

## In-Service Education and Training and Teacher Performance in Ghanaian Senior High Schools

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### Abstract

*This study investigated the nature and types of In-Service Education and Training (INSET) programmes and teacher performance in some selected Ghanaian Senior High Schools (SHSs). A concurrent mixed methods design was employed as the research design for the study. A total of 102 respondents, comprising 97 teachers, 4 headmasters and a district training officer, participated in the study. Teachers were selected using a simple random sample; headteachers and district training officers were also chosen using purposive sampling techniques. Questionnaires and semi-structured interview guides were used to gather the data. Data was analysed using descriptive, inferential statistics (one-way ANOVA test) and thematic coding analysis. The study revealed that, though INSETs were not frequently organised in the district, the few INSETs took the nature of seminars, workshops, and refresher courses. Also, results indicated curriculum-related INSET was the most effective INSET type, and positively impacted teachers' performance. These impacts depend on the nature and mode of implementation of INSET types. The study concludes that targeted, well-structured, and subject-specific training is key to improving the effectiveness of teacher professional development and performance. The study recommends that the Ghana Education Service (GES) organises more frequent, curriculum-related INSETs for teachers, do periodic mandatory training, differentiated training and use practical-based INSET strategies like demonstration. Implications for policy and practice are discussed.*

**Keywords:** *In-Service Education and Training (INSET) programmes, Professional Development, Public Senior High Schools, Teacher Performance.*

### Introduction

To remain relevant and responsive, organisations need to engage in continuous human resource development (Nicole, 2015), of which In-Service Education and Training (INSET) programmes are a key component. A

teacher, just like any other employee, is developed from time to time through INSET (Adentwi, 2005). Medard (2017) explained INSET as all forms of education and training given to teachers and education administrators following initial professional training. INSET is also called continuous professional development, staff development, and professional development (Antwi et al., 2016; Ertürk, 2021; Osamwonyi, 2016). The Ghana Education Service (GES) owes its members an ongoing INSET. Adentwi (2005) posits that the preparation of teachers for their jobs does not end with their pre-service education at the college or university. It must be a career-long affair, hence the need for teacher INSET. According to Osamwonyi (2016), it is imperative to provide sound INSET for teachers to remain current to meet the demands of education in the global economy.

On the other hand, teachers' performance determines a person's level of success in a task and the factors that influence their success (Ertürk, 2021). In the educational system and many other occupational groups, teacher performance evaluation and function are assessed based on production results and customer satisfaction, which can give an idea about performance (Özgenel & Mert, 2019).

Globally, studies that have explored in-service training and teachers' performance in secondary schools have shown that successful in-service experiences impact teachers' work (Honore et al., 2022; Mahmood et al., 2022). Similarly, other studies revealed that in-service training and teachers' performance in secondary schools also showed that external courses and industrial experiences impacted teachers' work (Adika & Mung'ala, 2018; Antwi et al., 2016; Osamwonyi, 2016). In Ghana, findings on INSET and teachers' performance revealed that poor performance of teachers was due to a lack of frequent in-service training, lack of incentives and motivation, and improper supervision (Antwi et al., 2016; Asare et al., 2012).

Despite several Government of Ghana teacher training and development programmes, policies, and reforms aimed at improving teacher education, In-service teachers' performance remains low at the SHS level. Studies have bemoaned the disconnect between theory and practice, given the professional development programmes conducted for teachers and aimed at improving teachers' competencies in the classroom context (GES, 2007; Sims & Fletcher-Wood, 2021). In particular, at the SHS level (Antwi et al., 2016; Hervie & Winful, 2018) have argued for the provision of INSETs to provoke teachers' instructional practices to benefit the students. In addition, translating knowledge gained from such programmes into classroom practices has been

problematic. This is because planning and implementing INSET programmes remains a significant challenge in secondary schools (Honore et al., 2022).

Given the disconnect between teachers' performance in the classroom learning environment and students' learning outcomes at the SHS level, this study seeks to understand the impact of INSET on teacher effectiveness. Also, there is no specific study on the nature of INSETs on teachers' performance in public SHS in the Awutu-Senya District (ASWD). Further, the limited studies attributed the abysmal performance of educators to poor implementation of INSET (Antwi et al., 2016; Hervie & Winful, 2018). In response to this research gap, the current study sought to fill the void. Thus, this study investigated the nature and type of INSET programmes that affect teachers' performance in SHSs. To attain the study's purpose, these specific objectives were addressed:

- i) To examine the nature of INSET programmes for public Senior High Schools teachers;
- ii) To establish the types of INSET programmes conducted for public SHS teachers;
- iii) To investigate the effectiveness of INSET programmes on teachers' performance.

This study significantly contributes to educational management and policymaking by supporting efforts in human resource development and management. Educational management supports the human resource development management to procure a quality workforce for the education enterprise.

