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SOCIAL SCIENCE AND EDUCATION | RESEARCH ARTICLE

Teaching Mathematics for Social Justice: The Challenges and the Prospects in The Ghanaian Senior High Schools

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Abstract: The study aimed to explore the prospects and challenges of teaching mathematics for social justice at Ghanaian Senior High Schools. A non-random sample of seven (7) respondents, including two experienced mathematics educators and five Senior High School students, were interviewed and analysed quantitatively using thematic analysis. The analysis revealed seven themes: individual differences, students' mathematics interests, participatory lessons, extracurriculars, non-interactive teaching, technology use and cultural diversity. These thematic findings are related to technical, practical, and emancipatory knowledge constituent interests in schools and Ghanaian social, cultural, and historical settings. A teacher should utilise egalitarian pedagogy so that the students will gain practical and emancipatory skills.

Keywords: Ethnomathematics, Social Justice, Critical Pedagogy, Critical Thinking, Problem-Solving Skills.

1. Introduction

Culture generally offers a context of multiple layers of competing variables of meaning, language use, sense, and interpretation (Alangui, 2017). Propriety in language use is a conscious choice of the right register within competing meanings and interpretations (Adoniou & Qing, 2014). An appropriate register is consistent with maintaining and promoting social cohesion, peaceful cohabitation, and harmony. Proper training, experience, education, communicative competence, and cultural awareness are required to facilitate consciousness and successful navigation through competing variables within the sociocultural norms (Meeran & Van Wyk, 2022). A perfect application of sociocultural communication norms promotes social cohesion, peace, and tranquillity in interpersonal communication in our homes, workplaces, and other social encounters. In volatile situations, appropriate language use can effectively avoid acrimony, chaos, and conflict, reinstate peace and tranquillity, promote national development, and boost productivity.

The Rise of Anthropological Theory, cultural materialism by Marvin Harris embraces three anthropological schools of thought: cultural evolution, cultural materialism, and cultural ecology (Moran, 2018, 2020). cultural materialism, which emerged as an expansion of Marxism materialism, explains cultural similarities and differences and models for cultural change within the framework of society consist of three distinct levels: structure, superstructure, and infrastructure. Cultural materialism promotes the idea that infrastructure, which consists of material realities such as technological, economic, and reproductive (demographic) factors, mold and influence the other two aspects of culture. The "structure" sector of culture consists of organisational aspects of culture, including domestic and kinship systems and political economy. In contrast, the superstructure also consists of ideological and symbolic aspects of society, such as religion (Cai & Wang, 2010). Therefore, cultural materialists believe that technological and economic aspects play the primary role in shaping a society. Cultural materialism aims to understand the effects of technological, economic, and demographic factors on moulding societal structure and superstructure through strictly scientific methods.



Ethnomathematics is the study of how cultures calculate (Alangui, 2017). Humans invented mathematics to help them solve problems. Unfortunately, most educational mathematics lacks context and history, rendering it useless to many students (Meaney et al., 2021a). Even though the syllabus prescribes that mathematics be taught in context (MOE, CRDD, 2010), there is much emphasis on Greek and European mathematics while ignoring indigenous knowledge; students require comprehensive, integrated units of study. Albanese (2021) defines ethnomathematics as the study of the relationship between culture and mathematics. This is the kind of mathematics practised among specific cultural groups. Ethnomathematics aims to foster both the understanding of culture and the understanding of mathematics in a way that can lead to an appreciation of the two (Meaney et al., 2021b). Researchers who believe in ethnomathematics and mathematics education believe it is crucial to acknowledge the cultural context of mathematics by teaching culturally based mathematics that students can relate to (Rosa, 2020; Rosa et al., 2016). For a mathematics education to affect the political and social dynamics of culture, mathematics teaching should be based on cultural relevance and personal experiences that can help the learners know more about reality, culture, society, and themselves.

