

**PROMOTING THE FUTURE THROUGH EDUCATION: THE ROLE OF
TEACHERS IN MINING AREAS
(A Literature Review in the Context of Bangka Belitung Islands)**

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Abstract: Bangka Belitung, known for its globally recognized tin mining industry, has recently faced significant corruption cases within the sector. This emphasizes the region's need to diversify its economy beyond mining and prioritize education for sustainability. The province has recorded the lowest Gross Enrollment Ratio (GER) in higher education in Indonesia over the past nine years, indicating a concerning disparity between educational quality and the wealth generated from tin mining. Teachers, especially during curriculum transitions, are identified as key factors in improving education quality in the province. This article aims to propose strategies to enhance education in mining areas, particularly in Bangka Belitung Province, through teacher empowerment. This research contributes uniquely by highlighting the urgent need for teacher empowerment in mining areas, an aspect that has been underexplored in previous literature, which mostly focuses on environmental impacts in mining areas and the necessity of Environmental Education (EE) in schools. The study employs a qualitative method with a literature review approach, drawing on various scholarly sources. Based on the literature review, three main interventions are identified to improve education quality and motivate adolescents to pursue higher education. Teacher empowerment during curriculum transitions is the focal point. Firstly, organizing exhibitions on relevant topics such as the importance of education for sustainable futures or the dangers of overreliance on mining during the transition from the *Proyek Penguatan Profil Pelajar Pancasila (P5)* to the Merdeka Curriculum could be a viable option. Teachers can select topics and support the execution of these exhibitions, involving government agencies, stakeholders, tin mining operators, and productive-age adolescents who have not continued their education as invitees. Secondly, conducting mining tours tailored for teachers to deepen their understanding of mining's potential, impacts, sustainability, and assurances for the future of children in Bangka Belitung Province. This initiative aims to empower teachers with insights to restore their role not only as knowledge transmitters but also as career advisors and mentors for high school students, as well as to encourage high school students to continue their studies. Thirdly, strengthening the role of guidance counselors (BK teachers) as advisors for further study plans and career guidance for adolescents while they are still in school. Through the proposed strategies, this research aims to contribute to ongoing efforts to improve education quality and encourage higher education participation in mining areas, particularly in Bangka Belitung Province.

Keywords: Bangka Belitung; Mining areas; Teacher empowerment

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INTRODUCTION

Bangka Belitung is known for its natural wealth, particularly in the global-recognized tin mining industry (Sya'dian, 2015). However, behind the prosperity of this industry lies a serious issue affecting its sustainability and the well-being of its people. A significant corruption case, amounting to over 270 trillion recently, has shaken the mining sector, highlighting the economic vulnerability of this region to detrimental practices. This not only raises doubts about the integrity of its natural resource management but also underscores the need for Bangka Belitung to contemplate more diversified economic policies (Ilhamsyah et al., 2024).

One crucial aspect that needs to be considered is education. In facing global challenges and economic changes, investing in human resources is key to ensuring sustainable economic development. However, data from the Central Statistics Agency (Badan Pusat Statistik/BPS) shows that the Bangka Belitung Islands Province has consistently had the lowest Gross Enrollment Ratio (GER) for higher education in Indonesia over the past nine years (BPS, 2023). The disparity between the abundant natural wealth from tin mining and the low GER highlights a concerning issue.

The importance of economic diversification and increased investment in education becomes increasingly evident in this context. Natural resources are valuable assets, but over-reliance on a single economic sector can lead to significant vulnerability to market fluctuations and political uncertainties (Arezki et al., 2011). Bangka Belitung must move forward to explore opportunities in different economic sectors that can provide long-term stability and create more diverse employment opportunities.

However, to succeed in economic diversification, a strong educational foundation is imperative. Improving access to and the quality of higher education can help transform the economic landscape (Hernández et al., 2020), including for the Bangka Belitung Islands Province. This not only creates new opportunities for the younger generation to contribute across various economic sectors but also helps reduce social disparities and enhance social mobility. Additionally, it is crucial to strengthen supervision and regulation within the mining sector to prevent the recurrence of corruption cases in the future. Transparency and accountability are key to building trust in the sustainable management of natural resources (Adam & Fazekas, 2021). By addressing governance issues, Bangka Belitung can strengthen the foundation for sustainable and inclusive economic growth.

