



Research Article

Out-of-Field Teaching in Ghanaian Basic Schools: A Matrix of Basic School Teachers' Experiences in Ekumfi District

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Abstract: Globally, the problem of out-of-field teaching persists despite the frantic efforts of policymakers to ensure that qualified teachers are placed in classrooms to teach subjects and grade levels for which they were trained. Though statistics on the phenomenon remain scanty in Ghana, available evidence indicates that it accounts for the poor performance of students in the Basic Education Certificate Examination (BECE), especially in rural areas. This study, therefore, explored the experiences of out-of-field teachers in the basic schools in the Ekumfi District. Using the multiple case-study designs, nine teachers were sampled for the study. Both interview guide and observation schedules were used for data collection, where data collected from the respondents were analyzed thematically. The study revealed that teachers found themselves teaching out-of-field due to policy directives at the school level but not of their own volition. Therefore, most of them have not adjusted well to the demands of the classroom. They, therefore, struggle to prepare appropriate lesson notes, conduct assessments, and effectively manage their classrooms. The study concludes that students' performance in the rural parts of Ghana is likely to continue to decrease if policies that may limit its influence in the classroom are not pursued. Therefore, the study recommends that the Ministry of Education and its subsidiary agencies, such as the Ghana Education Service, develop a policy framework to guide the recruitment and deployment of teachers.

Keywords: out-of-field teaching, experienced teachers, qualitative, contextual, novice teachers

1. Introduction

Teachers are deemed central in preparing students to acquire the sophisticated skills required to contribute to a knowledge-based economy in the 21st century (Rizwan & Khan, 2015). As a result, teacher quality has often been described as one of the most significant variables in curriculum implementation (Hightower et al., 2011). In the implementation of curriculum, teacher quality has been identified as the variable with the most significant impact on student's achievement among all educational factors and resources (Goldhaber & Anthony, 2003). To this end, teacher quality has become a topical issue across nations (Singh et al., 2021). Even though teachers are deemed central in the quest to improve the educational gains of learners, most educational systems throughout the world continue to grapple with the problem of ensuring that their classrooms have adequately qualified teachers (Ingersoll, 2006). However, Bonney et al. (2015) report that there has been a shortfall in the quality of teachers in various schools across the world.

As a result, most well-qualified and well-trained teachers often find themselves teaching subjects and grade levels they are not familiar with (Du Plessis, 2005). A situation that has often been termed as out-of-field teaching.

Out-of-field teaching has been described as an act of teaching where teachers are required to teach subjects that they have not been formally trained to teach in their teacher-training institutions as either a major or a minor (Ingersoll & Gruber, 1996). Similarly, Du Plessis et al. (2014) defined out-of-field teaching as “teachers who are assigned to teach subjects and grade levels when they are unsuitably qualified to do so” (p. 90). In furtherance of this position, Masters (2015) maintained that out-of-field teaching occurs when teachers discover that they are teaching subjects or courses they have not been trained in at the University or College of education for at least one semester and have not completed a pedagogy-related course for the subject in question. Arguably, out-of-field teaching refers to teachers teaching specializations or subjects they have no qualifications or background to teach (Weldon, 2016). Such teachers are often labeled in international literature as “untrained” (Loveys, 2011), “unqualified” (Silva, 2010), or “non-specialist” (Caldis, 2017). In Ghanaian parlance, such teachers are commonly referred to as “class managers”.

The problem of out-of-field teaching occurs in public and private schools throughout the world (Du Plessis, 2005). In Ghana and other African countries such as Nigeria, the phenomenon in private schools is attributed to managerial decisions, while its occurrence in public schools is ascribed to recruitment procedures (Aina, 2016). However, out-of-field teachers are often considered as ‘short-term’ solutions to the problem of teacher shortage. In most instances, such teachers become accustomed to the field they were expected to enter for the short term. Extant literature has shown, however, that the problem of out-of-field teaching mainly results from the undersupply of appropriately specialized teachers to schools resulting from a shortage of teachers in that area of specialization and the growth in learner enrolment (Luft et al., 2020; Sheppard et al., 2020). Even though research remains inconclusive on the subject matter, Hobbs and Törner (2019) indicate that the status of the teaching profession within a particular geographic terrain can render the undersupply of teachers, thereby creating the problem of out-of-field teaching within schools. Impliedly, there is the likelihood that most teachers in Ghana might be out-of-field in the classroom due to the low status or low recognition accorded the teaching profession. Fullan (2003) posits that even curricular changes and school reforms can engineer the problem of out-of-field teaching.

