

Small-Scale Mining and Academic Performance of Ghanaian Students at the Basic Level

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Abstract

The mining sector has been growing steadily in Ghana but its effect on economic development and inclusive growth remains uncertain. Small-scale mining, for instance, has become popular as a panacea for poverty reduction in most developing countries including Ghana. However, how small-scale mining activities influence students' academic performance and education, in general, remains tentative. By employing a qualitative research design, the study aimed to assess the effects of small-scale mining activities on students at Kwabeng township, one of the small-scale mining hubs in Ghana. Through non-participant observation, interviews and focus group discussions techniques, data gathered from respondents revealed that small-scale mining activities stress students and disallow them from excelling in school. Lack of attention in class, low attendance to school, lateness to school, absenteeism, and school dropout were major challenges that constrained the academic performance of students in the Kwabeng township. The study, therefore, recommends a collaborative effort of all educational stakeholders—government, non-governmental organizations, parents, students, and private individuals, in addressing this menace in the study area.

Keywords

Small-Scale Mining, Academic Performance, Students, Public Schools, Kwabeng

1. Introduction

The mining sector has been growing for many years, but its impact on the edu-

cational sector remains unclear (Ahlerup, Baskaran, & Bigsten, 2020). The sector positively influences economic development and inhabitants' well-being by creating employment, higher wages, generation of government revenue and appreciation of local currency (Hilson, 2016). Nevertheless, other empirical studies argue that mineral resources may be a curse rather than a blessing for developing countries (Ahlerup, Baskaran, & Bigsten, 2020). This is because corruption, political instability, societal unrest and volatility in revenues are associated with the existence of minerals, but such evidence has mixed conclusions. Cross-country evidence on the human capital mechanism is mixed (Blanco & Grier, 2012). While Ofori, Dittmann, Sarpong, & Botchie (2020) revealed that small-scale mining activities in mineral-rich countries in Africa reduce education attainment and learning, (Hanushek & Woessmann, 2011) find positive effects on academic attainment in some African countries, and in others the situation remains unclear.

At the sub-national level, empirical evidence shows that large-scale mining consistently drives education spending and school attendance in mining areas (Mejía, 2020). However, most of the gold mining in most African economies takes place in small-scale and illegal sites where poverty is persistent and there is still little evidence of the effect of mining on human capital in such contexts. In their global report on artisanal and small-scale mining, Hentschel, Hruschka and Priester (2002) reveal the effects of mining activities on employment and income levels of people but fail to look at the aspect of students who engage in the mining activities and the effects on their academic performance, which mainly propels them for their educational career achievement. Consequently, there is a need to assess the impact of mining on academic performance in developing countries such as Ghana. This area has thus become imperative but remains a niche in the literature.

Education leads to personal prosperity related to society's perception (Shust, et al., 2022), but most of the youth, especially the school-going age group, are always bent on indulging in any livelihood activity for quick and heavy money. That is, although education to a large extent provides sustainable livelihoods for many people, especially the youth, these categories of people have frequently involved themselves in small-scale mining activities at the expense of their education. Although some students pay their school fees through illegal mining activities alongside their education, their performance in school remains questionable. The huge number of illegal miners is just a sign of the scale of unemployment in the country and that students are the exception to be engaged in mining activities, but this is not the case in Ghana, especially at Kwabeng where the Xtra Mining Company is located, and hence small-scale mining activities are prevalence. Thus, at the onset of the company's operation, the people of Kwabeng township including students are engaged in this mining occupation and have gained a lot of wealth. However, it has had incredible effects on both the environment and the academic performance of students.

Extant research, however, has covered the effects of small-scale mining activi-

ties on the environment (Chipatu, 2011; Brooks, 2011; Ruud, Reed, & Smith, 2008; Bruneforth, 2006) with little attention paid to the same activities on education, which plays a pivotal role in sustainable development and career achievement. The ultimate question, therefore, remains: how does small-scale mining influence the academic performance of students? This study, therefore, seeks to assess the effects of mining activities on students' academic performance in Ghana using Kwabeng as a case study. It focuses on Ghana because of the huge number of illegal miners in the region coupled with increasing child labour and educational activities, especially at the basic level. The study also focuses on education because education leads to sustainable development in the country and even beyond, and career achievement amongst the youth of today and the future. This study makes a significant contribution to the literature by providing evidence on how mining affects the academic performance of students in Ghanaian basic schools and suggesting measures to empower students to engage in education other than mining activities to embrace their educational level. The remainder of the studies is as follows: the second section presents the literature review and conceptual framework while the third section displays the study context and methodology. Finally, the fourth section discusses the findings, and the last part provides a conclusion for further studies.

