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Teacher-led
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for Formative Assessment

Teacher-Led Learning Circles for Formative Assessment:

FINAL REPORT GHANA

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Teacher-Led Formative assessment practices among basic school teachers in Ghana

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Published by Education International - Sept. 2024

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Introduction

Ghana is a lower-middle-income country in West Africa with a population of 30.8 million. With 16 administrative regions, Accra, the capital city, has the highest population (5,446,237), with Ahafo region having the least (564,536) population. Females make up 50.7% while the male (49.3%) make a sex ratio of 97 males for every 100 females (Ghana Statistical Service, 2021). Ghana has a young population of nearly 57% of the population being under the age of 25, a life expectancy of birth of 67 years, an adult literacy rate of 76.6%, and a total fertility rate of 4.03 children per woman. Also, nearly a quarter (24.2%) of the population lives below the national poverty line (Ghana Statistical Service, 2021).

Ghana's education structure originates from the colonial past, where earliest schools in pre-colonial period in the Gold Coast were started to educate the mixed-race children of European traders (Akyeampong et al., 2007). In the quest to expand education access, Christian missions regard education as a necessary tool for missionary activity. There were a lot of education reforms after independence in 1957 to date. However, the 1987 reforms benefited the most from investment to improve access and quality of basic education (Akyeampong et al., 2007). In 1995, the free compulsory universal basic education (FCUBE) reforms were introduced, which was supported by the World Bank to fix weaknesses in earlier education reforms. The implementation of the FCUBE aimed at educational access and quality through increased instructional time, investment in school infrastructure, and community involvement in school management and administration. Since 1995, the government of Ghana has introduced many policy interventions to increase access and improve the quality of education. Some of these policy initiatives are the abolition of all forms of school fees, and increased involvement of the community in the administration of schools through SMC/PTA in 1995. In addition, the introduction of capitation grants to basic schools in 2005, school feeding programmes, teacher licensing policy in 2019 , and recently in 2016 the government introduced free senior high School. These policy initiatives increased access to basic education significantly over the last two decades (Akyeampong et al., 2007), putting pressure on government budget to education.

Education administration

The Ministry of Education (MOE), with Ghana Education Service (GES) as its implementing agency, is responsible for policy and curriculum development for pre-tertiary education. Regional and District education offices represent the MOE at the regional, metropolitan, municipal, and districts. Officers from these offices monitor and supervise education policies and inspections of schools. In addition, MOE has other agencies that share other responsibilities with GES in the implementation of Government policies. Such agencies are the National teaching council (NTC), responsible for teacher licensing and professional development, and the National Inspectorate Board, responsible for school monitoring and supervision. The National Council for Curriculum and Assessment (NaCCA), is in charge of curriculum and assessment review and development for the pre-tertiary level. Ghana Tertiary Education Commission (GTEC), is the regulatory body for tertiary education. Also, the management of technical and vocational education is regulated by the Council for Technical and Vocational Education and Training (TVET). The West African Examination Council (WAEC) conducts students from pre-tertiary level

terminal examinations. These are the Basic Education Certificate Examination (BECE) for grade 9 and the West African Senior Secondary Certificate Examination (WASSCE) for senior high school students.

The current school system comprise basic education (free and compulsory by law), which consist of 2-year Kindergarten, 6-year primary, 3-year junior high school (JHS). Secondary education comprises 3-year senior high School (SHS), technical vocational education and training. Finally, tertiary education is four years comprising universities, colleges of education, polytechnics, and other diploma and degree awarding institutions.

Access to basic education

Access to basic education has increased significantly since 2010/2011 academic year due to the abolition of all forms of school fees and other access-related intervention policies such as capitation grant scheme, school feeding, and education decentralistion by the government. However, whilst Ghana has made substantial progress in expanding access to basic education services, Gross Enrolment Ratios (GER) across the basic education sector currently follow a downward trend (see Figure 1) For the academic year 2018/19, GER has continued to decrease or is stagnant.

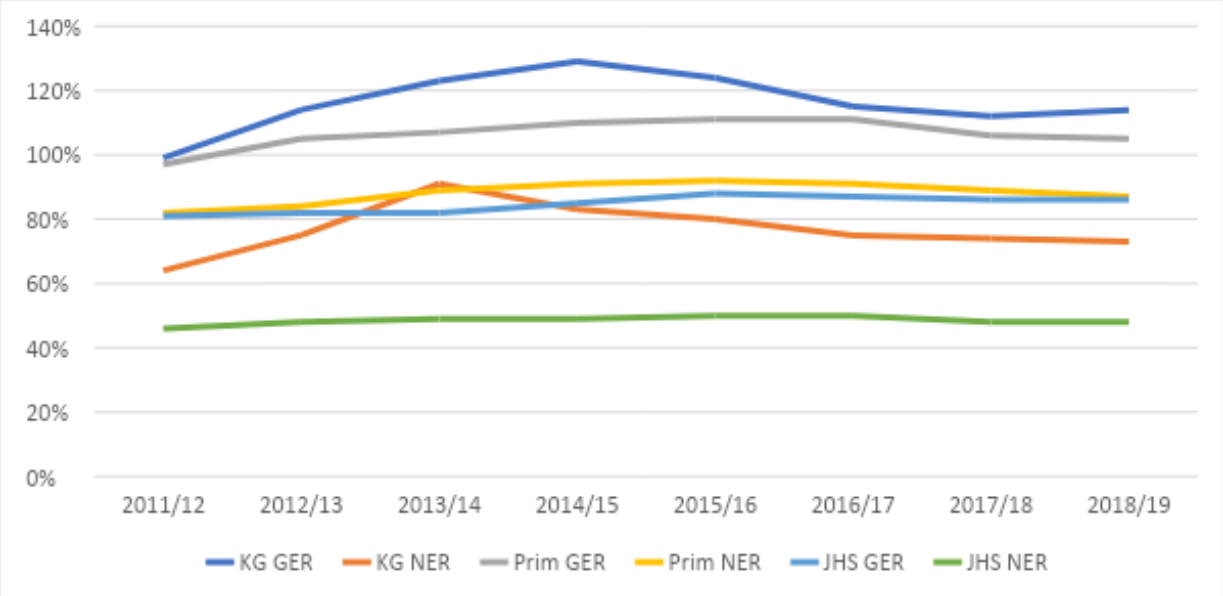

Figure 1: Basic Education GER and NER 2011/12-2018/19 (MOE, 2019)

The downward trend is affecting the Net Enrolment Ratio (NER), except for the JHS level, where it is stagnant. Decreasing the GER trend could imply that interventions to ensure the right age enrolment impact the figures. However, as NER is falling, there is a concern because it shows a gradual increase in out-of-school children. There is a consistent noticeable gap between Primary GER and Primary NER, suggesting that policies have not succeeded in enrolling and keeping children in School over the years. There is great concern that students who are supposed to be in School are not (Ministry of Education (MOE), 2020).