Out-of-field teaching has gained global attention for a long time, with various studies providing data on the prevalence and magnitude of the phenomenon. For example, in the United States of America, it appears that the phenomenon of out-of-field teaching predates the 21st century. Ingersoll and Gruber (1996) revealed that between 1990 and 1991 approximately 20% of students of English were taught by an out-of-field teacher. Again an out-of-field teacher taught 25% Mathematics. Also, an out-of-field teacher taught 30% of the students Social Studies while an out-of-field teacher taught 17% Science. Further analysis of the report from the National Teacher and Principal Survey (NTPS) by Shah et al. (2019) revealed that from 2003 to 2016 the proportion of out-of-field teachers teaching science-oriented subjects such as Chemistry and Physics had increased exponentially. In the United Kingdom, the situation is not different. The British Department of Education (2011) report revealed that about thirty percent of teachers teaching subjects such as Geography, Mathematics, or Physics had not attained the needed qualification to teach these subjects. Törner (2014) reports that in Germany, 80% of teachers who offer lessons in Mathematics have never taken any course or received professional training in the subject. In Slovakia, the Organization for Economic Cooperation and Development (OECD) (2005) reports that 25% of Basic Classes, 30% of Lower Secondary Classes, and 30% of Vocational Classes were taught by teachers who have no teaching credentials or were taught out of a field or had already attained the official retirement age. Ní Ríordáin and Hannigan (2011) found that 48% of post-primary teachers teaching mathematics in Ireland are not qualified.

In Australia, earlier studies (McConney & Price, 2009) affirm that 123 teachers from a sample of 529 found themselves out of their field due to teacher shortage in some disciplines. To further show how the problem of out-of-field teaching is escalating in Australia, the Australian Education Union (2009) reports that 31% of all Australian schools have out-of-field teachers teaching diverse subjects. The same report reveals that 58.9% of senior high schools in Australia have programmes taught by out-of-field teachers, with the majority (28.2%) of the teachers teaching Mathematics, followed by Technology (25.5%) and ICT (23.6%). A later study (Dinham, 2016) suggests that 30% of all Mathematics classes and 25% of all Science classes were taught by an out-of-field teacher. In Africa, the story is not substantially different. For example, available statistics show that seventy-three percent of inexperienced teachers are put in remote schools and often find themselves in out-of-field positions where they have limited access to

opportunities for professional development (Du Plessis, 2005). Silva (2010) found that 39% of general science teachers were unsuitably qualified to teach Science in recent times. The dearth of literature on the subject matter in sub-Saharan Africa in general and specifically Ghana does not mean it does not exist. Umoinyang et al. (2011) mention that the phenomenon of out-of-field teaching remains the least recognized problem in African educational systems. They stress that educators and policymakers have been aware of the phenomenon of out-of-field teaching for a long time. However, the availability of accurate statistics has kept the problem largely unrecognized.

Research reports that the problem of out-of-field teaching often results in teachers' lack of content knowledge (Lee & Luft, 2008), lack of pedagogical content knowledge (Schueler et al., 2015) and ineffectiveness of plan lessons (Chan & Yung, 2018). Other challenges include a lack of understanding of issues relating to the curriculum content structure, big ideas and relationships between ideas, how to spin coherent conceptual narratives, and resiliency and adaptability to the school culture (Hobbs & Törner, 2019). These challenges affect the teachers' self-esteem, self-identity, and personal well-being (Hobbs, 2012a; Mathews et al., 2006). These adverse effects often lead to a decrease in students' candidature for some subjects, poor teacher practices in the classroom and teacher attrition (Caldis, 2017). Wushishi et al. (2014) reports that the Ghana Education Service loses about 33, 185 teachers to teacher attrition due to factors including out-of-field teaching. This, as a matter of concern, necessitated the study.

The theoretical base of this study is the sociocultural theory of cognitive development (Vygotsky, 1978). This theory operates on the premise that learning is a social construct. Consequently, the social context in which individuals find themselves impacts their cognitive make-up. Therefore, the classrooms, the social, cultural, and historical milieu where teachers find themselves affect their cognitive development in the classroom (Johnson, 2009). Vygotsky (1978) rightly indicates that the mental functioning of every individual is socially distributed. As a theoretical lens for this study, it is argued that the teachers who find themselves in the position of out-of-field are social organisms. It is, therefore, argued that from their historical associations in the institutions of learning, they may have garnered enough experiences that may inure them to their teaching experiences in the classrooms. Again, the environment and the school context may influence the experiences of the out-of-field teachers. Invariably, though the teachers are out of the field they were trained to teach, their positions and associations in the school may aid in developing skills and competencies to be used in teaching the new field they find themselves in. Therefore, the teachers' experience as viewed in this framework is an accumulation of the experiences they have gathered from the associations from their training institutions to the school environment they find themselves. Under their social acquaintances in the school and another social world, the out-of-field teachers can perfect their classroom practices such as writing lesson notes, managing classrooms, and conducting assessments. However, the question remains as to whether these experiences eventually will make them sufficient for the school and classroom practices.

2. Statement of the problem

A report from the Chief Examiners on student's performance in Basic Education Certificate Examinations (BECE) in Ghana has not been encouraging, especially for schools in rural areas (West Africa Examination Council, 2018; 2019; 2020). In the Ekumfi District, most schools scored as low as zero percent (Ghana Education Service, 2018; 2019; 2020). This situation is attributed mainly to the inability of schools in remote parts of the country to attract and retain highly qualified teachers in areas where they are needed most (Haycock, 2001). The refusal of teachers to accept postings to teach in less affluent areas and the subsequent shortage of qualified teachers to teach in village schools have often forced headteachers in public schools to place teachers in subject areas they have not been trained in (Cobbold, 2015). Besides, the paradigm shifts in curriculum innovation in Ghanaian primary school enterprises in 2017, from the objective-based model to the standard-based approach, are likely to render most teachers out-of-field (Sheshea, 2017).