2. Literature and Conceptual Framework

Mining and School Performance

There have been research attempts to resolve almost similar issues related to this study (Ulrike, Franken, Liedtke, & Siever, 2012; Chipatu, 2011; Ruud, Reed, & Smith, 2008; Boadi, 2001; Hilson, 2001). Nevertheless, these studies have not explained the dominant issue about schools and their environment. Some of these studies focused on school culture, teachers blamed for not putting much effort, school program outline and the sustainable lives of people in the community (Amankwah & Sackey, 2003; Hentschel, Hruschka, & Priester, 2002). In the previous research, the gap depends on the fact that they did not reflect the effects it has on the academic performance of students.

Mining activities in America have positive effects on the communities, redistribution of the population to highly underdeveloped parts and increase earnings and hence the high standard of living with a limited reliance rate with honoured tax obligations by individuals (Hilson, 2010). In furtherance, Morgan postulates that miners can sponsor their wards to attain higher education. Although Morgan's revelation emphasizes the miners' interest in the gains to educate their wards (personal interest), he did not cover the academic performance of students who engage in the mining activities since their parents are already involved in the act. A child will have an interest in mining based on the output. This draws the child's attention from education. International Labour Organization carried out case study research on "*Social and labour issues in small-scale mines*" which aimed to find poverty-drivability of small-scale mining operated in

rural and remote areas. The researcher pointed out opportunities for small-scale mining activities for individuals and how that reduces the poverty rate in the local communities. Even though the researcher emphasized small-scale mining providing job opportunities and reducing poverty but did not focus on the effects on students who engage in small-scale mining activities. This study clearly shows the actual causes of small-scale mining and its effects on students' academic performance.

Small-scale mining influences students' academic performance. [Boadi \(2001\)](#) in his research work on "*small scale mining in Human Traditional Area*" reported that the illiteracy rate has increased due to students sacrificing their education for small-scale mining which is noticed as a very profitable and also control of economic prosperity in life. The assumption that engaging in small-scale mining can easily and quickly enable people to acquire wealth in life has triggered students to have their attention off education resulting to high absenteeism, and school dropouts in the mining areas. [Boadi \(2001\)](#) concluded by calling for collaboration efforts of educational authorities and parents in solving these problems. In the study of assessing the effects of small-scale gold mining activities on students' academic performance in some communities, it was noted that large-scale gold mining has enhanced the locality and its economy by serving as an employment opportunity. Mining activities thus create employment opportunities for many people, including the school-going age group, and bring income to cater for both home and school expenses. Small-scale mining, for instance, produces an opportunity to increase employment or reduce unemployment situations in many countries ([Hilson, 2001](#); [Hentschel, Hruschka, & Priester, 2002](#)).

Small-scale mining activities can improve the socio-economic lives of people ([Hilson, 2002](#); [Jacobs & Gerson, 2004](#)). [Amankwah and Sackey \(2003\)](#) have also indicated that the extraction of precious minerals such as gold and diamond has led to a magnificent impact on the socio-economic lives of people and communities directly or indirectly involved in mining activities. The aim of earning income to have a better living in the community in a way encourages most students in the mining communities to engage in such activities without considering the impact that the mining activities will have on their academic performance. Meanwhile, extant studies indicate that the involvement of the student in small-scale mining activities influences the academic performance of students and educational activities in general ([Bruneforth, 2006](#); [Jacobs & Gerson, 2004](#)). The results of [Bruneforth \(2006\)](#) study emphasized school dropout as the cause of mining activities and educational level decrease because students have much interest in money earned in mining activities compared to the benefits of education. This study supported [Jacobs and Gerson \(2004\)](#) assertion that school dropout has far-reaching consequences on the students and society at large. School dropout is the outcome that happens to students who engage in mining activities because access to wealth truly enhances a negative impact on the student's aca-