## **Literature review**

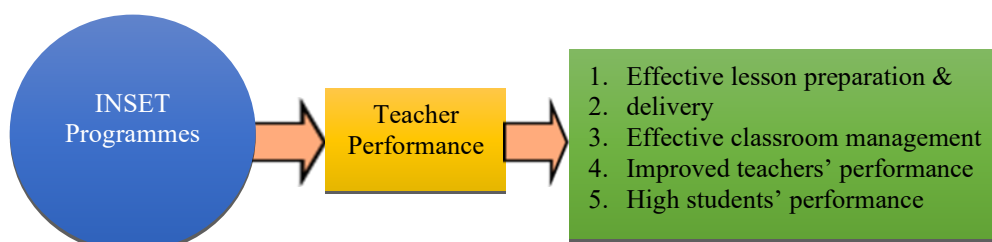
### ***Theoretical framework***

This study underpins the constructivism theory advanced by Vygotsky, Piaget, Dewey, Vico, Rorty, and Bruner (Kurt, 2021). The theory contends that knowledge is constructed as a group through interaction and knowledge-building. Thus, knowledge and practices built by teachers are intertwined with their own world experiences and those shared with their students. Becker (2002) argues that a theory of teaching and learning that addresses the issue of knowledge and the application of knowledge is the theory of constructivism, which can significantly improve INSET learning for teachers. Constructivism is a theory of knowledge-building based upon the pioneering work of Jean Piaget and Lev Vygotsky (Becker, 2002). Piaget's theory led to the conclusion that learning is not something that is "received" from someone (i.e., the teacher), but learning is "constructed" by the learner. Learning is

therefore achieved through active engagement by the learner. This active engagement depends on the learner's prior knowledge" (p. 2).

Constructivism informs INSET through contextual, collaborative, and experiential learning. School-Based INSET tackles real school challenges, while Cluster-Based INSET enables peer knowledge construction. Workshops and lesson studies promote hands-on, reflective participation. During INSET, teachers connect new strategies to prior practice, collaboratively solve classroom issues, and engage in iterative reflection, enhancing pedagogical skills, professional autonomy, and sustainable improvements that strengthen teaching effectiveness and student outcomes (Vygotsky, 1978; Avalos, 2011; Darling-Hammond et al., 2017). Thus, Constructivist theory was anchored on the potency to assist in the human resource development of GES staff, especially teachers, through INSETs to enhance their capacity, who in turn train or educate others.

**Figure 1:** Conceptual framework



**Authors' Construct (2020)**

The conceptual framework depicts the assumption that there is a conceptual link between the nature of INSET programmes and teachers' performance in this study. It is assumed that the nature and type of INSETs impact teachers' performance (which results in effective lesson preparation & delivery, effective classroom management, improved teachers' performance, and high students' performance). Thus, the human capital of teachers is enhanced and reflected in the following by-products, as shown in the conceptual diagram. The Constructivism theory informs the study (Becker, 2002; Kurt, 2021).

### ***Concept and nature of INSET programmes for teachers***

Osamwonyi (2016) explained INSET as all the relevant courses and activities a serving teacher may engage in, be it formal or informal, to upgrade themselves personally, professionally and academically. INSET programmes, as described by Adentwi and Baafi-Frimpong (2010) and Osamwonyi (2016), encompass various professional development activities for teachers.

These include *courses*, which may be short or long, aimed at providing specific skills or enhancing knowledge. *Committees* involve five or more members collaboratively addressing complex problems beyond the capacity of the whole staff. *Conferences* are academic gatherings where invited speakers present on topical or controversial issues, encouraging participants to listen, question, and discuss both formally and informally. *Meetings* serve as platforms for critical discussions and investigations of current professional issues. *Professional reading* entails engaging with journals, magazines, and other educational resources for continuous learning. *Lectures, seminars, and symposia* update teachers on new concepts and practices, while *retreats* allow groups to withdraw to secluded environments to reflect and deliberate on key issues. Finally, *workshops* provide hands-on skill acquisition in moderate-sized groups, often guided by expert facilitators (Adentwi & Baafi-Frimpong, 2010; Osamwonyi, 2016).

### ***Types of INSET programmes***

INSET programmes can be categorised into several types based on their purpose and mode of delivery (Adentwi, 2005; GES, 2008). *INSET undertaken at the initiative of the individual learner* occurs when a practising teacher engages in self-directed learning, such as professional reading or research, to enhance their knowledge or solve job-related problems. *Short-lived formal INSET* includes workshops, seminars, lectures, conferences, refresher, and induction courses organised to update teachers' knowledge and skills, usually lasting a few days or weeks. These may or may not provide certificates or contribute to career advancement. *Award-bearing INSET* involves structured academic or professional training, either full-time or part-time, leading to certificates, diplomas, or degrees. *INSET for unqualified teachers* is designed to retrain newly recruited or sub-qualified teachers to meet basic professional standards.