In July 2019, the researcher happened to be part of the facilitators dispatched to train teachers at the regional level to implement the new standard-based curriculum. During the workshop, he made cursory observations of the participants and was perplexed to realize from the observation that most teachers have received little or no training in various subjects taught at the primary level. Upon further conversation with these teachers, they did indicate that they were struggling to meet the demands of the facilitators because they have been teaching out-of-field. Most of these teachers were pleading to change the subjects they were teaching to areas they had been trained. Whilst studies (Ingersoll

& Curran, 2004; Du Plessis, 2005; 2013) abound internationally on the phenomenon of out-of-field teaching, it appears, however, that there is a dearth of information on the subject in Ghana. Besides, most of the studies on the phenomenon of out-of-field teaching on the global stage did not consider the teachers' experiences. Meanwhile, these experiences may push the teachers to attrite from the teaching profession. Invariably, contextual and methodological gaps need to be filled in the quest to deal with the phenomenon holistically. It is the quest to fill these identified gaps that necessitated the study.

3. Research questions

The study seeks to address the following research questions:

1. How do basic school teachers in the Ekumfi district of Ghana describe their experiences as out-of-field teachers?
2. How does out-of-field teaching affect the classroom practices of basic school teachers in the Ekumfi district?

4. Methodology

The study was designed and implemented from a qualitative case study research orientation (Yin, 2003). This study, therefore, employed the multiple case study approach to explore the experiences of out-of-field teachers in the Ekumfi district in the central region of Ghana. This design was considered appropriate for the study. It enabled the researchers to explore the phenomenon of out-of-field teaching using the teachers' experiences through detailed and in-depth data collected from multiple sources (Creswell, 2012). As indicated by Denzin and Lincoln (2017), the adoption of the multiple case study approach is well justified as it enabled the researcher to seek both "what is common" and "what is particular about the cases" (p. 438).

The context of the three cases that were studied included novice teachers (0-12 months), semi-experienced teachers (1-4years), and experienced teachers (more than 4 years). It is assumed that when teachers are recruited by the Ghana Education Service (GES), it takes between 6 months and 1 year to get accustomed to the contextual and cultural dimensions of the new environment. In this regard, these teachers are labeled as novices in this study. However, for the teachers to be promoted to the next level in their job specifications, they need to spend 4 years. Once the teachers are promoted, they become experienced. Between the 1st year and the 4th year before they are promoted, these teachers are semi-experienced. The decision to classify the teachers into three different categories was to help understand how the issue of out-of-field teaching plays out in different contexts. Nine out-of-field teachers made up of 3 teachers from each context were purposively sampled (Klassen et al., 2012).

The entire study was conducted within three months. Interviews and observations for data collection were used (for example, how did you become an out-of-field teacher?). The out-of-field teachers were interviewed twice with an average duration of 30 minutes per interview, focusing on their experiences in the school and classroom as out-of-field practitioners. Classroom observations were used to triangulate the interview data (Creswell, 2011). The researcher's interest was to unearth how their position as out-of-field teachers impacted their class practices such as lesson planning, assessment, student motivation, lesson delivery, and classroom management. The data collection methods yielded audio recordings, field notes, and documents from students' worksheets. All teachers interviewed opted to use English, the official language used at the primary level in Ghanaian primary schools. Anonymity and confidentiality were ensured by representing participants with pseudonyms. The original names of the participants were replaced with names such as Rahman, Larbi, Bentil and others that are very common in Ghanaian naming culture. Member checking to test findings and interpretations (Lincoln & Guba, 1985) was also done. The data analysis adopted the framework for analyzing qualitative data proposed by Braun & Clarke (2006). This was accomplished by first transcribing the data, reviewing it over and over again, and jotting down initial thoughts. Second, noteworthy aspects of the data were coded systematically across the full data set, resulting in a collection of data relevant to each code. Third, codes were grouped into probable themes, and all data related to each theme was gathered. Fourth, the themes were reviewed. Fifth, these themes are defined and renamed. The final part of the analysis entailed selecting vivid, compelling extract examples, final analysis of selected extracts, linking the analysis back to the research question and literature, and writing the analysis report.

5. Findings

5.1 Experiences of Ekumfi district basic school teachers as out-of-field teachers

It was observed from the teachers' views that they found themselves teaching subjects and levels in which they had little or no training. Interestingly, these teachers have received training in other disciplines, but other teachers had already occupied the levels and disciplines they were trained to teach with similar qualifications. Hence, they were assigned levels and disciplines in which they had not been trained to teach as indicated in the following statements from the interview with the teachers.

"I attended the Polytechnic, I did Hospitality Management, but when I came to this school, the headteacher assigned me to teach Science" (Akwasi, a Science teacher at Mponua Basic School).

From Akwasi's submission, his academic orientation was not in sync with the grade level and the subject he was made to teach.

"I studied General Programme at the Training College. I, however, find myself in this school teaching History even though I have not studied history before" (Bentil, a history teacher at Akroyesum L/A Basic School).

What Bentil studied in school is at variance with the subject he teaches.