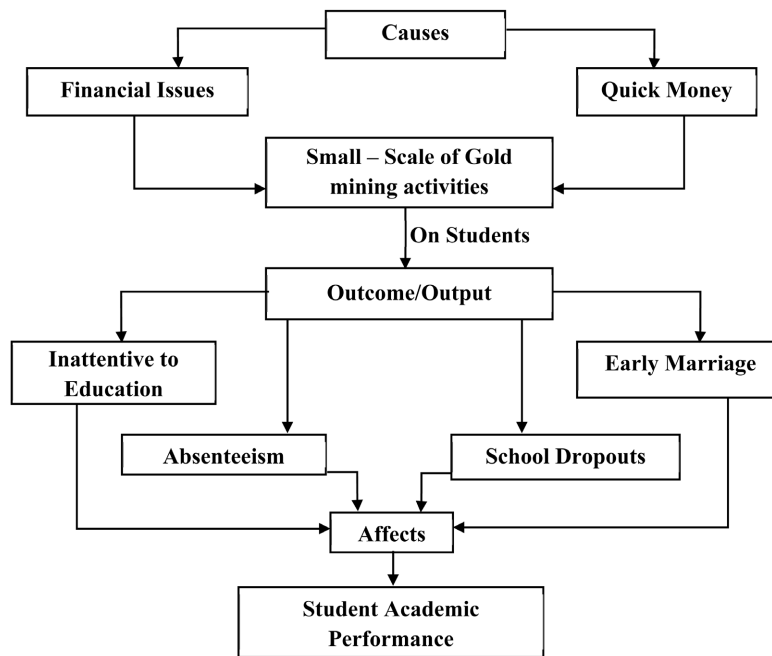
demic performance.

Ruud, Reed and Smith (2008) presented a dissertation on the effects of the environment on students' attitudes towards education and learning. In their study, a longitudinal survey design was engaged, and their core aim was to find out how infrastructure development affects students' attitudes to education. Largely, evaluation after their surveying was very positive, they showed that there is a good deal of evidence to indicate students' attitudes had become positive after the move of students into the new school building. They also pointed out that the main cause of negative attitudes towards school was the economic state of the community. The results of this study prove that students exchange education for mining activities because of quick financial and economic benefits. The current research is however different from the previous research; it is not only focused on the social environmental factors but also covers economic factors of the selected social environment. The previous research aimed at circulatory the use of different physical attractions to help learn experiences, but this current research wants to indicate the impacts that a specific factor in the environment can have positively or negatively on students' academic performance. Also, instead of a single-method approach, this current research uses a mixed-method design which in one way or another holds all the research methods and is therefore capable of improving the effectiveness of the findings.

Academic performance of students and small-scale gold mining are the two main facts which were studied. The dependent facts are the academic performance and the small-scale mining is the independent fact. The conceptual framework for the study illustrates the causes and the effects of small-scale gold mining on student academic performance (**Figure 1**). Due to their interest in quick money, students in education ignore being in school and instead engage in small-scale gold mining activities. Engaging in mining activities is caused by the economic status of families and communities. This also leads to school dropouts, absenteeism, early marriage and child labour.