Similarly, *INSET to upgrade teachers* focuses on advancing sub-qualified or pupil teachers to higher professional grades after additional training. *INSET for new roles* equips qualified teachers for specialised duties such as school administration, guidance and counselling, continuous assessment, or serving as trainers of trainers. Finally, *curriculum-related INSET* introduces teachers to new curricular innovations or supports the implementation of educational reforms, ensuring teachers are well-prepared to deliver updated learning experiences effectively (Adentwi, 2005).

*School-Based INSET (SBI)* is organised within schools to address critical needs or deficiencies identified by teachers, heads, or school support officers

(GES, 2008). *Cluster-Based INSET (CBI)* brings together two to five schools to share best practices and challenges under the guidance of school heads (Prempeh, 2011). *External INSETs* are offered by external bodies like the Canadian Teachers Federation, while *internal INSETs* occur at district or school levels (GES, 2008; MOE, 2010). *Computer-Based Training (CBT)* delivers interactive, computer-mediated instruction for skill-specific training, widely used in institutions with high success rates (Learning Media, 2010; Boye, 2010). INSETs are also classified by purpose: induction, foundation, on-the-job, refresher, and career development training or by content, ranging from basic awareness to skill proficiency and transfer to classroom practice (Banki, 2017; Gabriel-Wettey, 2015).

### ***INSET programmes and teacher performance***

INSET programmes not only improve teacher performance in secondary schools in terms of teaching expertise, but they also advance knowledge and upgrade the supply of information for educating students. INSET helps them maintain better classroom discipline while improving teacher confidence in their profession through methodology and student interaction (Hervie & Winful, 2018; Norwani et al., 2017). Medard (2020) opined that INSET for teachers plays a critical role in the education system because evidence shows that teacher training and education are essential. Research and reports have highlighted its roles in international organisations and governments.

On teachers' performance, Nayak (2011) considered it as the level of effort an individual teacher puts in an endeavour to complete a task successfully, by considering the quality and quantity of the service. The concept seeks to make known the teacher's work output as evidence of work done. According to Erturk (2021), assessing a teacher's performance determines a person's level of success in a task and the factors that influence their success. In the education system and many other occupational groups, teacher performance evaluation and function are assessed based on production results and customer satisfaction.

Stronge (2013) outlines a two-tiered framework for assessing teacher performance: performance standards and performance indicators. The seven standards include data-driven planning, instructional delivery, assessment, learning environment, communication, professionalism, and student achievement. Indicators focus on instructional planning, pedagogy, and classroom management. Additionally, the GES nationwide INSET programme on SBI/CBI Lesson Observation Chart (GES, 2008) identifies five performance rating levels: Poor, Needs Improvement, Satisfactory, Good, and Excellent, to evaluate teaching effectiveness in schools.

Michael (2017) highlights the importance of training in new skills and modern methodologies for effective teaching. Research by the UNESCO Institute for Statistics (2006) on Kuchinerla School for Girls in Andhra Pradesh, India, shows that in-service training positively impacts teachers' performance. Similarly, Egert et al. (2020) emphasise that teachers' effectiveness directly affects the quality of education. INSETs (in-service education and training) help teachers enhance their pedagogical strategies, classroom management, and teaching methods. Asomah et al. (2023) further demonstrate the effectiveness of INSETs in improving the pedagogical content knowledge (PCK) of in-service mathematics teachers (IMTs), noting significant improvements post-training despite initial challenges. Despite these positive outcomes, teacher performance remains low in certain districts, particularly in the ASWD. Hence, a need to examine the nature and implementation of INSETs in Ghana, as a link between effective training and improved teacher performance can be hypothesised.

## **Methodology**

### ***Research design***

This study employed a mixed-methods research approach and a concurrent mixed methods design because the design generally uses separate quantitative and qualitative strategies to offset the inherent weaknesses in one method with the strengths of the other method (Creswell & Creswell, 2018). The researchers obtained different but complementary data on the nature of INSETs and teachers' performance in public SHS in the ASWD. The quantitative data offered a better understanding of the problem, while the qualitative data helped clarify the quantitative results obtained from the study data (Creswell & Creswell, 2018). The design was deemed fit for the study because it allowed for the simultaneous collection of quantitative and qualitative data, merged the data, and used the results to understand the research problem (Creswell & Creswell, 2018).

### ***Population and sampling***

The study was conducted in the ASWD, one of the district assemblies in the Central Region of Ghana. The population of 130 for this study comprised all district public-school teachers, headmasters and GES office staff. A total sample size of 102 respondents was used for the study. The quantitative part of the study, with 97 respondents, was selected using Krejcie and Morgan's (1970) criteria for selecting sample size using a simple random sampling technique from the total population (Cohen et al., 2007). Also, the qualitative part, 4 Headmaster/mistress (HM) and a District Training Officer (DTO), making 5, were purposively selected for the interview sessions. The criteria

for choosing 4 HM and a DTO were based on their years of experience (at least 10 years); be directly responsible for training and supervising teachers' work, and be 'information rich' (Creswell & Creswell, 2018).