"On my part, I majored in French at the Training College, but I teach all subjects in basic three because we run the classroom teacher system in the school" (Manfred, a General Class teacher at Adantam, M/A Basic School).

It is evident from Manfred's remark that the subject he teaches deviates from the subject he studied at the College of Education.

"I teach Ghanaian Language in this school even though I studied English at the university" (Essandoh, a Ghanaian Language teacher at Dzinpa Presby Basic A School).

It is seen from Essandoh's position that he is also teaching a subject he has not been trained to teach.

"I teach Mathematics even though my major at the Training College was Agriculture Science" (Larbi, a Mathematics teacher at Akroyesum L/A Junior High School).

Another teacher in a similar situation said:

"I teach Our World, Our People even though I was trained to teach Mathematics" (Asabea, Our World, Our People teacher at Ansaful L/A Primary School).

Larbi's and Asabea's assertions imply that they teach subjects that they have not been trained to teach. From these statements, Akwasi and other teachers have shown that they indeed find themselves teaching various subjects and levels that they have not been trained to teach. Interestingly, the view of Akwasi shows that he is not even qualified to teach at the primary level. Polytechnics were established explicitly in Ghana to equip students with the knowledge and technical know-how to work in the industries. Indeed, a document analysis of the appointment letters possessed by the participants involved in this study confirmed that they had been placed within classrooms and grade levels that do not match the disciplines they were trained to teach. Therefore, finding people like Akwasi and others with such qualifications at the basic level of the Ghanaian educational system raises questions about the recruitment drive of the Ghana Education Service. Besides, the assumption that every teacher with background knowledge in languages can teach any Language discipline also means that many Language teachers are being made to teach other languages that differ from the structure, rules, syntax, and forms relative to their specialty. Such a practice would hamper the teaching and learning of subjects related to language. Given these responses, the study further explored how the teachers found themselves out-of-field. One of the teachers said:

"When I was posted to this school, the appointment letter did not state the subject that I have to teach. It was the headmaster who asked me to teach Ghanaian Language instead of French because there is already a French teacher in the school" (Essandoh, a Ghanaian Language teacher at Dzinpa Presby Basic A School).

It is evident from the views of Essandoh that it was the headteacher who determined the subject he had to teach and not the appointment letter from the appointing authorities at the Ministry of Education. In support of this position, another teacher concurred:

"My appointment letter did not state emphatically the level and subject I was to teach in this school. The headteacher asked me to teach History instead of the General Classroom teacher whom I was trained to be. The story would have maybe been different if my appointment letter stated the specific subject I was coming to

do in this school” (Bentil, a teacher at Akroyesum L/A Basic School).

Another teacher also intimated:

“I was initially posted to the Junior High level as a Science teacher. However, there was no vacancy for Science since the level already had two science teachers. As a result, the headmaster asked me to come and teach English at the primary level else, there was no vacancy for me in this school” (Kwame, an English Language teacher at Mponponso Basic School).

From Kwame’s submission, it is evident that the headteachers have the powers to reassign teachers the initial subjects teachers have been trained to teach are overstuffed. It, however, becomes more worrying when teachers have to be reassigned to teach grade levels they have not been trained to teach. One teacher who was reassigned from the basic to the junior high school also had this to say:

“I was specifically posted to this school as a General Class teacher for the basic level. All the classes from basic one to six were full when I came. The headteacher directed me to come and teach Ghanaian Language at the Junior High School. Even though I had received some training in the discipline, it was just meant for the primary school level” (Afram, a Ghanaian Language teacher at Mpataase Islamic Junior High School).

The expression from Afram presupposes that she lacks the knowledge and school to teach at the level she has been assigned. Arguably, such a practice is likely to impede the quality of teaching and learning at the basic schools in the country. Another teacher who has been in the school for more than 15 years had this to say:

“When I came to this school, I was teaching Basketry even though I did Agriculture Science as a major at the university. When we had a new headteacher, I was made to teach English when the English teacher retired. As we speak, I teach Mathematics because the new headteacher reassigned me to teach Mathematics. It appears that a change in headship often determines which subject I teach” (Larbi, a Mathematics teacher at Akroyesum L/A Junior High School).

From these narratives from the teachers, it is evident that they did not decide to teach subjects beyond their specializations and grade levels. Instead, the organizational design of the employment system in Ghana Education Service often pushes most teachers to become out-of-field teachers. It appears that the headteachers wield much influence in determining what the teachers do in their classrooms.

5.2 Effects of out-of-field teaching on classroom practices

Teaching is a complex activity. The activity’s complexity is further heightened when teachers find themselves teaching out-of-field (Hobbs & Törner, 2019). The effect of teaching out-of-field on the teachers’ personal, practical and social life was evident from their responses and classroom practices. It was evident from the responses that the phenomenon affected the novice teachers more than the semi-experienced and experienced ones in the school. When the novice teachers (teachers with up to 12 months of teaching experience) were questioned about how the phenomenon of out-of-field teaching was affecting them, the following are some responses that were elicited:

“For me, it is challenging to teach a subject you have not been trained to teach. Sometimes, I do not even feel like teaching even when I have a lesson” (Kwame, an English Language teacher at Mponponso Basic School).