The two most pressing challenges in our world are ethnic diversity and environmental degradation (Joo, 2021). Ethnomathematics has the impetus to equip the learners with innovative strategies to deal with environmental issues and imbibe in them democratic principles like patriotism, loyalty, and tolerance. As a middle-income state, Ghana lags in terms of physical, economic, and social development. However, it is believed that humans were created with equal opportunities (Hunter & Rackley, 2022). However, individuals or a country can best improve their conditions if they believe in their social-cultural norms and values. Ethnomathematics is the kind of mathematics that can enlighten the learners about the country's values, principles, history, and cultural dynamics for accelerated development. The secret behind the success of some nations like the US, UK, China, and Finland, among others, is their contextual mathematics education (Brashier et al., 2014; Kepner, 1974).

Mathematics has been recognised internationally as a viable tool for national development (Rizqika & Shofyan, 2021). In the United States, for instance, the failure of the new math curriculum was linked to the nation being in crisis (Peak, 1973), and urgent steps were needed to reform mathematics education to save the nation from imminent fall. Various international institutions like the Program for International Student Assessment (PISA), Organization for Economic Cooperation and Development (OECD), and Trends in International Mathematics and Science Study (TIMSS) have been instrumental in reshaping the kind of mathematics students learn across countries worldwide to foster economic emancipation, global peace, and political stability (Japelj Pavesic et al., 2022).

Several researchers have proposed different pedagogies to enhance effective mathematics teaching and learning at the pre-tertiary level. For instance, the critical pedagogy (Freire, 2015; Giroux, 2010) mathematics for social justice (Stinson et al., 2012), Pedagogy of the oppressed (Apple, 2011; Giroux, 2010), Realistic mathematics education (Barnes, 2005; Troffers, 1993) Problem-solving approach (Superman et al., 2021; TURGUT, 2021) and many more. These mathematical learning strategies promote process skills such as inquiry, problem-based, critical thinking, and problem-solving skills. All these skills are developed through contextualised mathematics instructional delivery. One such theory that supports this kind of learning is constructivist learning, whereby the learner is the determiner of what should be thought (Bada & Olusegun, 2015; Majiwa et al., 2020). This implies that the learner is the driver of the instructional processes. The teacher is only a coach, a facilitator, or a curator of learning as students actively construct their knowledge based on their background knowledge and experiences (Belbase et al., 2022). It is believed that learning can only occur when the new material is linked to what students already know. This highlights the importance of culture in learning mathematics.

Studies have confirmed cultural background as a provident tool for teaching and learning mathematics (Amoako Atta & Asiedu-Addo, 2021; Cai & Wang, 2010; Ltd, 2020; Smith-Maddox, 1998). It is instructive to note that countries that use their local language to teach mathematics usually perform better than those that use a second language to teach mathematics (Papers OECD Library; Mullis & Martin, 2017; Zou, 2019). Students are made to view mathematics as an aspect of culture

responsible for national development rather than as some incompressible facts needed to be committed to memory (Abdulrahim & Orosco, 2020). Mereku (2010) reminds us of a conference of ministers of education in Africa who were put together to revitalise and restructure the inherited colonial mathematics curriculum to suit the African culture and the subsequent hiring of local publishers to produce the New Mathematics for Primary Schools (NMPS), Modern Mathematics for Elementary Schools, Book 1 to Book 8, West African School Mathematics, usually referred to as AWAM; for Middle Forms 3 and 4 to make the school mathematics look more Ghanaian. Studies have revealed that mathematics is best taught using hands-on and mind-on approaches that make learners view it as fun and adopt it as a culture (Baah-Duodu et al., 2020). Ghana is a middle-income economy and a beacon of democracy in Africa; however, the country has not been visible on the international scene regarding mathematics achievements (Mills & Mereku, 2016). There is a need for critical pedagogy that can liberate the learners from the shackles of mental slavery and promote social justice.