### ***Research instrument***

A self-constructed structured questionnaire consisting of three parts was used to collect quantitative data. Section "A" consisted of biographic data, section "B" sought respondents' views on the nature of INSETs, section "C" on types of INSETs, and section "D" on the effectiveness of INSETs on teachers' performance, all containing 23 items. A five-point Likert scale (Very Low-1, Low-2, Average-3, High-4, Very High-5) was used in the study. Also, the qualitative phase entailed using semi-interviews (4 items) on 4 HM and a DTO to provide the researchers with their perspectives on the nature and type of INSETs and teachers' performance. The technique brings the researchers into direct interaction with the study participants to understand the nature and types of INSET and teachers' performance.

### ***Validity and reliability of the instrument***

Validity was addressed in the study as data were gathered by quantitative and qualitative means, achieving triangulation to improve study rigour. Reliability was attained through pilot testing of the instrument in a district with similar characteristics. The feedback helped to fine-tune the instrument for the actual study. For the qualitative part of the study, the researchers employed member checking to safeguard the credibility of the results (Creswell & Creswell, 2018).

### ***Ethical and Data Collection Procedure***

Questionnaires were distributed to the consenting teachers in the selected schools. Prior to collecting data, ethical approval was obtained from the Ghana Education Service, and participants gave informed consent. The researchers retrieved all the 95 completed questionnaires, which allowed the informants a two-week wait time. To garner qualitative data, the researchers conducted a 25-minute face-to-face interview with each of the 4 HM and the DTO. Interviews were audio-recorded and handwritten to prevent data loss. Also, pseudonyms were given to all interviewees to safeguard respondents' anonymity.

### ***Data analysis***

First, quantitative data were organised and analysed using SPSS 24.0. Frequencies and percentages were used to display biographic data and address research questions. A one-way ANOVA was conducted to determine the most effective INSET type on teachers' performance. Secondly,



qualitative data were coded and thematically analysed in relation to the research questions in the study. The researchers immersed themselves in the data through repeated reading of the documents and assigned codes to the data (4 SHS Headmasters/mistresses-HM1, HM2, HM3, HM4 & District Training Officer-DTO), identifying categories which are related to different codes, and describing codes under each of the categories in detail (Creswell & Creswell, 2018).

## Results

### *Respondents' biographic data*

The biographic information of the respondents showed that gender, highest professional qualification, and length of teaching experience, which is proof of their participation in INSETs, are relevant to determine whether INSET influences teachers' performance. Also, it indicates that of the 100 respondents, 62.1% of SHS teachers were males, and had attained their highest professional qualification (Bachelor's degree). Moreover, only two of the SHS teachers, 2.1% have HND certificates. Further, 23.2% of the participants have 'Master's degrees. Again, the bio data showed that the majority of teachers, 48.4%, have been teaching between 11 and 15 years.

### *Research Question 1: What is the nature of INSET programmes for public SHS teachers?*

**Table 1:** Distribution of the nature of NSET programmes

Items	Frequency	Per cent (%)
<b>Nature of INSET programmes</b>		
Seminars & workshops	68	72.0
Refresher courses	15	16.0
Conferences	7	7.0
Further studies	5	5.0
<b>Total</b>	<b>95</b>	<b>100</b>
<b>Other characteristics of INSET programmes</b>		
External	10	10.5
Internal	22	23.2
School-based INSET (SBI)	56	58.9
Cluster-based INSET (CBI)	7	7.4
<b>Total</b>	<b>95</b>	<b>100</b>

Results from Table 1 revealed that most INSETs (72.0%) took the nature of seminars and workshops. The majority (58.9%) said INSET took the form of school-based (SBI) in the district. The qualitative data gathered through interviews aligns with the quantitative data above, as respondents shared that:

The district education office conducts internal INSETs for teachers. This comes in the form of Cluster-Based INSET and School-Based INSET.

External INSETs are occasionally organised in the district. These are usually organised in the form of workshops, seminars and induction services. ...to either update the knowledge, skills and attitude of teachers. (HM2).

Our INSETs usually are organised in the form of workshops, seminars, refresher courses and induction services. This is done to update teachers' knowledge, skills and introduce them to new trends in education, curriculum and methodologies in order to adjust and cope with the changing demands of their job (DTO).

Three of the HM2, HM3, HM4, and the DTO from the education office who took part in the interviews were unanimous on the nature of INSETs as internal and external. However, one HM shared a contrary view, which was apparent in the quote below:

The district education office conducts only internal INSETs for teachers. This comes in the form of School-Based INSET and Cluster-Based INSET. Even though the internal INSETs are occasionally organised in the district and are mainly in the form of workshops and seminars (HM1).

The responses of HM1 indicated that teachers in the ASWD do not benefit from INSETs from the GES equally. Internal INSETs are those organised within the district for teachers. They may be SBI or CBI as posited by HM2. External INSETs are those organised by GES or bodies outside the district; such INSETs may come from national, regional, and other NGOs like MOE, JICA, and CFT.