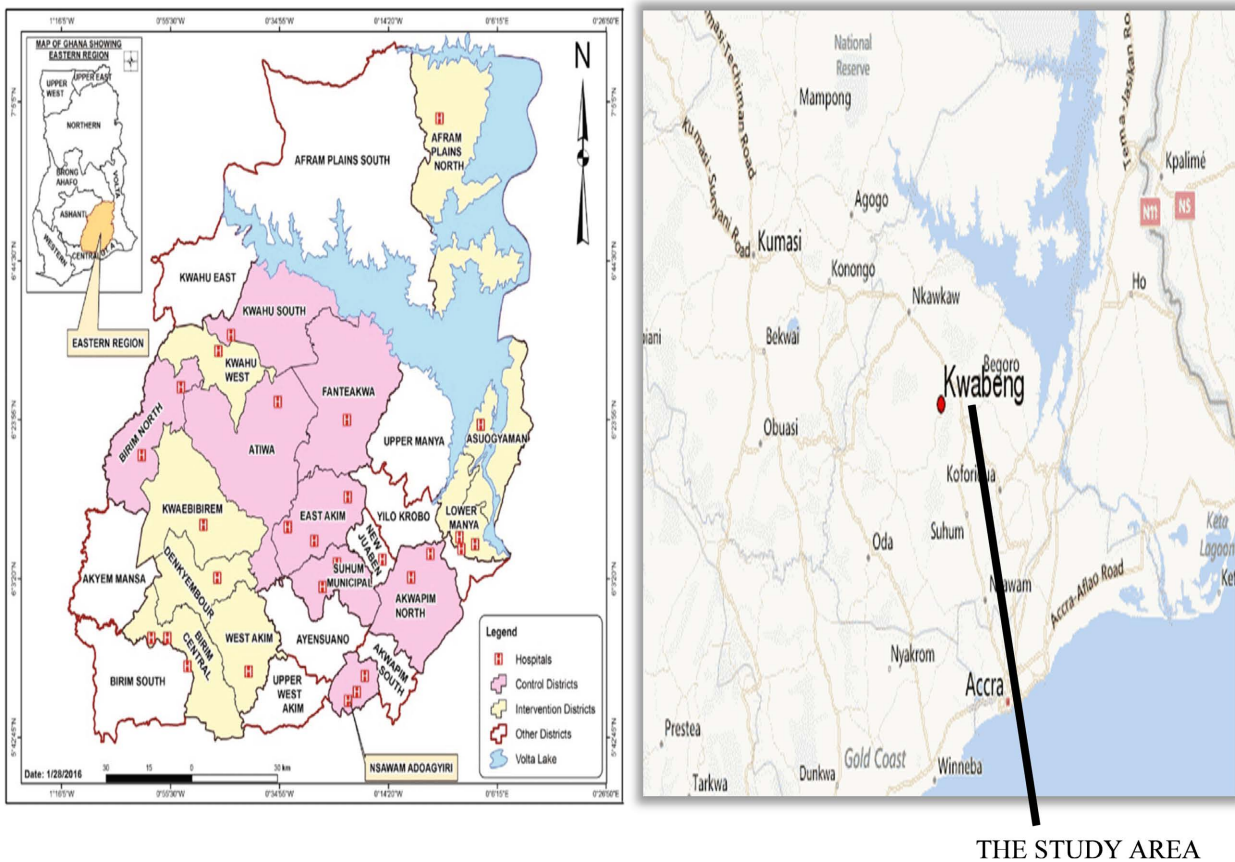
3. The Study Context and Methodology

The study was conducted at Kwabeng where the majority of the active populace including students are critically involved in mining activities, perhaps due to the location and operations of the Xtra Mining Company. Geographically, the Atiwa-West District whose status was granted in 2004 by Legislative Instrument 1784 lies between longitudes 0.3°W and 0.5°E and latitudes 6°10'N and 6°30'N, and covers a total area of 656 km². It shares boundaries with Kwahu West Municipal and Kwahu South District to the north; Kwaebiberim Municipal to the south, Fantekwa South District to the north-east, East-Akim Municipal to the south-east; and Birim North District to the west (see **Figure 2**). The strategic position of the district provides many economic opportunities for both the residents and outsiders. The major economic livelihoods of the people are farming and age processing though, today, small-scale mining activities have become



Source: Authors' construct.

Figure 1. Pictorial presentation of conceptual framework.



Source: Districts maps of Ghana.

Figure 2. Map of the eastern region showing the district area.

popular attracting many people into the district. The district has a population of 61,219 comprising 31,288 males and 29,931 females (GSS, 2021).

To enable ease gathering of data within the available period and environment (Polelo & Molefo, 2006), the study made use of 76 respondents comprising 50 students, 2 head teachers, 4 Teachers, 8 Parents, 4 Community members, and 8 Small-scale miners who were all purposively selected because of either their direct involvement in the small-scale mining activities or in-depth knowledge on the impact of the activities on students' academic performance. A qualitative research approach with a case study design was employed in the study (Creswell, 2009). Through non-participant observation, interviews and focus group discussions (FGD) techniques, we gathered the data from the respondents with the help of structured interview and FGD guides.