Government's efforts to increase and sustain access have been thwarted by the number of out-of-school children that have persisted since 2011. These out-of-school children include those who have never enrolled and drop out of School. The MOE estimate about 450,000 out-of-school children (MOE, 2020) mainly concentrated in the northern regions, urban areas, cocoa farming, and mining areas. Key push factors that make children drop out of School are low achievement and attendance in early grades. Furthermore, lack of schools, location of a child, household income, child labour, and distance to School are significant factors that prevent children from attending schools in Ghana (Ananga, 2011).

Government provision of schools has increased due to the surge in access; however, a major concern is the rate of growth of private schools, especially in urban areas. From table 1, there are more private schools than the public at the preschool level, while public schools outnumber private schools at the basic and SHS levels.

Table 1: Number of schools (2018/2019 academic year)

	Pre-school	**Kindegarten**	**Primary**	**JHS**	**SHS**
Public	416	14649	15138	10784	630
Private	8514	9769	9488	6066	286
Total	**8930**	**24418**	**24626**	**16850**	**916**

The number of schools reflects enrollment figures as shown in Table 2. Private schools accounts over 20% of enrollment. The majority of the private schools are concentrated in the cities where rich and average households can afford private schools' fees (Ministry of Education , 2018)

Table 2: School enrollment (2018/2019 academic year)

	Pre-school		**Kindergarten**		**Primary**		**JHS**		**SHS**	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Public	9261	9317	634031	616113	1885431	2063992	660146	628279	454834	437181
Private	231210	226283	262797	258789	605619	607794	174755	179347	31815	34989
Total	**240471**	**235600**	**896828**	**874902**	**2491050**	**2671786**	**834901**	**807626**	**486649**	**472170**

KG, Primary and JHS Enrolment

Enrolment in KG is increasing in absolute numbers but at a slower pace than the total 4-5-year population growth (See Table 3). This has caused the KG NER to decrease to 73.3% from 74.6% during the academic year. Public enrolment constitutes 70% of KG pupils. This implies that private enrolment has increased by 3% during the last year to comprise 30% of the KG enrolment.

Table 3: Enrolment in KG 2016/17-2018/19

Indicators	National		
	2016/17	2017/18	2018/19
KG GER (%)	115.6	112.4	113.9
KG NER (%)	74.6	74.6	73.8
Enrol. KG	1,774,947	1,778,021	1,832,693
Enrol. KG (4-5 yr.)	1,145,458	1,179,561	1,187,817
Population (4-5 yr)	1.535,959	1,581,200	1,609,130
% Private enrolment	27.3	27.3	30.3

Source (EMIS, 2019)

Table 4 presents data on primary (6-11 year) enrolment figures for 2015/16-2018/2019. The Primary NAR is more than 15% lower than the Primary NER, which measures the total enrolment of age 6-11 students over the age 6-11 population. This implies that even though 87.3% of students in Primary education are between 6-11 years old, only 71.4% of the students enrolling in P1 are of accurate age. It also suggests more than 13% of primary-aged children are not in School. The incidence of under and over-age enrolment in Primary education remain a challenge that needs policy attention.

Table 4: Enrolment in primary KG 2016/17-2018/19

	National			
	2015/16	2016/17	2017/18	2018/19
Primary GER (%)	111.3	111.4	106.2	105.3
Primary NER (%)	91.5	91.1	89.3	87.3
Primary GAR (%)	118.0	118.6	101.5	102.0
Primary NAR (%)	81.6	80.5	72.3	71.4
Enr. Primary	4,358,176	4,393,061	4,401,194	4,511,268
Enr. Prim. (6-11yr)	3,583,941	3,595,905	3,699,575	3,739,140
Population (6-11yr)	3,916,406	3,945,032	4,144,762	4,285,464
% Private enrolment	25.3	25.8	29.6	28.7

Source (EMIS, 2019)

Enrolment figures for JHS (12-14 year) are presented in Table 5. There exist marginal changes in GER, NER, GAR and NAR from the previous academic years. However, the transition rate from Primary 6 to JHS 1 has, even though marginally, decreased. The trend in transition rates is currently following a decreasing trend which also suggests that many young Ghanaians are not continuing their education after completing upper primary.

Table 5: Enrolment in JHS 2016/17-2018/19

	National			
	2015/16	2016/17	2017/18	2018/19
JHS GER (%)	88.0	86.8	86.1	86.2
JHS NER (%)	50.3	49.7	48.5	48.4
JHS GAR (%)	97.4	96.0	91.7	93.3
JHS NAR (%)	45.5	44.9	43.8	44.0
Transition to JHS1(%)	94.7	94.3	92.1	90.8
Enrol. JHS	1,607,382	1,610,834	1,645,764	1,678,132
Enrol. JHS (12-14yr)	918,043	921,996	926,634	942,616
Pop. (12-14yr)	1,826,472	1,855,623	1,912,381	1,945,752
% Private enrolment	22.0	22.0	21.9	21.8

Source (EMIS, 2019)

Current Education Reforms

Ghana's education system has seen significant reforms over the last two decades with very little impact on the learning crisis among pupils. For instance, the 2016 National Education Assessment results indicate that only 37% of primary school class 4 (P4) pupils showed proficiency in literacy, while 22% showed mastery in numeracy. The results also show that after six years of primary schooling, only 36% of our children met grade-level expectations in literacy, while only 25% met grade-level expectations in numeracy. Learners in private schools continue to perform better than those in public schools (Ministry of Education , 2018).

The persistent poor performance of pupils in numeracy and literacy resulted in a significant reform in the education sector in 2016. With the support from the Transforming Teacher Education and Learning (T-TEL) organization funded by the UK Government and other international donors, the government embarked on major reforms in teacher education, teacher professional development and review of the basic school curriculum. Contemporary literature has revealed that the initial teacher education programmes in many Sub Saharan African countries, including Ghana, place little emphasis on practical knowledge and practice as 'too theoretical' (Adu-Yeboah & Kwaah, 2018; Akyeampong, 2017). The Diploma in Basic

Education curriculum used to train teachers for basic schools was criticized for not adequately preparing teachers to teach in Ghanaian basic schools (T-TEL, 2015), with a little positive impact on learning outcomes. Furthermore, pupils lack 21st-century skills needed for lifelong learning and to fit global technological advancement (UNESCO, 2015). As a result, the government introduced a four-year Bachelor of Education curriculum in the colleges of education. The BEd programme is based on a National Teacher Education Curriculum Framework (NTECT) and National Teaching Standards (NTS). The new B.Ed programmes vision is to prepare teachers to become engaging, creative and developing essential skills, knowledge, and understanding required for a good teachers as set out in the NTS (MOE, 2018). Furthermore, the reform is the view that participatory and active learning using TLMs as tools to foster learner-centered pedagogy can impact the quality of practicum (T-TEL, 2016).