The views of Kwame indicate a case frustration emanating from his experience as an out-of-field teacher. It will not be surprising to see teachers like Kwame leaving the profession before retirement. It was evident from the interview that Kwame was not the only teacher experiencing such frustrations in the school. Another novice teacher also remarked:

“Sometimes I could see that I didn’t have control over my lessons. I have to study throughout the night just to prepare enough; otherwise, I would disgrace myself in the presence of the students” (Manfred, a General Class teacher at Adantam, M/A Basic School).

In support of Manfred’s position, Larbi added:

“I feel I don’t have knowledge of the subject matter as well as the needed expertise to teach this subject the way I wanted. It is an embarrassment” (Larbi, a Mathematics teacher at Akroyesum L/A Junior High School).

It is seen from the views of Manfred and Larbi that most out-of-field teachers lack the content and pedagogical knowledge for effective teaching in 21st-century classrooms. With the lack of these critical elements that serve as tools of the trade of teaching and learning, most students might lose interest in not these subjects but education in general. As early as 2003, the assistant director of education in charge of Human Resource Development in the Mfantiman district has predicted that most of the students in the district might resort to fishing than schooling due to practices

such as out-of-field teaching and teacher absenteeism (The Independent, 2003). When they were specifically asked how teaching a subject they had not been trained to teach affects their classroom practices, the 3rd of the novice teachers responded:

“I will be honest with you, brother. I don’t usually give enough assignments and exercises as I should. If I give more, it means I have to be prepared to work beyond my limit, knowing very well how brilliant my students are, they would produce answers that will push me to learn even before I start to mark” (Bentil, a teacher at Akroyesum L/A Basic School).

These responses from novice teachers show that teaching out-of-field affects their classroom practices and emotional well-being. One of the semi-experience teachers supported the claims of the novice by saying that:

“I had severe challenges conducting my routine classroom activities when the headteacher gave me this subject after graduating from College. I nearly wrote to my District Directorate of Education to change my school. Everyday classroom practices like writing lesson notes, conducting assignments and motivating my students became a big headache” (Essandoh, a Ghanaian Language teacher at Dzinpa Presby Basic A School).

Another experienced teacher buttressed:

“Teaching a subject I was not trained to teach was hectic for me. I always have to read the textbook as if I was going to write exams before I go to class. Besides, there were days I could feel that I did not have control over my subject matter and my students. To sum it all, I would say I lost confidence in myself” (Larbi, a Mathematics teacher at Akroyesum L/A Junior High School).

Another experienced teacher posited:

“If I tell you I didn’t develop apathy towards the classroom activities, then I’m lying. There were days I could go to school and fall sick when it was getting to my lesson. I could not control my students, neither was I able to motivate them. I could end my lesson, reflect on it throughout the night, and feel I have not done enough” (Rahman, an English Language teacher at Agoroyesum Presby Basic A School).

The views of the out-of-field teachers also presuppose that they are often alienated from their colleagues in discussions bordering on their disciplines in the staff common room. For example, one of the novice teachers posited:

“There are days I do not attend departmental meetings in this school or district. I always feel ignorant when I meet other teachers. I could sit all alone thinking about how best to improve my knowledge and pedagogical skills in this new subject I have been made to teach” (Manfred, a teacher at Adantam, M/A Basic School).

However, it was evident from the views of the semi-experienced and experienced teachers that with the necessary support and in-service training, one could grow through the discipline and gain much mastery in the delivery of the discipline that he or she was not trained to teach. For instance, one of the semi-experienced teachers remarked:

“I don’t feel troubled these days. The workshops and the in-service training I have received so far have better placed me on teaching the subject matter to the level that the students can comprehend” (Akwasi, a Science teacher at Mponua Basic School).

Another experienced teacher recounted:

“When I started teaching a different subject than the one I had been trained to teach, the school authorities were accommodating. The support and motivation were very great. That explains why I feel at home in teaching this new subject” (Afram, a Ghanaian Language teacher at Mpataase Islamic Junior High School).

These views from the semi-experienced and experienced teachers were further corroborated through the observation. The experienced teachers exhibit much control over their lessons and class management. Comparatively, the novice teachers appeared to be fumbling over the content they were teaching. In all the three periods, they were observed, they showcased a lack of confidence in their lesson presentation and further exhibited mannerism in their pronunciations throughout their lessons.

6. Discussions

One way of eliminating the status of Ekumfi, as one of the poorest districts in the country, is through the provision of quality education. However, the results of this study have shown that the phenomenon of out-of-field teaching hampers quality education in the district. The study revealed that the teachers found themselves teaching out-of-field

due to policy directives at the school level but not of their own volition. Therefore, most of them have not adjusted well to the classroom demands and the school environment. As a result, they struggle to prepare appropriate lesson notes, conduct assessments, and effectively manage their classrooms. The results, however, showed that with proper social and institutional support, out-of-field teachers could improve their teaching practices in the school and classroom.