We used the interview to discover the situations around the school including the background of the respondents, school history, number of students in the school, aspects that affect academic performance and best options required to enhance a great student's academic performance. Two different FGDs were conducted to gather relevant information from the head teachers, small-scale gold miners, community members and parents. Appropriate questions were asked to gather the necessary data for this study. We had a scheduled period with printed question guides to smooth FGDs. Answers from respondents were recorded and kept for evidence and accessibility. Finally, visitations were made to school premises and the small-scale mining arena to observe what actually happens in these environments. This helped us to have a fair idea about the operations of mining activities and to also ascertain the situation and accordingly the factors that affect the student's academic performance. In the process, suitable time was used for the respondents to equip themselves to provide a good response in their capability and this enhanced the entire activities.

4. Findings and Discussion

The results gathered from the thoughts of the various respondents were used as a representation of the Kwabeng township and for the analysis.

4.1. Univariate Analysis

The univariate analysis presents the demographic information of the respondents in terms of gender, age, educational attainment, and occupation (see **Table 1**).

The information gathered signifies that 32 out of the total of 76 respondents were females representing 42% and 44 males representing 58% involved in this study. Regarding age, 62% of the respondents were between the ages of 12 and 18 years, and are mostly students. 13% of the respondents who are also mostly students were between the ages of 19 and 25 years while 14% of the respondents fall between the ages of 26 to 30 years. 11% of the respondents were over 30 years old. With regards to the school enrollment of the small-scale miners, it was

Table 1. Demographic statistics.

	Head teacher	Teachers	Small-scale miners	Community members	Parents	Students	Total	Percentage
Gender								
Male	2	2	6	2	2	30	44	58%
Female	0	2	2	2	6	20	32	42%
Age								
12- 18 yrs	0	0	3	0	0	44	47	62%
19 - 25 yrs	0	0	2	0	2	6	10	13%
26 - 30 yrs	1	4	3	1	2	0	11	14%
31+	1	0	0	3	4	0	8	11%

Source: Field survey, 2022.

revealed that 42% of the respondents were attending school, 25% had never attended school, 33% were school dropouts and 17% were tertiary students who were working to further their education. Data gathered to ascertain the economic livelihood of the people concerning their poverty level and high expectation of job creation about the education status and the ongoing small-scale mining activities in the Kwabeng township also prove that financial as well as socio-status of the environment keenly influence students' academic performance. Although farming is the major occupation in the study area, by observation it was clear that most of the residents have abandoned farming activities for small-scale mining activities with the youth ranking high. This was confirmed during the FGDs when a man indicated that *the source of income pushes the youth (both schooling and Non-schooling) to indulge in the mining activities based on their experiences*. This proves that the main job of Kwabeng township to earn early money today has principally been mining activities.

4.2. Factors Leading to Small-Scale Gold Mining

In exploring the factors that influence the actions and inactions of students in the Kwabeng township towards small-scale gold mining activities and hence their academic performance, it was revealed that besides poverty which is the ultimate reason for students' engagement in small-scale gold mining activities (42%), the surrounding environment in which the school is situated is also critical. Thus, wealthy people are respected in the community and most of them became rich through small-scale gold mining activities, hence people see these activities as the only quick way to become rich in the study area and not education. In ascertaining the students' perceptions of engaging in small-scale gold mining activities over attendance to school in the Kwabeng township, different reasons were provided for their choice of mining operations during the interviews. Many explained that education is a long term venture for getting rich in the community because after completion one must strive for stable employment for a better

living outlined by the people. Almost all the respondents confirm that small-scale gold mining offered quick money needed to make their lives better in the future than school (education). A student indicated:

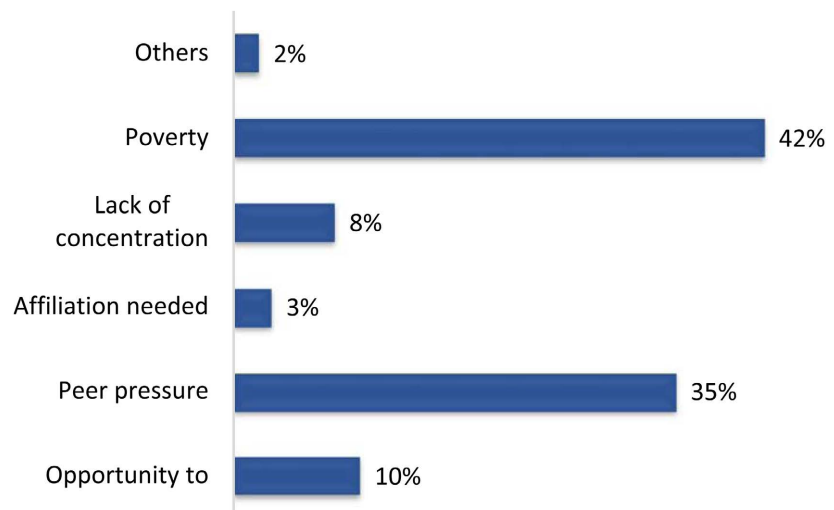
“I always have to beg and receive provision from my brothers who fully engaged in small-scale mining activities in the town..... I am also strong enough to engage in the same venture for more money for living and even to cater for myself” (male, interview, 2022)