Review of the basic school curriculum

The government introduced the new standard-based basic school curriculum in 2019 to address the challenges with the objective-based curriculum. The old objective-based curriculum did not have clearly defined philosophies, goals and aspirations to guide the educational systems through subject specific rationales. The assessment system is beset with challenges; its content and its implementation are academic and examination driven; it does not provide effective data for evaluating teaching and learning to improve quality pre-tertiary education (MOE, 2019). The new curriculum aim to provide learners with 4Rs (Reading, wRiting, aRithmetic and cReativity), emphasis on inclusion and diversity, emphais on learning-centered pedagogies (use of ICT as a pedagogical tool). Furthermore, there is provision for developing core competencies (critical thinking, communication and collaboration, creativity and innovation, cultural identity and global citizenship, digital literacy, leadership and personal , development. The new curriculum reintroduces the History of Ghana, strengthens the teaching and French and Arabic as modern foreign languages and making Ghana a mathematics-friendly nation (Ministry of Education, 2019)

Pedagogical approaches

The standard-based curriculum for primary 1 to 6 espouses social constructivism teaching approaches where teachers create a learner-centered classroom environment for learners to actively engage in looking for answers through project work, group assignments, solving problems, etc. The curriculum specifically states that the learner-centered pedagogical approach is to make learners construct their own knowledge and develop learners' autonomy for deep learning to occur among learners (Ministry of Education, 2019). It must be noted that ICT has also been integrated into the standard-based curriculum teaching and learning approach to enhance deep and independent learning to improve learning outcomes. The rapid increase in information communication technologies globally has necessitated the need to allow learners to access various ICT tools. Teachers can also use ICT tools to organize and make decisions on learners' progress. The curriculum for teachers has suggested learner-centered pedagogies: group work (collaborative learning, problem-based learning, discussions), inquiry-based learning, demonstrations, activity-based learning, use of resource persons for presentations, ICT-based learning, field trips, etc. (Ministry of Education, 2019). The importance of using teaching and learning resources to aid in lesson delivery has been emphasized in the standard-based curriculum. The curriculum allows teachers to acquire teaching and learning resources to deliver lessons in the classrooms effectively.

Similarly, the curriculum for early grades (kindergarten 1 and 2) adopts creative and learning-centered pedagogies for teaching and learning. The strategies cited in the curriculum include a thematic approach, play-based methods, learner-centered methods and inquiry/discovery methods (Ministry of Education Education, 2019)

Assessment

The basic school curriculum emphasis assessment as one of the integral part of the teaching and learning process among learners. Assessment is seen the process of collecting and evaluating learners' information and using it for various decision making to improve learning (Ministry of Education, 2019). The curriculum recognizes assessment as both formative and summative, but more emphasis is placed on formative assessment to improve teaching and learning. The formative assessment in the curriculum recognizes 'assessment for learning', 'assessment as learning' and 'assessment for learning'. In addition, schools are encouraged to implement school-based assessment (SBA). The SBA is designed to provide schools with an internal assessment system to help introduce standards of achievement in each subject and each class of the school systems. The SBA consists of assignments, class exercises, group work, and project work that constitute a component of 60%. The SBA is expected to help teachers evaluate learners' class performance and encourage learners to improve their performance (Ministry of Education, 2019).

A study by Aboagye and Yawson (2020) on teachers' perception of the standard-based curriculum found that teachers perceived the curriculum to assist learners in getting lifelong goals and prepare learners for the job market and promote gender equality. However, the study also found that implementing the new curriculum has its associated challenges. The teachers recounted the lack of teaching and learning resources, the extension of teaching periods, volume of workloads impeding the smooth implementation of the curriculum. Furthermore, limited internet access in schools, inadequate computers and accessories, and lack of training in ICT for teachers (Adomako et al., 2022; Yalley, 2022) affect the integration of ICT into the teaching and learning as espoused by the standard-based curriculum.

Teacher professional development

Until 2018, continuous professional development (CPD) for teachers in Ghanaian teacher education has been inconsistent and neglected due to a lack of concrete policy on CPD for teachers (Cobbold, 2007; Perry & Bevins, 2019; Pryor et al., 2012). This was attributed to the considerable cost associated with CPD provision for teachers (Geldenhuys & Oosthuizen, 2015) and the reliance on initial teacher education. Although the Ministry of Education emphasizes CPD of teachers in improving teachers' teaching, CPD programmes for teachers were not governed by a national policy (Cobbold, 2007). CPD programmes delivered by the Ghana Education Service and other recognised bodies such as JICA, USAID, NGOs etc were not adequately coordinated and didn't always meet the needs of most teachers (Armah, 2016;Dampson & Danso Mensah, 2018). Furthermore, headteachers and teachers who attended CPD programmes didn't attach much professional interest because they were authorised to do so but didn't recognise it as part of their professional development process (Asare et al., 2012)

In response to lack of policy governing the implementation of CPD programmes for teacher professional development in Ghana, the Japanese International Cooperation Agency (JICA) supported projects provided the MOE/GES the opportunity for the development 'the Pre-tertiary Teacher Professional Development and Management (PTPDM) policy. Additionally, the Education Act 2008 (Act 778) proposed the establishment of National Teaching Council (NTC) with the responsibility for setting and ensuring professional standards and a code of practice for the professional development of teachers (Ministry of Education, 2018b).

The NTC in collaboration with stakeholders supported by Transforming Teacher Education and Learning (T-TEL) has developed the National Pre-Tertiary Education Curriculum Framework (NTECF) and National Teachers' Standards for Ghana that provide the standards for both pre-service and in-service teachers. These two documents were approved by the Cabinet of the Republic of Ghana on 28th September 2017 (Ministry of Education, 2018a). The NTC is mandated to issue a license to pre-service teachers after completing their initial teacher training by passing the Ghana Teacher Licensure Examination (CTLE). The examination has three papers: numeracy, literacy, and professional skills and values. Also, the NTC had issued a license to qualified in-service teachers who were employed before 1st September, 2018 and satisfied other necessary conditions. For in-service teachers to renew their license every three years, they are expected to attend CPD programmes and build portfolios which NTC will vet through the online teachers' portal.

Professional learning communities (PLCs)

The standard-based curriculum has professional learning communities (PLC) as one of its component to improve teachers' professional knowledge skills at the school level. "As an organizational arrangement, the professional learning community is seen as a powerful staff development approach and a potent strategy for school change and improvement" (p. Hord, 1997). Basic teachers are supposed to make the PLC model a process of collaboration among colleagues teachers, become students of teaching to help learners and accept responsibilities for implementing better teaching strategies to improve learning. All basic schools organize PLC sessions once a week, usually at the end of the instructional hours. Teachers discuss difficult topics, pedagogical approaches, and assessment strategies to improve learners learning. Schools may also fall on resource persons outside the school or bring experienced teachers either in the same school or another school for PLC sessions. District Education offices also organize coaching sessions for primary school teachers, empowering them to participate actively in School PLCs sessions. All these school-based professional development programmes count to teachers' license renewal through portfolio building. It is believed that the NTS will replace the diversity of standards used by various institutions that provide pre-service and in-service teacher education based on consolidated national standards to improve quality teaching and learning outcomes in Ghana.

Research Questions

This research framework is rooted in two broad research questions and associated guiding questions.

1. In the Teacher-led Learning Circles, what promising teacher-led formative assessment practices were identified?

    a) What teacher-led formative assessment practices were used, and how were they implemented? b) How did technology support the implementation of formative assessment practices?
    b) Which teacher-led formative assessment practices provided effective feedback to students?
    c) What benefits from using formative assessment were identified for teachers' practices?
    d) What benefits from using formative assessment were identified for students' learning?