## **Research Question 2: What are the types of INSET programmes conducted for public SHS teachers?**

**Table 2:** Distribution of types of INSET programmes

	Frequency	Percent (%)
<b>Types of INSET programmes are organized</b>		
INSET for the unqualified teachers	6	6.3
INSET to upgrade teachers	25	26.3
INSET for new roles	6	6.3
Curriculum-related INSET	58	61.1
<b>Total</b>	<b>95</b>	<b>100</b>
<b>Types of INSET programmes considered most effective</b>		
INSET initiated by individual teachers	2	2.1
Short-lived formal INSET	17	17.9
Award-bearing INSET	5	5.3
Curriculum-related INSET	71	74.7
<b>Total</b>	<b>95</b>	<b>100</b>

Table 2 indicates the INSET types that exist and those that are mostly organised for teachers in the ASWD. The data indicated curriculum-related INSET type (61.1%) as the most organised INSET. Also, the majority (74.7%) of the respondents believed that the most effective INSET for SHS teachers was the curriculum-related INSET. About the qualitative data gathered through interviews with the four public SHS heads (HM1, HM2, HM3, HM4) and the DTO on types of INSETs used in the ASWD. The responses confirmed the facts stated in the qualitative analysis above. Again, whereas HM2, HM3, HM4, and the DTO agreed that curriculum-related INSETs are the most suitable INSETs for teachers to deepen their understanding of the curriculum, HM1, in answering the same question, however, remarked:

There are many types of INSET programmes for different categories of teachers. However, professional teachers who already know the ins and outs of teaching and learning need INSET for new roles to enhance their administrative position beyond their teaching roles (HM1).

HM1, however, thinks INSETs for new roles are the most appropriate for professional teachers.

### **Research Question 3: How effective have INSET types been on the performance of public SHS teachers?**

**Table 3:** Ratings of the effectiveness of INSET types on teachers' performance in the district

<b>Effectiveness' of INSETs on Teachers' Performance</b>	<b>Very Low (1) N (%)</b>	<b>Low (2) N (%)</b>	<b>Average (3) N (%)</b>	<b>High (4) N (%)</b>	<b>Very High (5) N (%)</b>
INSET for the unqualified teacher	12(12.6)	40(42.6)	7(7.4)	21(22.1)	15(15.8)
INSET to upgrade teachers	2(2.1)	12(12.6)	4(4.2)	40(42.1)	37(38.9)
INSET for new roles	7(7.4)	15(15.8)	5(5.3)	52(54.7)	16(16.8)
Curriculum-related INSET	2(2.1)	3(3.2)	2(2.1)	51(53.7)	38(44.2)
INSET initiated by individual teachers	9(9.5)	14(14.7)	3(3.2)	34(35.8)	35(36.8)
Short-lived formal INSET	14(14.7)	16(16.8)	2(2.1)	40(42.1)	23(24.2)
Award-bearing INSET	7(7.4)	6(6.3)	7(7.4)	37(38.9)	37(38.9)

### **ANOVA analysis of the effectiveness of INSET types on teacher performance**

The purpose of the ANOVA test was to determine whether the different types of INSET programmes significantly differ in their effectiveness in improving public Senior High School teachers' performance.

**Table 4:** ANOVA test

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-Statistic	P-Value
Between Groups	120.798	6	20.133	13.93	$5.98 \times 10^{-15}$
Within Groups	951.052	658	1.445	-	-
<b>Total</b>	<b>1071.850</b>	<b>664</b>	<b>-</b>	<b>-</b>	<b>-</b>

The results from Table 4 of the ANOVA test show that significant differences exist. The F-Statistic = 13.93 and the P-Value =  $5.98 \times 10^{-15}$  indicate a Statistically Significant Difference in the effectiveness of different INSET types. This suggests that not all INSET programmes are equally effective in enhancing teachers' performance. Also, the Sum of Squares Between Groups (SSB) = 120.798 shows that the different INSET types explain a considerable amount of variance in teacher performance. Further, the Sum of Squares Within Groups (SSW) = 951.052 still accounts for substantial variability within individual INSET types, suggesting that other factors (e.g., teaching experience, motivation) influence teacher performance. Also, following the Tukey Post Hoc Test, pairwise comparisons among the seven INSET types revealed statistically significant differences ( $p < 0.05$ ). The results showed that Curriculum-related INSET, INSET to upgrade teachers, and Award-bearing INSET were rated significantly more effective than INSET for the unqualified teacher, which was the least effective. These findings suggest that professional development efforts should prioritise the more impactful INSET types. Figure 2 below presents a visual summary of the effectiveness ratings, reinforcing the need to enhance effective INSETs and reconsider less impactful ones.