In facing this crucial transitional period, Bangka Belitung must consider not only economic issues but also education and governance. Education serves as the primary foundation for national development, with teachers playing a central role in ensuring quality education. Particularly in regions facing unique challenges like the Bangka Belitung Islands Province, the role of teachers becomes increasingly vital in maintaining educational standards.

This article aims to explore strategies that can strengthen the role of teachers in enhancing the quality of education in mining areas, with a specific focus on the Bangka Belitung Islands Province. While much research has been conducted on the environmental impact of mining industries and the educational needs in these areas, the urgent need for empowering teachers in mining regions remains underexplored in the literature. Empowering teachers is crucial as they serve not only as educators but also as

agents of social and economic change within their communities. By empowering teachers, the impact extends beyond immediate educational improvements to building a foundation for long-term sustainable development.

The Bangka Belitung Islands Province provides an intriguing backdrop for studying the role of teachers within the context of the mining industry. With its rich industrial history, the challenges and opportunities faced by educators in this region become more pronounced. Therefore, developing appropriate strategies to enhance the role of teachers in supporting quality education becomes increasingly urgent. Through this research, it is hoped that concrete strategies can be identified and implemented to improve the quality of education in the Bangka Belitung Islands Province, focusing on empowering teachers. Thus, this article not only provides new insights into the educational context of mining areas but also makes a meaningful contribution to the development of more effective and sustainable education policies.

METHOD

The research methodology employed in this study is qualitative, utilizing a literature review approach drawing from various scholarly sources, complemented by confirmatory in-depth interviews. The qualitative approach was chosen for its ability to provide a profound understanding of the researched phenomena (Muzari et al., 2022), especially in complex contexts such as the role of teachers in education within mining areas.

Firstly, the research will conduct a comprehensive literature review on relevant topics, including literature on education in mining areas, the role of teachers in such contexts, and empowerment strategies for teachers. The literature review will encompass academic journals, books, research reports, and other relevant sources to gain a comprehensive understanding of the issues under investigation. Four key articles will be analyzed in this research. Selection criteria for scholarly articles are based on relevance to the topic, indexing in the Scopus database (with the assistance of Publish or Perish/Pop application), and additional references accessible freely through Google Scholar.

Furthermore, this study will involve in-depth interviews with various stakeholders, particularly teachers in mining areas, specifically on Bangka Island, deemed relevant to address the research questions. A total of 10 elementary school teachers from various cities/districts on Bangka Island will be engaged. In-depth interviews are considered essential to gather diverse perspectives and deeper insights into the challenges, opportunities, and direct experiences of relevant informants.

Data obtained from the literature review and in-depth interviews will be thematically analyzed, identifying relationships among concepts emerging from the data. This thematic analysis aims to explore the role of teachers in education within mining areas and to develop empowerment strategies that can enhance the quality of education in the Bangka Belitung Islands Province.

RESULT AND DISCUSSION

Based on the literature review and interviews, three primary interventions have been identified as believed to enhance the quality of education, motivate adolescents to pursue higher education and provide better education regarding mining areas in this Province. These interventions are 1) Educational Exhibitions, 2) Mining Tours for Teachers, and 3)

Strengthening the Role of Guidance and Counseling Teachers. Empowering teachers by the implementation of the curriculum in Indonesia is the focal point of these interventions.

Education Exhibition through *Proyek Penguatan Profil Pelajar Pancasila (P5)*

Firstly, conducting exhibitions addressing urgent and relevant topics. Exhibitions serve as a form of learning that provides practical and interactive ways for students to explore and understand various subjects. Students can enjoy the planning and execution process of exhibitions, highlighting their autonomy and creativity. Exhibitions can facilitate and connect observation and research findings with real-world applications that foster connections between science and society. Participants often find benefits in showcasing the complexity of research and interacting with the public through interactive elements. Challenges in exhibitions may include time constraints in preparation and transitioning from planning to execution. Despite these challenges, students generally have a positive perception of the educational experience, indicating enhanced scientific communication skills and understanding of the research process (Donegan et al., 2022). Several examples of exhibitions used as learning tools have been discussed in previous research articles (Donegan et al., 2022; Hjelde, 2020).

In the context of this study, exhibition themes such as the importance of education for sustainable futures or the dangers of excessive dependence on mining are highly suitable as learning formats. Exhibition activities can be implemented with the support of the *Proyek Penguatan Profil Pelajar Pancasila (P5)*, which is part of the Merdeka Curriculum. Teachers can select topics and support the execution of these exhibitions, involving government agencies, stakeholders, tin mining operators, and productive-aged adolescents who have not continued their education as invitees.