2. In the Teacher-led Learning Circles, what professional learning and teacher leadership processes supported teachers' formative assessment practices?

    a) How were teachers supported in understanding, developing, and using formative assessment practices?
    b) What helped or hindered effective use of formative assessment practices?

Methods

Method Multiple methods will be used to collect, analyze, and codify data on teachers' formative assessment practices that benefited students' learning and related student outcomes; and how the Teacher-led Learning Circles process supported changes in teachers' assessment practices. The various data sources that will be consistently collected and analyzed from each of the seven countries include: Teacher Action Plans; Teacher Portfolios; Teacher Reflections; Teacher Vignettes; National Reports; participant surveys for teachers, local facilitators, and local union representatives in each country; and a focus group with national researchers. The following sections describe the data collection plan and tools, summarize the research framework, and 5 map the research questions to the international data source. Teacher data collection will be integrated within Learning Circle sessions. Additional information about key data sources can be found in Appendices A through D. In Figure 2, we provide an overview of the research framework data collection plan.

This study used quasi-experimental design to explore teachers use of formative assessment practices in the Ghanaian basic schools in Ghana.

Participants

Selection of Facilitators

The country was divided into three geographical belts: Northern, Middle and Southern. One region each was purposively selected from each belt namely Ashanti (middle belt), Upper East (Northern Belts), Central (Southern Belt). From each region two districts were randomly selected to be part of the study. In each district, two basic schools (see Table 6) were purposively selected. We then purposively selected two teachers each from Kidegarten, lower and upper primary making a total of 36 teachers. We therefore had 6 learning cirlces with each having 6 teachers and two facilitators. The facilitators were carefully selected based on teaching experience and qualifications with the help of Ghana National Association of Teachers (GNAT). All of them have been classroom teachers for not less than six years. Except for one facilitation has a minimum professional qualification as Bachelor, all of them had master's degree.

Table 6: Sample Schools

Region: Ashanti				
	District	Local	Community	School
1	Bosomtwe Atwima Kwanwoma	Jachie	Jachie	Jachie D/A 1 Primary
2	Bosomtwe Atwima Kwanwoma	Jachie	Jachie	Jachie D/A 2 Primary
3	Ahafo Ano South	Hwibaa	Hwibaa	Hwibaa R/C Primary
4	Ahafo Ano South	Wioso	Wioso	Wioso D/A
Region: Central				
	District	Local	Community	School
5	AEE	Bisease	Bisease	Bisease Radiant D/A
6	AEE	Bisease	Brofoyedur	Brofoyedur D/A Basic school
7	Cape Coast	Jubilee	Aboom	Aboom A.M. E. Zion 'C' Primary School
8	Cape Coast	Jubilee	Aboom	St. Monica's Girls Primary School
Region: Upper East				
	District	Local	Community	School
9	Builsa	Samdema	Samdema	Christ the King R/C Primary
10	Builsa	Samdema	Samdema	Ayieta Primary
11	Bolgatanga	Bolgatanga	Zaare	Zaare Experimental Primary
12	Bolgatanga	Bolgatanga	Zaare	Akantome Primary

There were 30 teachers who were involved in the study. On average, teachers had 12 years of teaching experience, indicating a relatively experienced cohort (see table 7). The majority of teachers (40%) taught at the Primary 1 level, followed by Primary 4 (33.33%) and Primary 6 (26.67%). Class sizes varied, with the highest proportion of teachers (43.33%) having 31-40 students in their classes. A significant number of participants also reported having 41-50 students (20%) and 51-60 students (23.33%). Teachers were located across different school communities, with 40% in urban areas, 43.33% in rural areas, and 16.67% in suburban areas.

Table 7: Background characteristics of teachers involved in the learning circles

		N	%
Mean years of teaching experience M(SD)	12(4.33)		
Level of teaching	Primary 1	12	40.00
	Primary 2	0	0.00
	Primary 3	0	0.00
	Primary 4	10	33.33
	Primary 5	0	0.00
	Primary 6	8	26.67
Number of students in class	15 or fewer students	0	0
	16-20 students	0	0
	21-30 students	4	13.33
	31-40 students	13	43.33
	41-50 students	6	20.00
	51-60 students	7	23.33
	over 60 students	0	0
School location	Urban	12	40.00
	Rural	13	43.33
	Suburban	5	16.67

Instruments

They study used questionnaires, teacher reflection guide, field notes guide to collect data.

Data collection

Survey data was collected at the beginning of the learning circles with the use of questionnaires. Furthermore, teacher reflections, portfolios and observations data were also collected during the learning circles sessions from 2022 to early 2024. Surveys were also conducted at the end of the learning circles.

Data analysis

I used descriptive statistics such as frequencies, percentages, means and standard deviations to analyse data from the surveys.

Results

Results from the responses of teachers before the implementation of the learning circles and after the implementation have been presented. Results from the pre and post survey have been presented in the following section. This followed by presentation of results of teachers' and facilitators experiences of the learning circles. The results section ends with promising formative assessment practices identified during the learning circles.

Access to digital technology in the classroom

None of the classrooms reported having consistent Wi-Fi with each student equipped with a reliable device (see Table 8). Only one respondent (3.33%) reported having consistent Wi-Fi with several reliable devices such as computers or tablets. Three respondents (10%) reported having Wi-Fi available, but with only a few devices such as computers or tablets. Similarly, three respondents (10%) reported intermittent Wi-Fi access along with only a few reliable devices. Most respondents (76.67%) reported not having Wi-Fi or any devices such as computers or tablets available for student use. The finding reflects the intermittent or in most cases lack of internet connectivity in most of Ghana, especially in rural, remote and disadvantaged areas.

Table 8: Access to digital technology

	N	%
We have consistent WiFi and each student has a reliable device (eg. computer or tablet)	0	0.00
We have consistent WiFi and several reliable devices (eg. computers or tablets)	1	3.33
We have WiFi and a few devices (eg. computers or tablets)	3	10.00
We have intermittent WiFi and a few reliable devices (eg. computers or tablets)	3	10.00
We do no not have WiFi or devices (eg. computers or tablets) in the classroom	23	76.67

Medium of formative assessment knowledge

Responses from teachers on the medium of learning about formative assessment practices have been presented in Table 9. From the table majority of respondents (66.67%) learned about formative assessment through teacher education courses. Approximately 56.67% of respondents gained knowledge about formative assessment through professional learning initiatives. A significant percentage of the teachers (33.33%) learned about formative assessment through their classroom experience. Some teachers (26.67%) engaged in self-study to learn about formative assessment. Similarly, conversations with teacher peers were a source of learning for 26.67% of respondents. A smaller percentage (13.33%) reported learning about formative assessment through conversations with administrators.

Table 9: Teachers' medium of learning about formative assessment

	N	%
Teacher education courses	20	66.67
Professional learning initiatives	17	56.67
Classroom experience	10	33.33
Self-study	8	26.67
Conversations with teacher peers	8	26.67
Conversations with administrators	4	13.33
Other (please specify)	2	6.67

Confidence with using each formative assessment practices

Responses from teachers on their learning intentions and learning outcome have been presented in Table 10. From the table, majority of teachers (76.7%) were highly confident using child-friendly language to share learning goals with pupils, with 20% being somewhat confident. Furthermore, 93.3% of the teachers reported to be mostly confident and highly confident to the statement 'pupils are reminded about links between what they are learning

and the overall learning goals'. Teachers also reported to be mostly to highly confident of using success criteria related to learning goals are differentiated and shared with pupils.