**Figure 2:** Visual summary of the effectiveness ratings for each INSET type

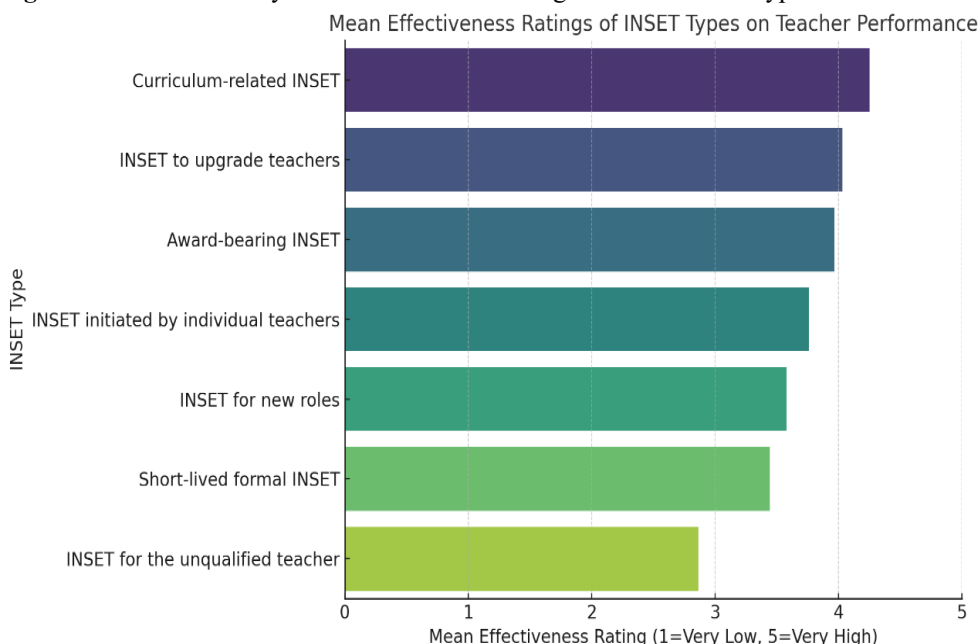


Figure 2 presents the mean effectiveness ratings of INSET types based on teacher responses in the Awutu-Senya West District. Curriculum-related INSET received the highest rating, followed by INSET to upgrade teachers, Award-bearing INSET, and INSET for new roles. INSET initiated by individual teachers and Short-lived formal INSET showed moderate effectiveness. INSET for the unqualified teacher received the lowest rating. These findings support the Tukey post hoc results, highlighting the need to prioritise high-impact INSETs and reconsider those with limited effectiveness.

Also, the qualitative data gathered through interviews aligned with the quantitative data on how effective INSET types are on teachers' performance, as expressed below:

INSET programmes are an integral part of teacher preparation and development. For this reason, the influence of INSET on the work of a teacher cannot be overemphasised. INSETs help to upgrade the knowledge, skills and attitude of teachers. Secondly, it helps to improve teachers' methodology and sharpen the competences of teachers, which help them perform their job effectively (HM2).

I think that updating teachers' knowledge, skills and attitudes INSET is very vital. Also, to introduce teachers to new trends in education, curriculum, and methodologies, INSETs are necessary. Again, for teachers to adjust and cope

with the changing demands of their job, INSETs are needed. These are why I think INSETs influence the performance of teachers (DTO).

**Table 5:** Effectiveness of INSET programmes on teacher performance in the ASWD

		Types of INSET programmes are mostly organised for teachers in the district	Types of INSET programmes considered most effective for SHS teachers	How often are external or internal INSETs organised for SHS teachers in the Awutu-Senya West district
N	Valid	95	95	95
	Missing	0	0	0
Mean		3.28	3.53	1.54
Std. Deviation		.930	.861	1.060

Table 5 above shows the Mean (M) and Standard Deviation (SD) of the effectiveness of INSET programmes on the performance of public SHS teachers. Data from the table indicated M (3.28), SD (0.930) for types of INSETs, mainly organised for teachers in the district. These show that the mean is high while the SD is low. Also, concerning the type of INSETs considered most effective for public SHS teachers, Table 5 portrays M as (3.53) and the SD as (0.861). Again, the M (1.54) and SD (1.060) indicated that the external or internal INSETs are often organised for public SHS teachers on a low scale in the district.

## Discussion

### *Nature of INSETs*

This study investigated the nature and type of INSET programmes on teachers' performance in some selected SHSs in Ghana. Results from the survey revealed that most INSETs in the district took the form of seminars and workshops. This finding corroborates earlier studies that reported that methods used for teacher INSETs to help teachers update their knowledge and skills in teaching include seminars, conferences, refresher courses, formal lectures, and workshops (Adentwi, 2005; Asomah et al., 2023; Osamwonyi, 2016). Also, most respondents cited methods of teaching as the most effective area for INSET. This is consistent with Egert et al. (2020), who state that teachers' effectiveness directly impacts the education standard delivered to students. Further, the majority selected refreshment needs of teachers as most frequently used INSET. Refreshment needs are one of the four professional teacher needs. INSET in this area is given to teachers with emphasis placed on updating teachers' knowledge and skills learnt in the past (Asomah et al., 2023). Moreover, teachers who vacated teaching should be reinvigorated to perform to expectations (Adentwi, 2005).