Teaching mathematics for social justice (TMfSJ) derives from the concept that all children should have access to rich, rigorous mathematics that provides them with the opportunity and self-empowerment to understand and use mathematics in their reality (Stinson et al., 2012). Several variables must be considered while teaching mathematics for social justice. These include teachers teaching mathematics with a social justice lens or teaching students how to utilise mathematics to confront social injustices (Apple, 2011; Freire, 2015). TMJ must address unfairness in society and inequity in mathematics, mathematics classes, and schools. Teaching mathematics for social justice needs more than examining crucial social issues and addressing injustices through mathematics and mathematics itself. Using relevant cultural contexts and having students submit their questions about complex equity topics does not result in student empowerment (Ayoub Mahmoudi et al., 2014; Stinson et al., 2012). As significant as the circumstances themselves, the classroom culture facilitated understanding such contexts. Various studies in this literature review have highlighted the significance of pedagogical practices and a classroom culture that promotes opportunities for equal participation if education becomes the practice of freedom through which people learn how to take part in the transformation of their world (Freire, 2020). Teachers and students must co-create classrooms and rely on reciprocity to rectify power imbalances in student-teacher relationships. Reflection and collaboration were essential to accomplishing this goal.

The teaching of mathematics for social justice provides teachers with several difficulties. This includes fears that an emphasis on social and political topics will supplant the study of rich, rigorous mathematics. In addition, some teachers believe TMfSJ to be risky since having children think critically and challenge current power structures could be interpreted as challenging an authority inside the school system (Chang & Cochran-Smith, 2022). Time posed additional obstacles for teachers, including the time required for lesson planning and incorporating social justice into lesson delivery and mathematical curriculum coverage. Despite these obstacles, research indicates that TMfSJ can lead to increased academic success for diverse learners while addressing cultural competency and increasing critical consciousness if teachers receive the proper support. In his work, the principle of multiple intelligences (H. Gardner, 2010) observed that following paper and pen tests alone to determine who is intelligent, as in the Intelligent Quotient test, is not the best. Since mathematics could be taught in a way, they will bring ingenuity to the learners. The school curriculum must consider the students who might not necessarily excel in mathematics but can do well linguistically, musically, and dramatically or maybe have excellent interpersonal relationships (Gardner, 1987; Gardner, 2011). All these are part of the Eight multiple interlinkages unearthed by Gardner. The ability of mathematics teachers to link school mathematics to this intelligence would help develop the learner's three Hs (head, Hand, Heart). In this modern era, many school dropouts succeed in life, even more, the those who excel academically (Yidana et al., 2022). Suppose school mathematics is taught in a way that will develop individual talents. In that case, those with bodily-kinesthetic, musical, and linguistic intelligence will stay in school, progress academically, and become more self-sufficient and responsible in society.

A social justice approach works to transform school mathematics from a gatekeeper to a gateway, democratising participation and maximising education advancement that should equitably benefit all children rather than a select few. A social justice instruction commitment to mathematics education

projects mathematics as a dynamic, political, historical, relational, and cultural subject (Bautista et al., 2020). Identity and power play dominant roles in this engagement. Identity as a mathematics learner is dynamic, negotiated, and complex (Abdulrahim & Orosco, 2020). A social justice approach in mathematics education encourages teachers to deepen their professional knowledge base and instructional practice with mathematics and social justice as a dual focus (Chang & Cochran-Smith, 2022). An increased understanding of mathematical content knowledge is vital yet insufficient for 21st-century mathematics teaching. However, as mathematics educators, there is a need for ongoing research-based professional learning that focuses on the sociopolitical turn of mathematics education and mathematical pedagogies that are equitable and culturally responsive (Alangui, 2017; Meaney et al., 2021b; Rosa et al., 2016). Studies continue to show that equitable practices combined with high expectations, high-quality content, and strong community relationships have a positive effect on mathematics learning and achievement (Ltd, 2020)