Table 10: learning intentions and learning outcomes (PRE)

	Not at all confident	Slightly confident	Somewhat confident	Mostly confident	Highly confident	M (SD)
Learning goals are stated using words that emphasize knowledge, skills, concepts and/or attitudes.	1 (3.33)	-	2 (6.67)	11 (36.67)	16 (53.33)	4.37 (.89)
Pupils are reminded about links between what they are learning and the overall learning goals	-	2 (6.7)	-	10 (33.3)	18 (60.0)	4.47 (.82)
Child-friendly language is used to share learning goals with pupils.	-	-	1 (3.3)	6 (20.0)	23 (76.7)	4.73 (.52)
Success criteria related to learning goals are differentiated and shared with pupils.	1 (3.3)	1 (3.3)	6 (20.0)	18 (60.0)	4 (13.3)	3.77 (.86)
Pupils demonstrate that they are using learning goals and/or success criteria while they are working.	-	-	4 (13.3)	13 (43.3)	13 (43.3)	4.3 (.70)

Responses from post survey of teachers on teachers' confidence on formative assessment practices have been presented in Table 11. Generally, the teachers, confidence on learning intentions and outcomes have improved after going through the learning circles. For example, majority of the teachers (90%) reported that pupils demonstrated that they are using learning goals and/or success criteria while they are working. Furthermore, 55% and 45% of teachers were mostly confident and highly confident respectively when it comes to learning goals stated using words that emphasize knowledge, skills and concepts and/or attitudes.

Table 11: learning intentions and learning outcomes (POST)

	Not at all confident	Slightly confident	Somewhat confident	Mostly confident	Highly confident	M (SD)
Learning goals are stated using words that emphasize knowledge, skills, concepts and/or attitudes.	-	-	-	9 (45.0)	11 (55.0)	94.55 (0.51)
Pupils are reminded about links between what they are learning and the overall learning goals	-	1 (5.0)	1 (5.5)	6 (30.0)	11 (55.0)	4.42 (0.84)
Child-friendly language is used to share learning goals with pupils.	-	-	1 (5.0)	6 (30.0)	13 (65.0)	4.60 (0.60)
Success criteria related to learning goals are differentiated and shared with pupils.	-	1 (5.0)	3 (15.0)	12 (60.0)	4 (20.0)	3.95 (0.76)
Pupils demonstrate that they are using learning goals and/or success criteria while they are working.	-	1 (5.0)	1 (5.0)	13 (65.0)	5 (25.0)	4.10 (0.72)

Questioning and classroom discussion

Responses from the teachers at the beginning of the learning circles on questioning and classroom discussion have been presented in Table 12. From the responses in the table, the teachers reported to be mostly or highly confident using assessment to facilitate classroom discussion. For example, responses to the statement 'Assessment is used to facilitate classroom discussion' had 90% of teachers with the highest mean score (M=4.87, SD=0.43) who reported to be highly confident in its use.

Table 12: Teachers responses on questioning and classroom discussion

	Not at all confident	Slightly confident	Somewhat confident	Mostly confident	Highly confident	M (SD)
Assessment is used to facilitate classroom discussions.	-	-	1 (3.3)	2 (6.7)	27 (90.0)	4.87 (.43)
Questions are used to elicit pupils' prior knowledge on a topic.	-	-	-	9 (30.0)	21 (70.0)	4.70 (.47)
Pupils are able to share their questions during a lesson.	1 (3.3)	0 (0)	8 (26.7)	11 (36.7)	10 (33.3)	3.97 (.96)
Pupils' incorrect responses are used to guide teaching and learning.	1 (3.3)	1 (3.3)	6 (20.0)	7 (23.3)	15 (50.0)	4.13 (1.07)
Pupils can explain to others what they are learning.	0 (0)	0.00	10 (33.3)	7 (23.3)	10 (33.3)	4.00 (.88)

The confidence level of using assessment practices on questioning and classroom discussions after the learning circles have been presented in Table 13. The responses in the table indicate that teachers reported confidence level in using questioning and classroom discussions practices have not improved much. Teachers reported feeling mostly confident (15%) and highly confident (85%) for the statement 'Assessment is used to facilitate classroom discussion'. There were also similar responses from the post survey on the compared to the responses from the pre-survey results.

Table 13: Questioning and classroom discussions (post)

	Not at all confident	Slightly confident	Somewhat confident	Mostly confident	Highly confident	M (SD)
Assessment is used to facilitate classroom discussions	-	-	-	3 (15.0)	17 (85.0)	4.85 (0.37)
Questions are used to elicit pupils' prior knowledge on a topic.	-	-	-	6 (30.0)	14 (70)	4.70 (0.70)
Pupils are able to share their questions during a lesson.	-	2 (10.0)	4 (20.0)	8 (40.0)	6 (30.0)	3.90 (0.97)
Pupils' incorrect responses are used to guide teaching and learning.	-	-	3 (15.0)	7 (35.0)	10 (50.0)	4.35 (0.75)
Pupils can explain to others what they are learning	-	-	3 (15.0)	8 (40)	9 (45.0)	4.30 (0.73)

Feedback

Teachers' responses on feedback have been presented in Table 14. The results in the table unveiled a landscape of reported high confidence among teachers in several key aspects of their confidence level in terms of feedback. Notably, a significant majority expressed confidence in linking feedback to the original learning goals and success criteria (66.7%) and in utilizing assessment techniques to gauge student understanding (90%). Similarly, teachers reported confidence in leveraging diagnostic information from standardized tests to identify teaching and learning needs (43.3%). Despite variations, the overall pre-survey results underscored a prevailing sense of confidence among educators in their feedback and assessment practices.

Table 14: Responses on Feedback (pre-survey)

	Not at all confident	Slightly confident	Somewhat confident	Mostly confident	Highly confident	M (SD)
Feedback to pupils is linked to the original learning goal(s) and success criteria.	-	-	1 (3.3)	9 (30.0)	20 (66.7)	4.63 (.55)
Assessment techniques are used during lessons to help the teacher determine how well pupils understand what is being taught.	-	-	-	3 (10.0)	27 (90.0)	4.90 (.31)
Diagnostic information from standardised tests is used to identify strengths and needs in teaching and learning.	-	-	2 (6.7)	15 (50.0)	13 (43.3)	4.37 (.61)
Pupils are involved in providing information about their learning.	2 (6.7)	-	3 (10.0)	13 (43.3)	12 (40)	4.10 (1.06)
Pupils can explain to others what they are learning	-	-	5 (16.7)	10 (33.3)	13 (43.3)	4.29 (.76)

Results on Feeback for the post survey have been presented in Table 15. Results in table indicate that while the majority of teachers maintained high confidence in linking feedback to learning goals and success criteria (66.7%) in the pre survey, there was a slight decrease in the percentage of highly confident respondents (40.0%). A similar pattern was observed in utilizing diagnostic information from standardized tests, with a decrease in highly confident respondents to (40%). However, assessment techniques continued to elicit high confidence levels, with a majority remaining highly confident (75%). Notably, there were declines in confidence regarding student involvement in providing information about their learning (25%) and their ability to explain concepts to others (45%).