The qualitative data gathered through interviews confirm the above assertion, indicating that INSETs exist in the district and come in the form of SBI and CBI. These training formats are grounded in principles of collaborative learning, idea sharing, self-help, and teamwork among staff to solve teaching and learning challenges, as corroborated by MoE (2010) and Prempeh (2011). This aligns with constructivist theories by Becker (2002) and Kurt (2021), who argue that knowledge is socially constructed through interactive group engagement, such as SBI sessions, where collective problem-solving enhances professional learning. Most respondents identified the refreshment of teachers' knowledge and skills as a common objective of INSETs in the district. Prempeh (2011), citing Morant (1981), explains that INSETs should begin with the professional needs of teachers, which are diverse and numerous. Interviews confirmed the existence of both internal and external INSETs in the Asutifi South West District (ASWD). Three heads (HM2, HM3, and HM4), along with the District Training Officer (DTO), agreed on the nature and purpose of INSETs. Internal INSETs, such as SBI and CBI, are organised locally within the district to address school-specific or cluster-level challenges. External INSETs, on the other hand, are conducted by the Ghana Education Service (GES), NGOs, or national and regional bodies and may take the form of workshops or seminars. However, HM1 presented a contrasting view, indicating that not all teachers in the ASWD benefit equally from GES-facilitated INSETs. The DTO added that SBI and CBI are coordinated by the district and fall under internal INSETs, often tailored to meet the needs of local teachers. Additionally, the GES Circuit Supervisors' Handbook (2002) notes that SBI is often conducted for teachers within the same school, encouraging staff to identify and resolve specific teaching-learning needs collaboratively. Overall, findings confirm that teachers learn effectively in group-based settings and that both SBI and CBI provide platforms for co-operation and professional growth. This collaborative, context-driven model of INSET is well-supported by constructivist theory, which emphasises the importance of shared experiences and group knowledge-building in teacher development (Becker, 2002; Kurt, 2021).

Additionally, the result indicated that the curriculum-related INSET type was the most organised INSET. Two important points can be inferred from the above data. First, respondents admit knowledge of all the INSET types in the district, which is good for education delivery. Second, curriculum-related INSET will help to equip teachers with curriculum knowledge and skills for effective teaching (Adentwi, 2005). Also, most respondents believe that the most effective INSET for SHS teachers was the curriculum-related INSET. The data indicated that they have experience from both internal and external

INSETs. Curriculum-related INSET was rated as the most frequently organised and most effective, respectively, for SHS teachers in the district. Such INSETs are designed to introduce teachers to innovations taking place in schools' curriculum or to help implement education reforms. In support of the above points, Michael (2017) asserts that if teachers' performance is effective and efficient, training in new skills and modern methodology must be prioritised. Therefore, a teacher's performance is indicative of their knowledge in pedagogy. This can be enhanced by organising INSETs for teachers. Hence, curriculum-related INSETs are crucial as they impact knowledge, skills and attitudes; and introduce teachers to new trends in education, curriculum and methodologies, thus improving teachers' performance (Egert et al., 2020).

The findings indicate that not all INSET programmes equally enhance teacher performance. Consistent with prior research (Adentwi, 2005; Hervie & Winful, 2018), curriculum-focused INSETs prove most effective in improving instructional delivery, emphasising the value of targeted training in addressing pedagogical gaps and fostering professional growth (Osamwonyi, 2016). The results also support constructivist learning theories (Becker, 2002), advocating for interactive, problem-solving-oriented training linked to real classroom practice. Conversely, INSETs for unqualified teachers were the least effective, suggesting that generic programmes lack the impact of specialised, skill-based approaches. Interestingly, the minimal difference between curriculum-related and short-lived formal INSETs suggests that short-term programmes, if well-structured with clear objectives, can be equally effective. Therefore, curriculum-related INSETs should be prioritised and expanded for sustained improvement in instructional quality. Meanwhile, less effective programmes, especially those for unqualified teachers, should be restructured to emphasise hands-on training. ANOVA and Post Hoc results confirm that INSET type significantly influences teacher performance, with curriculum-related and upgrading INSETs offering the most significant benefits.

Again, HM2, HM3, HM4, and the DTO agreed that curriculum-related INSET is the most appropriate for professional teachers, as it deepens their understanding of the school curriculum. In contrast, HM1 believed that INSET for new roles is more suitable for professional teachers. Curriculum-related INSET is designed to introduce teachers to innovations in the school curriculum and assist in implementing educational reforms (Adentwi, 2005). It can therefore be inferred that such INSETs are tailored for professional and practising teachers, aiming to enrich curriculum implementation and reform



processes. The DTO concurred with SHS heads on suitable INSET types for SHS teachers, including award-bearing INSET, INSET for unqualified teachers, INSET for new roles, INSET to upgrade teachers, curriculum-related INSET, and short-lived formal INSET. Additionally, the DTO introduced School-Based INSET (SBI) and Cluster-Based INSET (CBI), supported by GES (2008) and MOE (2010), which define SBI as INSET organised at the school level to address specific professional gaps identified by teachers, headteachers, and circuit supervisors. From the discussions, it is evident that curriculum-related INSET, INSET to upgrade teachers, CBI, and SBI are widely regarded as the most suitable for professional teachers. Participants emphasised that professional teachers, already grounded in educational fundamentals, require INSETs that enhance efficiency and productivity. These types of INSETs are believed to broaden teachers' knowledge, skills, and expertise, aligning with previous studies that highlight the value of structured in-service training in promoting continuous academic and professional development. Quantitative data (Table 3) confirmed these findings, identifying curriculum-related INSET as the most effective for SHS teacher performance.