Through online news searches, it has been found that many schools in the Bangka Belitung Islands Province across various levels have held exhibitions. However, none of the news reports indicate that these schools have addressed topics related to higher education or education about tin mining. Yet, both of these topics are considered highly relevant to provide insights to adolescents on the importance of higher education and their role in preventing exploitation in the mining sector.

Among these topics, education about tin mining stands out as particularly suitable for inclusion in exhibitions at various educational levels from elementary to high school. Based on interviews with ten elementary school teachers, it was revealed that education about tin mining has never been chosen as a theme for the P5 exhibitions. Most schools in the Bangka Belitung Islands Province tend to focus on exhibitions related to culture, traditions, and religious activities. However, the majority of interviewed teachers agree that education about tin mining is crucial because children should be educated about this topic early on, especially considering their involvement in the mining industry's environmental and economic contexts.

Nevertheless, despite the perceived importance of educating about tin mining through school exhibitions, not all stakeholders may support this initiative. Interviews also highlighted concerns among some teachers that this topic is sensitive due to its direct relevance to local communities. Some schools have a significant number of parents whose livelihoods depend on mining, including illegal or informal mining activities (known as TI, or Unconventional Mines). This situation could potentially lead to sensitivity among parents if the topic is openly addressed in school exhibitions, affecting the school's

relationship with these parent groups.

Furthermore, in academic information processing such as exhibitions or student project reports, obtaining valid data from official institutions managing such information is crucial. However, in the context of tin mining in the Bangka Belitung Islands Province, institutions managing mining data are not always cooperative in providing supporting data. This reluctance may stem from strict operational procedures and confidentiality in data management. As a result, accessing accurate information for educational purposes becomes challenging. Interviews with teachers as respondents indicated that difficulty in accessing this data poses a barrier to preparing accurate school assignments for their students.

These challenges can indeed be overcome. The best suggestion is to involve the government's role as a supporter of such beneficial activities (Hjelde, 2020). Collaborating with the government in the field of education, through rules, regulations, and recommendations for implementing initiatives like the P5 with topics on future education and tin mining education, is considered the sufficient foundation for educational institutions to freely promote education about tin mining across all school levels. If exhibitions on tin mining education are successful, it will open opportunities for adolescents to better understand their surroundings. Moreover, a deeper understanding of the potential and impacts of mining could motivate them to pursue higher education so they can take action and play a more significant role in the future (Donegan et al., 2022).

Mining Tours for Teachers

The second idea proposed in this research is to organize mining tours for teachers to witness the mining process firsthand from initial extraction underground, processing techniques, and marketing methods, to the benefits of mining outcomes for the region. These tours are designed and tailored for educators to deepen their understanding of the potential, impacts, sustainability, and prospects for children in the Bangka Belitung Islands Province. This initiative aims to empower teachers with insights to reclaim their role not only as knowledge conveyors but also as career advisors and mentors for high school students, encouraging them to pursue further studies.

The concept of these tours draws inspiration from an outstanding example in Ontario, Canada (Hymers et al., 2015). The Mining Teacher Tours is a professional development program for educators organized by the Canadian Ecology Centre (CEC). Over three years (2010–2012), approximately thirty Ontario teachers participated in a five-day program that included presentations by mining industry professionals, field visits to mines and manufacturing operations, and natural resource workshops. By 2013, the program expanded to include two tours annually. The goal of these tours is to equip teachers with the information and resources they need to become more proficient in teaching Earth Sciences to their students. The tours are free and sponsored by the Ontario Mining Association (OMA), the Canadian Institute of Mining, Metallurgy & Petroleum, Gateway and Sudbury branches, and EdGEO (Hymers et al., 2015). Through these tours, teachers can implement creative teaching approaches suitable for innovative methods like multidisciplinary learning (Xu et al., 2024).