Table 15: Feeback (Post survey)

	Not at all confident	Slightly confident	Somewhat confident	Mostly confident	Highly confident	M (SD)
Feedback to pupils is linked to the original learning goal(s) and success criteria.	-	-	1 (5.0)	11 (55.0)	8 (40.0)	4.35 (0.59)
Assessment techniques are used during lessons to help the teacher determine how well pupils understand what is being taught.	-	-	3 (15.0)	2 (10.0)	15 (75.0)	4.60 (0.75)
Diagnostic information from standardised tests is used to identify strengths and needs in teaching and learning.	-	-	2 (10.0)	10 (50.0)	8 (40.0)	4.30 (0.66)
Pupils are involved in providing information about their learning.	-	2 (10.0)	3 (15.0)	10 (50.0)	5 (25.0)	3.90 (0.91)
Pupils can explain to others what they are learning	-	-	3 (15.0)	8 (40.0)	9 (45.0)	4.30 (0.73)

Peer-and self-assessment

Responses on teachers' current level of confidence with using peer and self-assessment have been presented in Table 16. The results in Table 16 reveal a nuanced landscape of confidence among teachers in various aspects of peer and self-assessment practices. While there was a moderate level of confidence in encouraging students to record their progress (36.7%) and maintaining visual records of their progress (43.3%), other practices such as providing opportunities for students to indicate the anticipated challenge of a lesson were more evenly distributed across various confidence levels, with a higher percentage reporting being not at all confident (26.7%) or slightly confident (16.7%).

Table 16: Peer-and-self assessment (pre-survey)

	Not at all confident	Slightly confident	Somewhat confident	Mostly confident	Highly confident	M (SD)
Pupils are given an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity	2 (6.7)	3 (10.0)	7 (23.3)	15 (50.0)	3 (10.0)	3.47 (1.04)
Pupils are encouraged to record their progress.	-	-	11 (36.7)	7 (23.3)	12 (40)	4.03 (.89)
Pupils are encouraged to use a range of assessment techniques to review their own work	-	3 (10.0)	9 (30.0)	11 (36.7)	7 (23.3)	3.73 (.94)
A visual record of pupils' progress is maintained to track and celebrate pupils' learning and show areas of/for development	2 (6.7)	2 (6.7)	5 (16.7)	8 (26.7)	13 (43.3)	3.93 (1.23)
Time is set aside during parent/guardian teacher meetings for pupils to be involved in reporting on some aspects of their learning	8 (26.7)	5 (16.7)	3 (10.0)	8 (26.7)	6 (20)	2.97 (1.54)

Teachers' responses from the post-survey on peer-and-self assessment have been presented in Table 17. While there were slight increases in confidence levels in some practices, such as encouraging students to use a range of assessment techniques to review their work (45%), others remained relatively stable. There was a shift towards higher confidence levels in practices such as maintaining visual records of students' progress and involving students in reporting on their learning during parent-teacher meetings. Post-survey results show shifts in confidence levels, with some practices experiencing slight increases in confidence while others remain relatively stable.

Overall, the data suggest a moderate to high level of confidence among teachers in implementing peer and self-assessment practices.

Table 17: Peer-and self-assessment (Post survey)

	Not at all confident	Slightly confident	Somewhat confident	Mostly confident	Highly confident	M (SD)
Pupils are given an opportunity to indicate how challenging they anticipate the learning will be at the beginning of a lesson or activity	1 (5.0)	1 (5.0)	5 (25.5)	9 (45.0)	4 (20.0)	3.70 (1.03)
Pupils are encouraged to record their progress.	0 (0)	3 (15.0)	6 (30.0)	10 (50.0)	1 (5.0)	3.45 (0.83)
Pupils are encouraged to use a range of assessment techniques to review their own work	2 (10.0)	2 (10.0)	3 (15.0)	9 (45.0)	4 (20.0)	3.55 (1.23)
A visual record of pupils' progress is maintained to track and celebrate pupils' learning and show areas of/for development	2 (10.0)	1 (5.0)	4 (20.0)	11 (55.0)	2 (10.0)	3.50 (1.10)
Time is set aside during parent/guardian teacher meetings for pupils to be involved in reporting on some aspects of their learning	3 (15.0)	3 (15.0)	9 (45.0)	3 (15.0)	2 (10.0)	2.90 (1.17)

Professional Development and Teacher Leadership Process

Responses on teachers' professional development and teacher leadership process have been presented in Table 18. The responses indicate a moderately positive perception regarding previous professional development undertakings among teachers. The teachers affirmed that professional development was linked with my professional priorities to support my students' learning (76.7%), provided useful, relevant content linked to my professional development priorities (70%), and involved inquiry and collaborative professional learning to develop my professional expertise (60%). However, certain areas necessitated enhancement, notably the need for tailored support considering professional experiences and the context of work (10%), as well as stronger support from school leaders (33.3%).

Table 18: Responses on teachers' professional development and leadership process (Pre survey)

Items	Not at all confident	Slightly confident	Somewhat confident	Mostly confident	Highly confident	M (SD)
Was linked with my professional priorities to support my students' learning	-	-	1 (3.3)	6 (20.0)	23 (76.7)	4.73 (.52)
Was differentiated to include consideration of my professional experiences and the context I am working	2 (6.7)	-	5 (16.7)	18 (60.0)	3 (10.0)	3.71 (.94)
Provided useful, relevant content linked to my professional development priorities	-	1 (3.3)	2 (6.7)	6 (20.0)	21 (70.0)	4.57 (.77)
Involved inquiry and collaborative professional learning to develop my professional expertise	-	-	3 (10.0)	9 (30.0)	18 (60.0)	4.50 (.68)
Provided funding, time, and expert resources to enable me to participate in professional development	2 (6.7)	2 (6.7)	7 (23.3)	11 (36.7)	7 (23.3)	3.66 (1.14)
Was supported by school leaders	4 (13.3)	4 (13.3)	3 (10.0)	7 (23.3)	10 (33.3)	3.54 (1.48)

While some metrics exhibited improvement, others remained relatively stable or demonstrated marginal declines (see Table 19). For instance, there was an uptick in the proportion of teachers indicating that professional development was aligned with their professional priorities (55%) and fostered inquiry-based and collaborative learning (30%). Conversely, support from school leaders exhibited a decline (20%).