Qualitative data from interviews with four SHS heads (HM1–HM4) and the Training Officer (TO) confirmed that curriculum-related INSET is the most effective in enhancing SHS teacher performance in the district. The responses suggest that the type of INSET significantly impacts teacher performance and that continuous sensitisation through targeted INSETs is essential. Teacher preparation and development emerged as an ongoing process rather than a one-time event. INSETs were found to update teachers' knowledge, attitudes, and methodological skills, equipping them with the confidence and competence to deliver quality instruction. HM3 emphasised that continuous INSET participation improves performance and keeps teachers informed about current educational policies and curriculum changes. This aligns with the GES Circuit Handbook (2002), which highlights INSET's role in introducing new ideas and practices. Triangulation of qualitative (interviews) and quantitative (questionnaires) data shows strong agreement that curriculum-related INSETs play a vital role in boosting teachers' professional growth and effectiveness.

### ***Effectiveness of INSET***

On the effectiveness of INSET programmes on teachers' performance in the AWSO, data from Table 5 indicated M (3.28), SD (0.930) for types of INSETs mostly organised for teachers in the district. These show that the mean is high while the SD is low. This implies that the type of INSETs

mainly organised for public SHS teachers has a high impact: M (3.28) on teachers' performance in the district. Also, concerning the type of INSETs considered most effective for public SHS teachers, Table 5 portrays M as (3.53) and SD as (0.861). This means many INSETs are considered most effective for SHS teachers in the district, with a few deviations. Further, the M (1.54) and SD (1.060) indicated that the external or internal INSETs are often organised for public SHS teachers on a low scale in the district. This implies that external or internal INSETs are not often organised for public SHS teachers in the district. A mean of 1.54 and an SD of 1.060 show almost equal measures of importance placed on both external and internal INSETs for teachers in the district.

### ***Theoretical Implications***

Constructivist-informed INSET promotes collaborative, reflective, and problem-based learning. Teachers co-create solutions, reflect on practice, and address real classroom issues, leading to context-specific pedagogical skills, professional autonomy, and sustainable improvements embedded in their practice, enhancing both teaching effectiveness and student outcomes (Darling-Hammond et al., 2017; Avalos, 2011).

### **Conclusion and Recommendations**

The study results revealed that most INSETs in the district took the nature of seminars, workshops and SBI. Also, the results of the study showed that INSET programmes significantly impact the performance of public SHS teachers. Also, the results of the ANOVA analysis confirm that INSET type significantly impacts teacher performance, with curriculum-related and upgrading INSETs being the most impactful. Furthermore, the use of the same type of INSETs for organising training for all categories of teachers does not bring out the best in teachers, hence teachers' underperformance and apathy towards INSETs in the district. These findings suggest that targeted, well-structured, and subject-specific training is key to improving the effectiveness of teacher professional development in Ghana's public SHS system.

The study recommends that the Ghana Education Service (GES) organise more frequent Curriculum-related INSETs for teachers, prioritising needs assessment and frequency of INSETs for teachers. Also, since Curriculum-Related INSETs were rated the most effective, education policymakers should focus on expanding them, ensuring periodic mandatory training, differentiated training, and making sure they are practical and tailored to teachers' subject areas. Additionally, GES should establish teacher resource

centres and use practical-based INSET strategies like demonstration. Further, since teachers highly rated INSET for upgrading their skills. Finally, school heads should endeavour to do school-based INSET for their teachers to build their capacity.

### ***Implications for Policy and Practice***

The curriculum-related INSET had the highest effectiveness ratings, meaning that teachers find INSET programmes focusing on curriculum enhancement the most beneficial. This suggests that professional development programmes designed to adequately address their needs, improve teachers' skills, particularly through upskilling and modern methodologies, play a critical role in enhancing performance. These programmes likely contribute to skill development, but their impact may depend on factors like duration, content relevance, and practical application in the classroom. The results provide valuable insights for policymakers and educational institutions in designing and implementing INSET programmes that yield maximum impact on teacher effectiveness.

### **Limitations and areas for further studies**

The study was restricted to only teachers from public SHSs in the ASWD. Hence, the deficit in the generalisation of the findings of this research across all SHS. Further studies should be conducted to predict teacher characteristics that unearth detailed areas of interest that provoke their willingness to translate what they learn during INSETs to the classroom context.

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