Developing positive cultural and social identities requires grounding mathematics instruction in students' languages, cultures, and communities while equipping them with the mathematical skills necessary to flourish in the dominant society (Parker et al., 2017). Reading the mathematical word, academic performance, and influencing students' (and teachers') mathematics orientation is the mathematics educational goals of Gutstein (2006) cited in (Gutstein, 2012). Mathematical power is characterised as deducing mathematical generalisations, devising inventive problem-solving ways, and understanding mathematics as a tool for social critique (Bartell, 2011). Traditional academic achievement entails passing standardised examinations, graduating high school, excelling in college, and enrolling in advanced math courses (if they so choose). Changing students' (and teachers') attitudes toward mathematics requires seeing it as an analytical tool for comprehending complicated, real-world phenomena (Andaman & Tan, 2018; Berger et al., 2020). Deficit views of historically marginalised children, their families, and communities because of race, class, language, and culture persist in educational conversations and research (Beal et al., 2010; Shin, 2021). In mathematics education, this deficit thinking happens in at least two ways. First is the continuous labelling of children's readiness to learn mathematics via standardised tests and other institutional tools that position and sanction specific forms of mathematics knowledge. Creating meaningful and relevant experiences for students in mathematics is essential. When students are provided opportunities to pose questions relevant to their lives, contest injustices, and challenge how the world is shaped, the actual utility of mathematics becomes visible, and students are active parts of the solution (Bush & Cook, 2019).

Interestingly most of the studies in the field of mathematics are focused on mathematics interest and achievement in tests. Little is done about mathematics skills that will propel and liberate the learner from oppression. This current study seeks to investigate how school mathematics is being done to promote leadership qualities, loyalty, resilience, and democratic values in addition to critical thinking and problem-solving skills. This way, the individual learner is not oppressed under the stress of the formal school assessment (written tests). However, he or she is developed physically, emotionally, and socially, hence the need for this study.

2. Research Method and Materials

The study was based on a qualitative research approach. Qualitative research is an approach to exploring and understanding the meaning individuals or groups ascribe to a social or human problem. Data collection and analysis in qualitative studies do not involve numbers or calculations; only words are used to describe the phenomenon (Gani et al., 2020; Queirós et al., 2017). This study was nonexperimental. (Johnson, 2001; Kothari, 2017). Two Mathematics educationists and Five Senior High school students were purposefully selected from the Bekwai Municipality. A semi-structured interview was used in gathering data based on the interview guide. The questions asked were about social justice in mathematics classes. Classroom equity, learning opportunities, student treatment, and mathematics support. Interviews were recorded to aid analysis and interpretation.

2.1. Ethics, quality



Data-gathering involves informed consent, voluntary involvement, the option to withdraw, no harm to participants, and participant confidentiality (De Costa et al., 2019). The study's goal and volunteers' rights were explained. They were told they might quit the research if they were uncomfortable. Credibility, transferability, dependability, and conformity were used to ensure the data's trustworthiness (Frambach et al., 2013). The researcher supplied interview transcripts to confirm participation.

2.2. Population and Sample

Since the study was on finding the influence of mathematics learning experience at the primary school on the individual's higher education, there was the need to purposefully select an individual who has specific skills to match that criteria (Etikan et al., 2016). Based on the Narrative study design, one person was interviewed to get in-depth knowledge about the topic and gather data to answer the research questions (Creswell & Clark, 2017; Crowe et al., 2011). The Respondent selected to be interviewed was the best option among the ten participants initially identified. The researcher initially identified Ten people but upon some inquiry about their educational background and carrier choice one person stood out in terms having coherent and consistent flow of mathematics in his resume. He obviously was the best choice since the main concern was to find out how mathematics learning at the Basic school plays into one's choice of program and career in life.