Source: Hymers et al. (2015)

Image 1. The ambiance of mining excursions for educators in Ontario, Canada

In the tin mining areas of the Bangka Belitung Islands province, there has never been assistance in the form of mining awareness tours for teachers. Scholarships or educational grants provided by mining operators typically cover the costs of higher education for students and schoolchildren, as well as research funding. Such tours could significantly enhance teachers' insights and curriculum development when educating about the potential and impacts of mining. Moreover, teachers can provide a broader perspective on the choice of college programs available to adolescents, enabling them to play a greater role in the future development of their region through their education. This, indirectly, can also serve as motivation for students to pursue further education, potentially increasing the Gross Enrollment Rate (GER) of the Bangka Belitung Islands province in the future.

Challenges in organizing such tours focus on the commitment of organizers and the support of sponsors. The selection of teachers participating in the tours should be transparent and targeted, considering factors such as their teaching level, years of experience, and subjects taught. On the other hand, accountability measures for tour participants to develop their teaching materials in line with the information gained from the tours should also be monitored to ensure sustainable impacts (Hymers et al., 2015).

The Role of Guidance and Counselors Teachers

Finally, another important idea offered is to strengthen the role of Guidance and Counseling teachers (BK teachers) as primary advisors for adolescents in planning further studies and making career decisions in the future during their school years. BK teachers play a crucial role in providing personal and professional guidance, helping students understand educational and career options that align with their interests and potential (Keele et al., 2020). Enhancing their role is expected to improve students' readiness to face global challenges and optimize opportunities available in the educational context of mining regions such as the Bangka Belitung Islands Province.

BK teachers play a significant role in supporting students' further studies. They assist students in enhancing their resilience, which is beneficial for educational success. The role of BK teachers includes behavior modification, providing consistent instruction, and offering choices based on student interests. These actions help students build self-confidence, improve academic performance, and make informed decisions regarding their future studies. By fostering resilience and academic growth, counseling teachers contribute to preparing students for higher education and career opportunities (Azwar et al., 2021).

Mining regions often face unique challenges in education, such as high mobility,

varying family economic conditions, and complex social challenges (Ibrahim & Zitri, 2020). BK teachers can play a crucial role in helping students overcome these challenges by providing specific and relevant guidance. They not only assist students with personal issues but also serve as advisors for further study plans. They can help students determine educational paths that align with their interests, talents, and career goals, thereby directing them toward a more focused and successful future.

Career guidance is a vital part of education that is often overlooked in economically challenged regions like mining areas (Githiria & Onifade, 2020). BK teachers can provide information about various career options, required qualifications, and opportunities in both the mining sector and other sectors. This helps students prepare for entering the workforce or pursuing higher education. Additionally, it's important to empower the school community to support the role of BK teachers. This includes collaboration with parents, local stakeholders, and companies (such as mining companies) to create an environment that supports the full development of students' potential (Stefanski et al., 2016).

Specifically, effective strategies for Guidance and Counseling teachers to promote higher education for school students can be implemented through planned and sustainable approaches. Firstly, teachers can personalize their approach by conducting individual counseling sessions to identify students' interests, talents, and career goals. During these sessions, BK teachers can provide in-depth information about various higher education options, both domestically and internationally, as well as the required application processes and criteria.

Furthermore, BK teachers can facilitate group counseling activities or seminars aimed at providing a broader understanding of the benefits of higher education, including career opportunities accessible after graduation. In the context of mining regions like Bangka Belitung, they can highlight the connection between higher education and potential career development in the mining industry or other relevant sectors. Moreover, BK teachers can collaborate with local and national higher education institutions to organize campus visits, education exhibitions, or orientation programs that help students directly understand the academic environment and available facilities. This can motivate students by providing practical and direct experiences related to higher education.

Lastly, BK teachers can leverage information and communication technology by developing digital resources such as websites or education information portals that include application guidelines, scholarship information, and alumni testimonials. This not only facilitates access to information for students but also enhances transparency and accessibility to the higher education process.

CONCLUSION

The literature review and in-depth interviews have indicated that three main interventions to improve the quality of education in the Bangka Belitung Islands Province are Education Exhibitions, Mining Tours for Teachers, and Strengthening the Role of Guidance and Counseling Teachers. Education Exhibitions provide interactive learning experiences for students by exploring topics such as the importance of higher education and the impact of mining, which can be presented attractively through exhibitions. Mining Tours for Teachers aim to deepen teachers' understanding of the mining industry while

Strengthening the Role of Guidance and Counseling Teachers support students in planning their future by providing personal and professional career guidance. The implementation of these three interventions requires support from the education community and government to create a supportive learning environment that inspires students to pursue higher education and understand the importance of environmental awareness in mining areas.

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