Table 19: Previous professional development (post survey)

	Not at all confident	Slightly confident	Somewhat confident	Mostly confident	Highly confident	M (SD)
Was linked to my professional priorities to support my students' learning	-	-	2 (10.0)	7 (35.0)	11 (55.0)	4.45 (0.69)
Was differentiated to include consideration of my professional learning and development experiences and the context I am working in.	-	-	3 (15.0)	11 (55.0)	5 (25.0)	4.105 (0.66)
Provided useful, relevant content linked to my professional learning and development priorities.	-	-	1 (5.0)	11 (55.0)	8 (40.0)	4.35 (0.59)
Involved inquiry and collaborative professional learning to develop my professional expertise.	-	-	1 (5.0)	13 (65.0)	6 (30.0)	4 (20.0)
Provided funding, time and expert resources to enable me to participate in professional learning and development	-	3 (15.0)	3 (15.0)	9 (45.0)	4 (20.0)	3.74 (1.00)
Was supported by school leaders.	5 (25.0)	4 (20.0)	2 (10.0)	4 (20.0)	4 (20.0)	2.90 (1.56)

Teachers' and facilitators' experiences with learning circles

Responses from observations, teacher reflections with local facilitators and teachers during our Network event have been summarized and presented in this section. The network event brought together all teachers and facilitators involved in the learning circles in the selected three regions in Ghana to share their experiences. Some of the facilitators' experiences ranged from learning a lot from the teachers to improving learners' literacy skills. Others indicated that the learning circle programme has promoted their professional learning and to send them back to the classroom settings again. From selected excepts from teachers' reflections, the following are reflections of two teachers from the south and the north respectively:

A female teacher in Cape Coast Learning Circle

Topic: Empowering literacy: Enhancing Reading and Writing Skills for Primary one Learners

Formative assessment strategies

- Think Pair Share
- Classroom Observation
- Peer Teaching
- Thumbs Up and Down Strategy
- Letter and Sound Game Strategy
- Mini Interview

Improvement in learning

- Some Learners have built up confidence when it comes to the sounds since it's a daily routine
- Some Learners quickly want to raise their hands to try and read out a word or sound, even if they are not so sure.
- Other Learners have improved by moving to another level when it comes to the identification of the letter sounds during the mini-interview sessions
- Learners who lead during group sessions have improved when it comes to reading short passages to teach their peers.

Challenges

- I realized some Learners have the problem of identifying the same word outside the classroom or in another book; other Learners are improving but at a slower pace.
- Other Learners also miss the morning sessions because of lateness to school, but working on that with parents.
- There is also the need for more exciting print out to arouse their interest and remain positive on the fact that little effort been put in can help struggling Learners catch up

A male teacher in Ahafo Ano Learning Circle

Topic: Developing a strategy to improve primary four pupils' fluency in reading

The problem: I have found out that in my class, the pupils find it challenging to read even simple sentences

- *Strategies to improve:* Through my observations and consulting with some other teachers, we came out to agree that the pupils start from:
- letter identification
- letter sounds
- blended of letters
- calling and the word (blended letters)
- Reading
- *Methods:* phonics, linguistic method (whole word), pick and draw

The strategies I use to improve learners' reading

- Read a page a day with learners; learners are asked to read a flip of text. If they can read the first page and move to the second page, they will be given a prize
- Reading circle: another strategy with this, learners are grouped, and a text is given and in turns to see which group comes first
- Pick and act with cardboard where learners come in turn pick and then read the text and perform as it said in the text.
- The learning circle has made teaching easier than before.
- It has improved method of teaching and assessment.
- More of activity base teaching
- The project has improved learners confident in learning.
- It has improved learners to learn on their own.
- We discussed with colleague teachers in the school and outside school for more information.
- Through Professional learning community (PLC) sessions, cluster and circuit meetings to talk about the success of the project to them.

Some recommendations were made how to improve and sustain the teacher-led formative assessment project.

- Peer assessment and online assessment should be encouraged in the project.
- Record keeping and consultation of the project should be encouraged through the improvement in learners' outcome.

- Collaboration of the project with colleagues.
- Teachers who were not interested in it now have the interest in the project.
- It makes assessment of learners difficult due to the class size.
- Political influence into the education system.

Promising teacher-led formative assessment practices

The following section presents some examples of promising teacher-led formative assessment practices the selected teachers undertook during the implementation of learning circles across the country. These excepts were extracted from teachers; Vignette:

Vignette 1

My name is **Hellen Abane**, I am a teacher of Zaare experimental primary school Bolgatanga municipal, I teach Basic four (4). Last year I began developing strategies for peer-assessment on mathematics lessons involving the concept of addition by regrouping in my classroom.

Firstly, I asked learners to do simple addition test 198 + 282, 942+179. Then in pairs they marked each other's answers against the number of the correct answers I gave them, I discussed with them after they have marked each other's work and explained to them why some of them had some of the questions wrong or made mistakes, latter, I asked learners to exchange their books and mark with the correct answers written on the board, some of the learners were able to get the concept and they had good marks but some could not, after I joined the learning circle, I planned my project to develop peer-assessment strategies further, I asked two colleagues to collaborate with me, we met to discussed what I had already done and what we could do together, we agreed that, we would try similar approaches but with different learning tasks.

Emmanuel, would focus on multiplication of 3-digit numbers Bash would focus on subtraction, and I would focus on addition of three-digit numbers. our common approach would include:

a) Explain the learning objective for the task.
b) Create a mark scheme that would include specific criteria
c) Ask learners to assess each other's work and then discuss the learning task

We continued to meet every Wednesday after PLC (Professional learning community.) meeting to talk about how our peer-assessment strategies were going.

We had agreed that each of us would keep notes about how the learners reacted and if the quality of their work was improving.

We also had class discussion to get the views of the learners at the end of a full term, I was able to make a summary of the impact of our work, All the three of us saw that once the learners get use to the idea of assessing their friends work, they were able to improve on their learning skills. Also, the quality of their learning tasks was greatly improved.

Moreover, we found that creating mark schemes for the learners helped us to think more deeply about the learning objectives and success criteria.

Last but not the least, we enjoyed our collaboration and learned a lot about teaching and learning through this project, Peer-assessment is now firmly established in our school Colleagues who were not directly involved in projects are now interested in learning from what we have done, we plan to holed a discussion with the staff at the beginning of the next term so that we can share what we have developed.

Vignette 2

VIGNETTE – GLORIA JOYCELYN AMISSAH

I was worried that learners in grade 4 could not respond to questions after science lessons, after I have given them enough time to think and respond. I then consulted a colleague in grade 3 who handled them the previous academic year to get her ideas on the strategies she used. I was then introduced to grouping them into their section / house with these colours; red, yellow, blue, and green.

They then compete among themselves. I really liked this strategy because they were responding to question posed to them, but after a while, I realized that few learners only participated in answering the questions for the whole group, so I inquired from the learners who were not contributing to tell me why they always kept mute. The majority of them responded that they did not understand most of the concept taught since the lessons were delivered in abstract or in absent of teaching resources. This made me come up with the idea of providing them with teaching and learning resources so they have first-hand experiences in any concept taught.

Also, where there was the need to watch videos before they practice I did so. This made them participate fully in any practical experiment I gave them and as the saying goes "when I do I remember". The learners were more comfortable and confident to answer any question posed to them.

In view of this, I decided to develop my formative assessment observation tool known as Learner's Objective Achievement (LOA) sheet where I observe and record them during practical lessons to track their performances. They also have a sheet to tick if an experiment is successful or otherwise and they explain why they think so.

I then invited the upper primary teachers to observe my strategy and they really liked it and have adopted it in their science lessons and the results are massive. The only challenges we face is when there is power outage or lack of internet connectivity to watch practical videos.