It can be deduced that financial issues and a quick money mindset have largely led most students in the Kwabeng township to be involved in small-scale gold mining operations which eventually have repercussions on their formal education. Thus, the students always put a high premium on mining activities at the expense of education. This finding corroborates [Ruud, Reed and Smith's \(2008\)](#) disposition that because of quick financial and economic benefits many youths normally exchange education for mining activities.

Additionally, it was uncovered that sometimes pressure from peers and family pushes some of the students into small-scale mining activities (35%). Whereas some stated they lost their parents at an early stage and so they provide for themselves all the needed materials for schooling, others mentioned they contribute to the support of their family income to cater for food and shelter. Some of the students during the interview declared that their peers are breadwinners in their families and therefore doing what it takes to sustain their lives, such as indulging in small-scale gold mining activities, is imperative. A student lamented: *“Due to peer pressure, inability to sustain livelihood and also support the family economically has led me into the small-scale mining activities which undoubtedly affecting my academic performance in school”*.

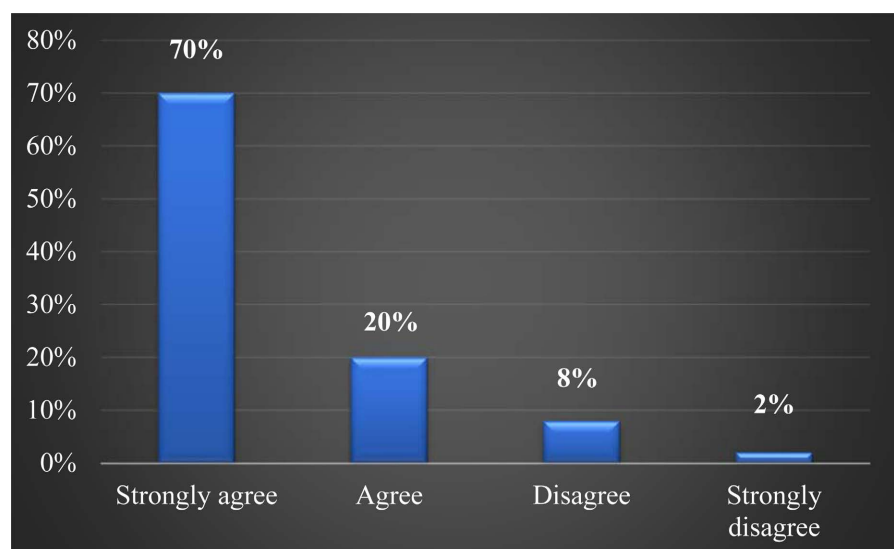
Some parents also confirm that they allow their wards to engage in small-scale mining activities to help provide food and other needed things for the family. This proves that parents have complications in providing for the student's school needs due to financial constraints or poverty to be specific (see [Figure 3](#)). A good number of the students believed that small-scale mining is a great and profitable venture to engage though they admitted that it is a somehow risky venture and has an influence on their academic performance and their education as a whole. This illustration proves that school dropouts end up in child labour in the study area. These findings agree with the opinions of [Hilson \(2002\)](#) who held that poverty is the most vital reason for children to engage in mining activities.

To find out the extent to which these small-scale mining activities have influenced education in the study area, as many as 90% of the respondents agreed that the small-scale mining activities have had negative effects on the academic performance of students and education in general with only 10% have the opposite thought (see [Figure 4](#)). This revelation links with [Hart's \(1927\)](#) study on the social interpretation of education and [Rudd et al. \(2008\)](#) survey on the psychology of learning environment which establish that students' involvement in mining activities disrupts their academic performance in school and hence influences their



Source: Field Survey, 2022.