2.3. Data-interview analysis

Professional transcribers were hired to aid in the coding and transcribing the interview tapes. The themes generated expressed participants' ideas on social justice in mathematics classrooms and consolidated literature-supported issues. Layered coding helped localise findings and reduce researcher bias (Frambach et al., 2013). Individual differences, Students' mathematics interests, Participatory lessons, Extracurriculars, Non-interactive teaching, Technology use and Culture Diversity were the themes that emerged through data analysis. The interviews were conducted in both Akan and English but were later translated, analysed, and interpreted in English. Interview fragments formed participant narratives. For anonymity's sake, the actual names of the respondents were not used. However, pseudonyms have been generated (Hoft, 2021; Vorhölter, 2021). For the mathematics educationist (Pablo and Santo) and the students (Okodie and Rozy, both females and Joe, Ken and Sethoo, all males.

3. Results and Discussion

The two educationists are both retired. Pablo was a mathematics teacher at the Senior High School (SHS). He was the Head of the Department (HOD) for Mathematics for ten years and became Assistant Headmaster for five years until he retired in February 2022. Santo taught Maths at both Junior High and Senior High Schools. He moved to the College of Education to teach Maths after earning his MPhil in Mathematics Education and retired in July 2022. Okojie is a form two Home Economics Student at the SHS. Rozy is a General Arts student at SHS Form Three. Joe is a Form two science student and a leading member of their school's National Maths and Science Quiz (NMSQ) team. Ken is a Visual Arts student at SHS three.

3.1. Culture Diversity

Culture comprises ethnicity, language, origin, and daily practices. Changing traditional mathematics instruction to multicultural ways is difficult. Both respondents agreed that TMFSJ in Cultural heterogeneity is difficult since cultural diversity affects emotions. Culture affects students' actions. "When the teacher is familiar with the cultural background of the students, it goes well, especially when one culture dominates" (Interview, September 28, 2022). Pablo said, "Students dominate based on religion and culture." Cultural background affects how teachers interact with students. Some teachers like it when one set of students dominates another. Culturally relevant pedagogy uses students' prior knowledge to teach math (Alangui, 2017). White (2021) believes

teachers should use culturally responsive teaching strategies to improve students' math skills. Social justice in math courses seems to be challenged by student diversity. Students have cultural, economic, social, geographical, academic, and non-academic backgrounds. Student culture, language, and history are different.

3.2. Individual Differences

From the responses of Pablo and Santo, it is evident that individual differences exist in the classrooms.

Each class has diverse cultural, economic, social, and geographical backgrounds. They are multilingual. Students' backgrounds were a concern for integrating social justice into math instruction. Some students have high cognition rates, varied retention rates and diverse opinions from various individual entering behaviours (Pablo). Santo revealed that Some are quiet, and others are passive. Some students irritate their classmates; teachers, therefore, need to allow all of them to practice and provide an equal and conducive atmosphere for the students to learn (Interview, October 2022).

The participant's narrative focuses on teasing, diversity, and student habits. These ideas characterise Maths classrooms with poor social fairness. If they are passive, disruptive, or teasing, diverse children may have classroom management issues. These signs imply that the classroom is not using socially appropriate pedagogy or that the teacher is not balancing activities, learning, and reflections. Connecting arithmetic, for instance, to real-life situations is a problem contextualising math based on students' experience and prior knowledge.

The traditional mathematics classroom approaches normally do not engage students in critical thinking and establish a community of learners for change and progress; there was a lack of critical pedagogy (Freire, 1970) as cited in (Apple, 2011). (Brahier et al., 2014) believes a mathematics classroom should stimulate interaction, idea-sharing, and problem-solving. Teachers may require a social justice lens to teach arithmetic. Teachers should build on students' original cultures and languages. Students have cultural, economic, social, geographical, and linguistic origins. Due to this diversity, the same thing may have numerous meanings depending on their history and language, making it challenging to maintain social justice in the classroom. In Ghana, social and cultural background best predicts mathematics and academic abilities (NaCCA, 2019).

3.3. Students' Mathematics Interest

On student mathematics interest, all five respondents (students) indicated that they become highly elated when they are involved in discussions.

