17 (2): 145304.
Muntu, Gerry Aditya. 2026. *Quality education for all: innovations and strategies in creating inclusive, equitable and adaptive education in the digital era*. Minhaj wrote.
Nurlatu, Juliana, Samson Laurens, Ohoiwutum St K, and Wahab Tuanaya. 2025. "Education in the Archipelago: Learning from Lolong Guba District, Buru Regency." *Jiip-Scientific Journal of Educational Science* 8 (9): 11307–17.
Putra, Edi Susrianto Indra, Khairuddin Khairuddin, A. Muthalib, and Hasnawati Hasnawati. 2025. "Transformation of Education Management in the Inhil Coastal Region: An Analysis of Community Socio-Economic Dynamics." *Education* 13 (2): 625–65.
Rasyid, rahim. 2020. "The Importance of Education for the Community in the Coast of Indonesia Rahim." *Rahim*.
Rosalia, feni. 2024. "The Rationality of Education Decentralization Policy in Lampung Province (Reality and Hope)." *Perspectives* 13 (2): 339–46.
Santoso, joko. 2026. "School Leadership in a School-Based Management Framework: Model Analysis, Challenges, and Integration of Spiritual Values (A Buddhist School Perspective Study)." *Innovation: a scientific journal of educational development* 4 (2): 149–59.
Subyantoro, s. 2019. "Forensic Linguistics: The Contribution of Language Studies in Law Enforcement." *Adil indonesia journal* 1 (1).
Susilawati, Susilawati, and Lisa Aulia Rahmah. 2023. "Analysis of the Low Quality of Human Resources and Potential of Coastal Natural Resources in Serdang Bedagai Regency, North Sumatra." *Zahra: Journal of health and medical research* 3 (1): 261–66.
Syahidan, Muhammad Ilham, Andika Bayu Herbowo, and Sari Wulandari. 2015. "Improving Service Quality Based on Analysis of Bandung City Pospay Customer Needs Using Servqual, Canoe Model, and Triangulation Techniques." *Jrsi (Journal of Systems and Industrial Engineering)* 2 (01): 60–64.
Triwiyanto, Teguh, and Desi Kusumaningrum. 2025a. "Inequality in the Distribution of Public Elementary School Teachers and Equitable Access to Education Quality." *Journal of public administration* 21 (2).

Triwiyanto, Teguh, and Desi Kusumaningrum. 2025b. "Inequality in the Distribution of Public Elementary School Teachers and Equitable Access to Education Quality." *Journal of public administration* 21 (2).

Utina, Ramli, Elya Nusantari, Abubakar Sidik Katili, and Yowan Guest. 2018. *Coastal ecosystems and natural resources: the application of conservation character education*. Deepublish.

Widyastuti, Ana. 2021. *Optimization of distance learning (pjj), offline online, bdr*. Elex media komputindo.

Yuliyani, Dwi Nur, and Anis Khoirunnisak. 2026. *Integration of coastal local culture of Semarang in environmental geography education as a climate change adaptation strategy*.

Yunansah, Hana, and Yusuf Tri Herlambang. 2017. "Ecopedagogic-Based Education in Fostering Ecological Awareness and Developing the Character of Elementary School Students." *Eduhumaniora| Journal of Basic Education Cibiru Campus* 9 (1): 27–34.

Zubaidillah, muh haris. 2018. "Theories of Ecology, Psychology, and Sociology to Create an Islamic Educational Environment." *Journal of Islamic religious education* 1 (2): 83–102.

Zulham, t., m. Ishak Hasan, helmi noviar majid, et al. 2023. *Economy of agricultural and coastal areas*. Shia kuala university press.