Figure 3. Factors leading to small-scale mining activities.



Source: Field survey, 2022.

Figure 4. Extent to which small-scale mining have impacted education.

education negatively.

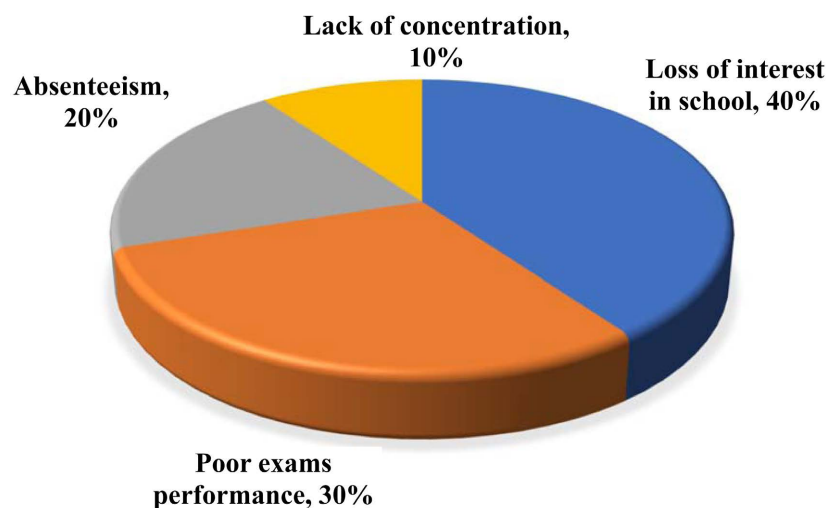
Small-scale mining is noticed, to an extent, a number one agent that affects the academic performance of most students who engage in it. Therefore, we critically assessed the views of the respondents on the basis and how continuously the mining activities influence education in the study area. It was noticed that those students in the small-scale mining activities work assiduously to be paid heavily and this affects them both physically and psychologically by respectively losing some strength as youth and memory as students. It was revealed that most of them do not normally attend school and those who attend also report late because they do not close early from their work sites. Some students indicated they get divided attention in class because they are too excited about the money they

get from the mining activities as young as they are. In effect, the attitudes of students toward education change when they get themselves involved in small-scale mining activities and this might thwart children's schooling and educational development in general. It was found that the small-scale gold mining activities in the Kwabeng township highly affect the academic performance of students in diverse ways (see **Figure 5**).

5. Conclusion

The study assesses the effects of small-scale gold mining on the academic performance of students of Kwabeng township. Thus, it was conducted to ascertain why students engage in small-scale mining activities; how the small-scale mining activities influence students' academic performance; and the extent to which the small-scale mining activities have impacted education in the Kwabeng township. It was revealed that most of the youth in Kwabeng choose schooling as a secondary option over mining activities. It was found that peer or family pressure and poverty mainly attract most of the youth including students into the small-scale mining in Kwabeng township. Thus, the low standard living of the people triggers students' engagement in small-scale mining activities, being the only source of income, to support their family needs, provision for school needs, and to further their education. The small-scale mining activities have stressed students and disallowed them from excelling in school. Lack of attention in class, low attendance to school, lateness to school, absenteeism, and school dropout were identified as major challenges that constrained the academic performance of students in the Kwabeng township. Tellingly, students hardly get time for their books and instead, they always have a thought of money which affects their academic competencies in school.

Surprisingly, to improve the financial status and raise the standard of living of families in Kwabeng, some parents motivate their children of school-going age



Source: Field survey, 2022.

Figure 5. Effects of small-scale mining on academic performance of students.

to engage in small-scale mining activities to the detriment of their education. We therefore recommend a collaborative effort of all stakeholders—government, non-governmental organizations, opinion leaders, parents, students, teachers and private individuals to address this menace in the study area. For instance, the government through the District Assembly and Education directorate as well as non-government organizations should provide the community members including opinion leaders, parents and students with training and educational awareness campaigns on the negative effects of small-scale mining activities on academic performance and education in general. Also, a monitoring team should be set up to supervise institutions with children and environmental factors making sure that the laws on scale small-scale mining activities are accordingly enforced.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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