I do not like answering questions in class, but if I can answer one correctly, I become delighted, especially when I can explain my answer to my colleagues (Okojie).

Studies have indicated that apart from academic achievement, mathematics anxiety has a negative impact on quality of life. Indicators of math anxiety in daily life include being frequently confused while shopping, taking the change without counting most of the time, being unable to perform mathematical calculations while being observed in public, worrying about calculating time, and avoiding mathematical discussions (Berger et al., 2020; Hashim et al., 2021). This condition of anxiousness might result in forgetfulness and a loss of self-confidence. Self-efficacy is an individual's confidence in his or her ability to attain the desired degree of learning and behaviour (Ahmed et al., 2022). Self-efficacy boosts interest, and student mathematics interest predicts academic success (Arthur, 2019; Hashim et al., 2021). Realistic individual interests can support an emerging one, and managing their aspirations are hard to nurture, which may promote classroom injustice.

3.4. Participatory Lessons



When quizzed on participatory lessons, the five students had this to say;

I have conditioned my mind to think that mathematics is complicated. I would not say I like maths, and a teacher once told me that I need to struggle if I want to excel in maths, which put fear in me. I manage to pass anyway but usually do not perform well. The only time I enjoy maths is when the class is interactive, and more especially when I can contribute to class discussions (Okojie)

Rozy, on her part, indicated that she enjoys mathematics lessons when they are involved in discussions and other activities. Sometimes we are given a task in a group, and we do it and present it to the class. Maths has become so practical, very easy and enjoyable.

When I came to Form One, I was shy, I did not like answering questions in class, but with time I have overcome that; my Maths teachers always try to make us talk in class. His lessons are practical; we give many examples from our day-to-day activities. I did not know Maths was so close to us. I enjoy it, and my performance has also picked up (Sethoo).

I am not good at memorising formulas, but my teacher tries to let us derive the formulas that I do not forget, and it helps, sometimes I can solve specific problems that I have not met before; not all teachers have those skills to make Maths so practical that made me hate Maths but now I have realised that Maths is with us, almost everything we do there is mathematics application in it (Ken).

My Maths teacher wastes much time explaining issues, he makes Maths look simply, but it looks boring to me. I need the formulas to work faster, I always learn ahead, and when I come to class, it is like I do not get enough; there is too much talking; my mates argue and argue about simple things, and we solve a few problems. The other classes are always ahead of us (Joe)

Mathematics is a practical subject that requires student engagement. Engaged learning is underestimated. The curriculum must be altered based on student expectations, culture, and political context to enhance inclusion and access to high-quality mathematics and teaching. Using a variety of teaching strategies and pedagogical strategies can accommodate the diversity of students' learning styles and developmental stages and enhance the development of all-encompassing and transferable mathematical skills (Arthur, 2019).

3.5. Extracurriculars

Regarding extra curricula, what a student does at home mostly depends on their background.

I remember when I was young, I wanted to study Maths at home, but many household chores do not permit me to do my assignments, let alone my private studies. My parents were in the village, and I moved to town to stay with a close relative during secondary school days; my parents could not afford Boarding (Santo)

Pablo said students' interests vary based on their backgrounds and goals. Some students prefer reading to Maths. Their homes and hobbies impede socially just Maths instruction. Interests affect social equity in the math classroom. Some students dislike Maths. (Interview, October 28 October 28, 2022). On the part of the students, Okodie Rozy and Ken indicated that they do not usually study Maths at their leisure. However, Seth and Joe work Maths on their own most of the time.