The phenomenon of out-of-field teaching has been researched and documented in the international literature (Price et al., 2019). However, how teachers find themselves teaching out-of-field appears contextual. The results of this study in the Ekumfi district have shown that the positions of the out-of-field teachers are often created at the school level, where headteachers appear to have much control in determining what each teacher does in the classroom. This situation may have occurred due to the increasing pressure on educational systems to decentralize the bureaucratic processes involved in teacher recruitment and deployment. Northen (2010) maintains that allowing headteachers to handle critical issues such as course assignments and teacher recruitment might be disastrous, especially in the Ghanaian context where research has established that headteachers are selected based on experience but not qualifications (Dampson, 2019). Impliedly, the headteachers might not have the skill and dexterity to post teachers in teaching positions that share similar traits to the ontological basis of the disciplines they were trained to teach. Irrespective, the teachers do not have much control in determining what they want to teach. The issues of social entanglement and favoritism at the school level might be very pervasive in the schools in the quest of the teachers to gain the attention and trust of the headteachers to be given subjects they can control.

The study's findings further show varied experiences of the out-of-field teachers based on the years they have spent in the school. It was evident that the novice teachers in Ekumfi district (1 month-12 months) struggled more in adjusting to the demands of their classrooms. They struggled to prepare instructional lessons, conduct assessments, motivate their students, and undertake other classroom activities. As the teachers progressed through the (1-4 years) years in the school, they began acquainting themselves with the instructional practices of the new subjects they had been attached to teach. A perfect picture of the teaching as more professionals, even though they might still find themselves teaching out-of-field, is realized when they have become experienced teachers in the field. From a socio-culturalist perspective, this change in the practice of the out-of-field teachers through the years of experience is attributable to the social milieu and the professional networks they establish in the school (Lave & Wenger, 1991). The results confirm the findings of Porsch (2016) that the teachers consider their position of teaching out-of-field as a formal condition (*I'm not qualified*), lack of teaching expertise (*I don't have the necessary subject matter knowledge or pedagogical knowledge to use in teaching effectively*), or a condition of identity and feeling out-of-field (*I consider myself an outsider in the classroom*). Invariably, the teachers do not control what they teach in the classroom. Again, the teachers might not bring innovation, creativity, identity expansion, and new passions and interests to the classroom (Hobbs, 2012b).

7. Conclusions and recommendations for policy and practice

The study results have shown that the decision to place teachers out of their field of specialization is a school-based policy and not from the Ministry of Education and its subsidiary agencies like the Ghana Education Service. Therefore, it was evident that most of them had not adjusted well to the classroom demands. They struggle to prepare appropriate lesson notes, conduct assessments, and manage their classrooms. Given these findings, the study concluded that students' performance in the rural parts of Ghana is likely to continue to dwindle if policies that may limit its influence in the classroom are not pursued. Besides, teacher attrition coupled with teacher refusal of posting to rural areas might be ascendant.

The study recommends that the Ministry of Education and its subsidiary agencies, such as the Ghana Education Service, develop a policy framework to guide the recruitment and deployment of teachers, especially to deprived communities. Such a policy should ensure that teachers are recruited and deployed based on their expertise and the availability of classroom spaces to teach in the schools. Again, in collaboration with the District Education Directorate, the headteachers should design school-based policies to support teachers who find themselves teaching out-of-field.

Conflict of interest

The authors declare no conflict of interest.

References

- Aina, J. K. (2016). Employment of untrained graduate teachers in schools: The Nigeria case. *Journal of Studies in Social Sciences and Humanities*, 2(2), 34-44.
- Australian Education Union (AEU) (2009). *State of our schools survey 2009*. Melbourne: Australian Education Union.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- British Department of Education (2011, September). *A profile of teachers in England from the 2010 school workforce census. England: Department of Education*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/182407/DFE-RR151.pdf
- Bonney, E. A., Amoah, D. F., Micah, S. A., Ahiameny, C., & Lemaire, M. B. (2015). The relationship between the quality of teachers and pupils academic performance in the STMA Junior High Schools of the Western region of Ghana. *Journal of Education and Practice*, 6(24), 139-150.
- Caldis, S. (2017). Teaching out of field: Teachers having to know what they do not know. *Geography Bulletin*, 49(1), 13-17.
- Chan, K. K. H. & Yung, B. H. W. (2018). Developing pedagogical content knowledge for teaching a new topic: More than teaching experience and subject matter knowledge. *Research in Science Education*, 48(2), 233-265. <https://doi.org/10.1007/s11165-016-9567-1>
- Cobbold, C. (2015). Solving the teacher shortage problem in Ghana: Critical perspectives for understanding the issues. *Journal of Education and Practice*, 6(9), 71-79.
- Creswell, J. W. (2012). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. (3rd ed.). Thousand Oaks, CA: SAGE Publications.
- Creswell, J. W. (2011). Controversies in mixed methods research. In N. Denzin, & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (4th ed., pp. 269-283). Thousand Oaks, CA: Sage Publications.
- Dampson, D. G. (2019). Selection and appointment of basic school headteachers in Ghana: Looking back to move forward. *Education Quarterly Reviews*, 2(1), 1-13
- Denzin, N. K., & Lincoln, Y. S. (2017). *The Sage Handbook of Qualitative Research* (5th Ed.). Thousand Oaks, CA: Sage Publications.
- Dinham, S. (2016, March 7). Why is it so hard to recruit good maths and science teachers? *The Conversation*. <https://theconversation.com/why-is-it-so-hard-to-recruit-good-maths-and-science-teachers-55697>
- Du Plessis, A. E. (2005). *The implications of the out of field phenomenon for school management*. Unpublished dissertation. University of South Africa, Pretoria.
- Du Plessis, A. E. (2013). *Understanding the out-of-field teaching experience* [Unpublished doctoral dissertation]. The University of Queensland, Australia.
- Du Plessis, A. E., Gillies, R. M., & Carroll, A. (2014). Out-of-field teaching and professional development: A transnational investigation across Australia and South Africa. *International Journal of Educational Research*, 66, 90-102. <http://dx.doi.org/10.1016/j.ijer.2014.03.002>
- Fullan, M. (2003). *Change Forces with a Vengeance*. London: Routledge.
- Ghana Education Service (2018). *Director's annual report*. GES: Accra.
- Ghana Education Service (2019). *Director's annual report*. GES: Accra.
- Ghana Education Service (2020). *Director's annual report*. GES: Accra.
- Goldhaber, D., & Anthony, E. (2003, May). *Teacher quality and student achievement*. *Urban diversity series*. <https://files.eric.ed.gov/fulltext/ED477271.pdf>
- Haycock, K. (2001). Closing the achievement gap. *Educational Leadership*, 58(6), 6-11.
- Hightower, A. M., Delgado R. C., Lloyd, S. C., Wittenstein, R., Sellers, K., & Swanson, C. B. (2011, December). *Improving student learning by supporting quality teaching: Key issues, effective strategies*. Maryland: Editorial Projects in Education.
- Hobbs, L. (2012a). Examining the aesthetic dimensions of teaching: Relationships between teacher knowledge, identity and passion. *Teaching and Teacher Education*, 28(5), 718-727. <https://doi.org/10.1016/j.tate.2012.01.010>