Now learners who used to be quite in class, now participate fully in groups and individually to present their findings on posters in every lesson they do. The presentation is made such that each learner is tasked to present a part of what they were asked to do. This has become a breakthrough for all upper primary teachers and learners and we have adopted it. This strategy in our pedagogy after informing the principal of the enormous benefit to the teaching and learning process.

Vignette 3

My name is Richard Appiatse Sam. I am a member of the Teachers-led learning Circles for Formative Assessment Learning Circle. I teach at Aboom A.M.E Zion 'C' Basic School in Cape Coast, Ghana.

Last year, I had the privilege to be part of the program. During this time, I began developing strategies for think-pair-share assessments in my classroom. Initially, I grouped students and tasked them with reciting multiples of 2 and 3 to ascertain their understanding of multiplication concepts. Based on each group's performance, I then facilitated discussions to identify individual student performance and their perceived challenges. My goal was to assess their grasp of the underlying concepts behind multiples. While some groups actively engaged in discussing their mistakes, others did not. Subsequently, I assigned each group the task of skip counting forward by 2, 3, 4, 5, and 6, such as correctly skip counting forward the first 12 multiple numbers for each given number. Most groups had productive discussions to improve task performance, with only a few encountering difficulties within their groups.

After joining the Learning Circle, I formulated a project aimed at enhancing student interest and performance by leveraging the concept of multiples through think-pair-share strategies. Collaborating with two colleagues from the mathematics department at J.H.S., we convened to review my initial efforts and brainstorm potential collaborative endeavours. we agreed that we would employ similar methodologies but focus on different learning tasks. Mr. Oyama, a Japanese volunteer, would lead activities centred on building the concept of multiplication, while Mr. Williams would address applying multiplication to solve mathematical problems. My role would entail ensuring students effectively utilize the concepts, as I would have frequent interaction with them in the classroom. Our shared approach included clearly outlining the learning objectives, establishing a structured learning routine, facilitating peer assessment, and engaging in post-task discussions. Over two academic terms, we implemented and refined these strategies long the way to enhance effectiveness.

We continued our weekly Thursday meetings to evaluate the effectiveness of our strategies. we facilitated class discussions to gather student perspectives. After numerous weeks, I compiled a summary of our work's impact. We collectively observed that more than half of the 42 students had grasped the multiplication concept through the skip counting forward method. Many students demonstrated enhanced recitation abilities and progressed from their previous levels. They embraced the idea of learning from peers through the think-pair-share approach, which heightened their interest in the subject. Furthermore, incorporating games and diverse methodologies prompted deeper reflection on learning objectives and success criteria. Overall, we found the collaboration enjoyable and enlightening, providing valuable insights into teaching and learning.

We believe that the think-pair-share approach is now firmly established in our school culture. Colleagues who were not directly involved in the project have expressed interest in learning from our experiences. We held discussions and introduced them to our methods during the professional learning community (PLC) sessions to share our developments.

Discussion

The findings from the study on teacher-led formative assessment practices in Ghana's basic schools offer profound insights into the evolving pedagogical strategies that influence educational outcomes. This discussion explores how formative assessment practices contribute to educational reforms and the broader implications for teaching and learning in Ghana.

Firstly, the research highlights a significant utilization of formative assessment such as 'think pair share'. Letter sound game strategy', ;learners' achievement observation tool' etc. among basic school teachers in Ghana. Teachers are increasingly integrating formative assessments into their instructional strategies, which is a positive development toward enhancing educational quality (Kanjee, 2020; Owusu-Acheampong & Kwapong, 2021). Formative assessments, as evidenced in the study, enable teachers to gather feedback about student learning in real-time, allowing for immediate adjustments in teaching methodologies. This dynamic adjustment is crucial for accommodating diverse learner needs and promoting an inclusive educational environment. The teacher survey revealed a general increases teachers' confidence in using formative assessment practices such as 'peer-and-self assessment', 'feedback', 'questioning and classroom discussion.' After going through the learning circles programme for about one year.

Furthermore, the study brings to light the crucial role of professional learning communities (PLCs) in supporting the implementation of formative assessment practices. PLCs serve as a platform for teachers to collaborate and share effective assessment strategies, which is essential for fostering a culture of continuous improvement in teaching practices (Admiraal et al., 2021). The learning circles offered a sustained platform for sharing innovative formative assessment practices to improved learning. The findings corroborate other studies (Admiraal et al., 2021; Tarnanen et al., 2021) that have shown that the use of PLCS to improve formative assessment strategies to improve learning.

However, the findings also underscore challenges related to resources and training that hinder the full-scale implementation of formative assessments. Many teachers still face significant hurdles due to inadequate access to necessary technological tools and professional development opportunities. This gap is particularly pronounced in rural and underserved areas, where the lack of infrastructure limits the effective use of digital tools in educational assessments. Addressing these disparities is critical for ensuring that all students, regardless of their geographical location, have access to high-quality education facilitated by well-trained and resourceful teachers.

Additionally, the study reveals a disconnect between policy initiatives aimed at enhancing educational access and quality, and their actual implementation on the ground. Despite, the implementation of the standards-based curriculum by the Ministry of Education in 2019, there remains a need for more targeted strategies that directly address the barriers to effective formative assessment. These include policy directives that prioritize ongoing teacher training, equitable resource distribution, and enhanced ICT integration in schools.

Lastly, the differential impacts of formative assessment practices on student outcomes highlight the necessity for a more structured approach in teacher training programs. The variability in the effectiveness of these practices suggests that while some teachers are proficient in leveraging

formative assessments to improve student learning, others may not be as effective. This variation calls for a standardized approach in pre-service and in-service teacher training programs to ensure that all teachers have the requisite skills to implement these practices effectively.

Conclusion

The study investigated teacher-led formative assessment practices in basic schools across Ghana, revealing both progress and persistent challenges. It was found that teachers, through formative assessment practices, can enhance student learning achievement significantly. These practices fostered a more engaged and responsive learning environment, helping students meet learning objectives more effectively. Additionally, the integration of the teacher-led learning circles into professional learning communities (PLCs) sessions of the schools significantly contributed to the enhancement of teachers' formative assessment practices, thereby indirectly boosting student performance.

Policy Implications for Basic Education in Ghana

The findings from this research underscore several policy implications that could further enhance the educational landscape in Ghana: Policymakers should consider bolstering initial teacher education and ongoing professional development to include more extensive training in formative assessment practices. This could ensure that all teachers are equipped with the skills necessary to implement these strategies effectively. There is a critical need for improved educational infrastructure, especially in rural and underserved areas. This includes not only physical infrastructure but also technological enhancements to facilitate the integration of digital tools in teaching and learning processes. The government and educational authorities should support and sustain the implementation of PLCs in the currently standards-based curriculum in basic schools to foster a culture of continuous learning and collaboration among teachers.

Limitations to the Study

The study involved a limited number of teachers from selected regions, which may not comprehensively represent the entire teaching landscape of Ghana. Future studies could expand the sample size to include a more diverse and representative group of teachers across all regions. Furthermore, given the varying levels of access to technology across schools, particularly in rural areas, the findings on the use of digital tools for formative assessment may not be universally applicable.

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Published by Education International - Sept. 2024