I am a science student, and Maths is essential to me. I always try to work ahead of the class. I am a border; I use the library when school is in session, and during vacation, I have a marker Bord home. My father always makes sure I learn, so he provides for me (Joe)

3.6. Non-Interactive Teaching

Traditional mathematics instruction may hinder social justice. Some teachers teach Maths aloud while using a marker; some cannot offer different homework to their many students. Conventional teaching does not allow students to do multiple tasks. Social justice challenges are typical classroom routines (Interview, October 2022). Some of the issues have to do with time constraints, the curriculum is packed, and teachers want to catch up so the students can pass exams. The final exam is an external examination; teachers have no control and are primarily mechanical. It does not take into consideration student emotions, attitudes, and values. It also came up that large class size is a challenge to TMfSJ and a breed of teacher-centred teaching. Large classes prevent teachers from focusing on each student's learning and participation. Participants said that large class size does not encourage practical activities to promote equity, access, and critical thinking. The traditional lecture methods prevent teachers from engaging students in active learning and student-centred social justice teaching. Socially equitable mathematics teaching-learning is student-centred, interactive, and question-based. Teachers cannot quickly adopt a participatory approach due to classroom difficulties (Moscardini, 2014). Conventional Maths education emphasises getting the correct answer and remembering facts and procedures, leaving students unprepared for creative problem-solving, thereby putting the students under oppression. Non-participatory teaching hinders classroom social fairness since it is not learner friendly.

3.7. Technology use

Technology-savvy teachers are needed. Insufficient math skills are another issue. Technology is difficult for all teachers. Teachers need training in new technology despite mastering most applications, videos, and tools. Some Maths teachers are not prepared to use technology, say participants. It is unclear whether teachers are willing to learn new technical tools and seek school and government support. It also raises the question of how well teachers know new technological tools to promote math learning in and out of the classroom. Technology in the classroom promotes impartiality. Maths education requires digital technologies. Technology-based math instruction may appeal to many youngsters. COVID-19 has teachers using ICT to teach math during lockdowns and school closures. In Ghanaian classrooms, technology issues in mathematics teaching and learning as a social justice obstacle due to limited access to the internet and other digital devices. It, therefore, boils down to access, time, support, resources, and training are extrinsic challenges (interview, October 2022)

3.8. Discussion

It is worth noting that individual differences exist in mathematics classrooms, and teachers must adapt their lessons across the classes to suit the needs of the students. A strategy that will work best in Home Economics class may not work in Science or Arts class. In terms of socio-economic background and cultural background, what seems funny may vary, and what seems to be the best example may be abhorred in another jurisdiction. It is, therefore, imperative for teachers to adapt their lessons to individual needs since there is no one-size fit approach to teaching mathematics for social justice. More studies have proven that putting the learner at the centre of learning always yields the best results. Researchers have recommended that mathematics teachers be aware of the history and culture of the learners to use more practical and realistic examples in their lessons. Even though it is not easy, as indicated by Pablo,

When I was the HOD, I realised that most of my teachers found it challenging to construct their examples to suit their learner's needs. They mostly use textbook questions, you know, the textbook is national, and its problems are not culturally specific. Therefore, non-routine questions generated by the teachers will help build learners' imaginative and creative skills as well as communication skills, yea (Pablo)

4. Conclusion



The study's seven themes and interpretations highlight the benefits of social justice in mathematics classrooms and how teachers face obstacles in teaching, learning, and student performance. It offers ideas for altering curricula and fostering social justice in the classroom. The study illustrates how classroom procedures can be used elsewhere. It has also shown how high school mathematics teachers view social justice and classroom issues. All study themes have pedagogical relevance. The two are diverse kids; disengaging pedagogy is even more important for teaching and learning arithmetic through promoting socially just classroom practices. Equal, fair, and equitable have broader meanings. Because these notions are more prominent and influential socially, politically, and culturally, teachers have less control over them. Different student interests, a high number of students, non-participatory teaching, and insufficient technology abilities are related to pedagogy within teachers' duties and obligations to promote socially just classroom practices. These thematic findings are related to technical, practical, and emancipatory knowledge constituent interests (Habermas, 1971) in schools and Ghanaian social, cultural, and historical settings. A teacher should utilise egalitarian pedagogy so that the students will gain practical and emancipatory skills.

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