- Hobbs, L. (2012b). Teaching out-of-field: Factors shaping identities of secondary science and mathematics. *Teaching Science*, 58(1), 21-29.
- Hobbs, L., & Törner, G. (2019). Teaching out-of-field as a phenomenon and research problem. In Hobbs, Linda and Törner, G (Eds.), *Examining the Phenomenon of "Teaching Out-of-field": International Perspectives on Teaching as a Non-specialist* (pp. 3-20). Springer, Berlin, Germany. <https://doi.org/10.1007/978-981-13-3366-8>
- Ingersoll, R. (2006). *Is there really a shortage of mathematics and science teachers?* Presented at the *Math Science Partnership Conference, January 2006*. http://repository.upenn.edu/gse_pubs/132
- Ingersoll, R. M., & Curran, B. K. (2004). *Out-of-field teaching: The great obstacle to meeting the "highly qualified" teacher challenge*. Washington, DC: NGA Center for Best Practices.
- Ingersoll, R. M., & Gruber, K. (1996). Out of field teaching and educational equality. *National Centre for Education Statistics: Statistical Analysis Report*. US Department of Education, Office of Educational Research and Improvement.
- Johnson, K. E. (2009). *Second Language Teacher Education: A Sociocultural Perspective*. London: Routledge.
- Klassen, A. C., Creswell, J., Plano Clark, V. L., Smith, K. C., & Meissner, H. I. (2012). Best practices in mixed methods for quality of life research. *Quality of Life Research*, 21(3), 377-380.
- Lave, J., & Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
- Lee, E., & Luft, J. A. (2008). Experienced secondary school science teachers' representation of pedagogical content knowledge. *International Journal of Science Education*, 30(10), 1343-1363. <https://doi.org/10.1080/09500690802187058>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry*. London: Sage Publications.
- Loveys, K. (2011, April 21). *Scandal of the untrained teacher: Thousands don't have degrees in the subjects they teach*. The Daily Mail. <http://www.dailymail.co.uk/news/article-1378908/Thousands-teachers-dont-degrees-subjects-teach.html>
- Luft, J. A., Hanuscin, D., Hobbs, L., & Törner, G. (2020). Out-of-field teaching in science: An overlooked problem. *Journal of Science Teacher Education*, 31(7), 719-724. <https://doi.org/10.1080/1046560X.2020.1814052>
- Masters, G. (2015, March 16). *Planning a stronger teacher workforce*. <https://www.teachermagazine.com.au/geoff-masters/article/planning-a-stronger-teacher-workforce>
- Mathews, C., Boon, H., Flisher, A. J., & Schaalma, H. P. (2006). Factors associated with teachers' implementation of HIV/AIDS education in secondary schools in Cape Town, South Africa. *AIDS Care*, 18(4), 388-397. <https://doi.org/10.1080/09540120500498203>.
- McConney, A., & Price, A. (2009). *An assessment of the phenomenon of "teaching Out-of-field" in WA Schools*. Murdoch University. Centre for Learning, Change and Development, Murdoch University, Murdoch, W.A.
- Ní Riordáin, M., & Hannigan, A. (2011). Who teaches mathematics at second level in Ireland? *Irish Educational Studies*, 30(3), 289-304. <https://doi.org/10.1080/03323315.2011.569117>
- Northen, S. (2010, October 12). *For schools and headteachers, autonomy can lead to disaster*. The Guardian. <https://www.theguardian.com/education/2010/oct/12/headteachers-autonomy-performance-disaster>
- Organization for Economic Cooperation and Development (OECD) (2005). *Teachers matter: Attracting, developing and retaining effective teachers*. <https://www.oecd.org/edu/school/34990905.pdf>
- Porsch, R. (2016). Fachfremd unterrichten in Deutschland: Definition-Verbreitung-Auswirkungen (Teaching foreign subjects in Germany: Definition-Diffusion-Impact). *DDS-Die Deutsche Schule (DDS-The German School)*, 108(1), 9-32.
- Price, A., Vale, C., Porsch, R., Rahayu, E., Faulkner, F., Riordáin, M. N., Crisan, C., & Luft, J. A. (2019). Teaching Out-of-Field Internationally. In: Hobbs, L., Törner, G. (Eds.) *Examining the Phenomenon of "Teaching Out-of-field"*. Springer, Singapore. https://doi.org/10.1007/978-981-13-3366-8_3
- Rizwan, S., & Khan, R. M. (2015). Raising the quality of teaching in public schools of Pakistan: A three dimensional analysis for capacity development of in-service teachers in instructional planning and strategies. *Journal of Education and Practice*, 6(19), 190-202.
- Shah, L., Jannuzzo, C., Hassan, T., Gadidov, B., Ray, H. E., & Rushton, G. T. (2019). Diagnosing the current state of out-of-field teaching in high school science and mathematics. *PloS one*, 14(9), e0223186. <https://doi.org/10.1371/journal.pone.0223186>
- Schueler, S., Roesken-Winter, B., Weißenrieder, J., Lambert, A., & Römer, M. (2015). Characteristics of out-of-field teaching: Teacher beliefs and competencies. *CERME 9-Ninth Congress of the European Society for Research in Mathematics Education, Charles University in Prague, Faculty of Education* (pp.3254-3261). ERME, Feb 2015, Prague, Czech Republic. fhal-01289877.

- Sheppard, K., Padwa, L., Kelly, A. M., & Krakehl, R. (2020). Out-of-field teaching in chemistry and physics: An empirical census study. *Journal of Science Teacher Education*, 31(7), 746-767. <https://doi.org/10.1080/1046560X.2019.1702268>
- Sheshea, N. E. (2017). *An exploration of out-of-field teacher experiences. A case study of secondary school social science teachers at Pholela Circuit, Kwazulu-Natal*. <https://pdfs.semanticscholar.org/2f89/55e05f120cfd7077115b9dd32f1ca6708df8.pdf>
- Singh, P., Hoyte, F., Heimans, S., & Exley, B. (2021). Teacher quality and teacher education: A critical policy analysis of international and Australian policies. *Australian Journal of Teacher Education (Online)*, 46(4), 1-15. <http://dx.doi.org/10.14221/ajte.2021v46n4.1>
- Silva. B. (2010, May 4). *Over 1700 unqualified teachers in South Africa*. <http://westcapenews.com/?p=1431>
- The Independent (2003). *Ekumfi Narkwa pupils prefer fishing to schooling*. <https://www.modernghana.com/news/32348/ekumfi-narkwa-pupils-prefer-fishing-to-schooling.html>
- Umoinyang, E. U., Akpan, G. S., & Ekpo, I. G. (2011). Influence of out-of-field teaching on teachers' job performance. *Knowledge Review*, 23(2), 28-32.
- Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Pedagogical Processes*. Cambridge: Harvard University Press.
- Weldon, P. R. (2016). *Out-of-field teaching in Australian secondary schools*. Melbourne: ACER.
- West Africa Examination Council (2018). *Chief examiner's report for school candidates 2018*. WAEC: Accra.
- West Africa Examination Council (2019). *Chief examiner's report for school candidates 2019*. WAEC: Accra.
- West Africa Examination Council (2020). *Chief examiner's report for school candidates 2020*. WAEC: Accra.
- Wushishi, A. A., Foori, F. S., Basri, R., & Baki, R. (2014) A qualitative study on the effects of teacher attrition. *International Journal of Education & Literacy Studies*, 2(1), 11-16.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd edition). Thousand Oaks, CA: Sage.

Appendix A

Table A1. Background Information of Respondents

Pseudonym	Background
Akwasi	Original Subject: Hospitality Management Out-field-subject: Science Number of Years Taught: 2 Years
Bentil	Original Subject: General Subjects without history Out-field-subject: History Number of Years Taught: 8 Years
Asabea	Original Subject: Mathematics Out-field-subject: Our World, Our People Number of Years Taught: 6 Months
Manfred	Original Subject: French Out-field-subject: All subjects Number of Years Taught: 4 Years
Essandoh	Original Subject: Ghanaian Language Out-field-subject: English Number of Years Taught: 13 Years
Larbi	Original Subject: Agriculture Science Out-field-subject: Mathematics Number of Years Taught: 3 Years
Kwame	Original Subject: Science Out-field-subject: English Number of Years Taught: 1 Year
Afram	Original Subject: General Class Teacher Out-field-subject: Ghanaian Language Number of Years Taught: 16 Years
Rahman	Original Subject: Home Economics Out-field-subject: English Language Number of Years Taught: 5 Months