

Investigating the Role of Supported Teaching in Schools (STS) in Improving Teaching of Foundational Literacy & Numeracy in Ghana



Draft Report on Pre-Year 4 (Extended Teaching) STS Study

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Executive Summary

Introduction

Since 2015, Ghana has introduced comprehensive system-wide reforms to address a set of challenges in Initial Teacher Education, including poor quality of entrants; content-heavy examinations-oriented Diploma in Basic Education (DBE) curriculum; lack of practical exposure to teaching; lack of specialisation and limited resources and lack of appropriate policies and procedures for quality assurance in the Colleges of Education (CoEs) among others.

The starting point of the reforms was the production of the National Teachers' Standards (NTS), which sets out a common expectation of Ghanaian teachers' knowledge, behaviour, and practice. This led to the review and replacement of the DBE with a 4-year Bachelor of Education (B.Ed.) in Initial Teacher Education commencing in 2018.

The B.Ed. was aligned to the National Teacher Education Curriculum Framework (NTECF) and required specialisations for Early Grade (KG–P3), Upper Primary (P4–P6) and Junior High School (JHS 1– JHS 3). To better develop teachers on the new B.Ed. programme, the original teaching practice component of the DBE was extended and revised to form the new practical Supported Teaching in Schools (STS) component within the B.Ed. curriculum. The new STS represents one of the distinctive features of the new curriculum and provides a significant opportunity for student teachers to learn within different practical settings over the four years of the B.Ed. to enhance their professional development.

Since its introduction, there has been little evidence to ascertain the impact of the new STS on teacher professional development in Foundational Literacy and Numeracy (FLN). This study seeks to fill this gap by providing empirical evidence on the impact. The current report, however, represents preliminary insights into the entire study and provides an update on the progress of the project including an analysis of data gathered during the pre-Year 4 (Extended Teaching) STS study. The survey focuses on student teachers who have completed Year Three of their B.Ed. in Initial Teacher Education and who are now transitioning into Year Four in order to ascertain their self-reported competence and understanding of FLN pedagogical strategies and resources and the NTS. It should be noted that there is a separate lesson observation survey that will ascertain their actual levels of competence and application of these strategies at the start and the end of their 12-week Year Four (Extended Teaching) STS placement.

Methodology

To address the study's research questions and test hypotheses, a concurrent explanatory mixed-methods design was adopted. This design involved quantitative and qualitative data collection and analyses. It allowed for exploration of the relationships between variables through quantitative methods and a deeper understanding of the context and experiences of mentors and student teachers through qualitative methods. The sampling frame for the study was the list of all 46 public CoEs with the target population being student teachers in the selected CoEs. To ensure a representative sample of student teachers, 30 CoEs were sampled to be included

in the study, representing 65.2% of the total number of CoEs. A four-stage stratified sampling design was adopted for the study. For the qualitative component, in-depth interviews (using interview guides) were conducted with selected Principals, STS coordinators, supervisors, and FLN tutors to gather insights into their experiences, challenges, and perceptions of the STS implementation. The purposive sampling technique was used to select the participants.

Data quality checks were undertaken to ensure that the data collected were robust and accurate. All variables in the data were checked for completeness and consistency. Frequencies and graphs of key indicators were generated and the multinomial logistic regression technique was used to examine the determinants of the probability of a student teachers' levels of competency and adherence.

Highlights from Findings

Self-reported competency in selecting appropriate teaching strategies for foundational literacy and numeracy amongst Year Three student teachers

There was low self-reported competency in selecting the appropriate teaching strategies for contents in FLN. About 2 out of every 5 student teachers indicated they were competent in selecting all the teaching strategies for foundational literacy, with only 12.3% indicating competence in foundational numeracy. The results show that student teachers self-reported being less competent in selecting teaching strategies for all components of geometry and measurements. Listening (56.9%), Writing and Reading (55.6%) were the two foundational literacy teaching strategies where most student teachers stated that they had competence. Less than half of student teachers indicated self-reported competence in the other four strategies.

Key predictors influencing Year Three student teachers' confidence in selecting teaching strategies for FLN include sex, programme of study, preferred teaching level during STS, and the ecological zone where their CoE is located.

Self-reported competency amongst Year Three student teachers in selecting appropriate TLRs for foundational literacy and numeracy

Level of competence in selecting appropriate teaching and learning resources for content in foundational literacy and numeracy was also low. Only 17.6% and 11.4% of student teachers indicated that they were competent in selecting all the teaching and learning resources for contents in foundational literacy and numeracy, respectively. The majority of student teachers (54.7% and 68.3%, respectively) indicated that they were competent in selecting less than half of the teaching and learning resources for contents in foundational literacy and numeracy.

Key factors influencing Year Three student teachers' confidence in selecting TLRs for foundational literacy include sex, preferred teaching level during STS, sex composition of the college, mentoring university, and total student population. In respect of confidence in selecting TLRs for foundational numeracy, the key predictors were sex, programme of study, preferred teaching level during STS, and the sex composition of the college.

Factors that influence student teachers' ability to adhere to the NTS in teaching at the Early Grades

The survey results revealed that just below half (48%) of student teachers had a copy of the NTS, whereas slightly above half (51%) stated that they were familiar with all of its seven sub-domains. Forty percent (40.0%) of student teachers neither had a copy of the NTS nor reported that they were familiar with its seven sub-domains. Among those who indicated that they were familiar with the seven sub-domains of the NTS, the majority (72.5%) were aware that it covers professional development, while one-half (50.0%) identified that the NTS also covers knowledge of educational frameworks and curriculum. Less than one-half of student teachers who claimed to be familiar with the sub-domains of the NTS, were aware that the NTS covers assessment, teaching and learning, managing the learning environment and knowledge of learners.

Key predictors of student teachers' self-reported awareness of the sub-domains of the NTS include sex of the student teacher, the class they prefer to teach during the STS, the sex composition of the college, mentoring university and the total student population of the CoEs.

Further to the above;

- Among student teachers who indicated that they were familiar with the contents of the NTS, 6 out of 10 were aware of less than half of the values and attitudes to be exhibited by a student teacher. Only 17.2% were aware of all the values and attitudes.
- Of the 51.0% of student teachers who claimed that they were familiar with the contents of the NTS, 66.3% were aware of less than four of the six professional knowledge they are expected to exhibit, with only about 1 in 5 being aware of all the professional knowledge.
- Of the 16 professional practices outlined in the NTS, among student teachers who indicated that they were familiar with its contents, the majority (73.3%) were aware of less than half of the practices. Only 1 in 10 were aware of all the professional practices they were expected to exhibit.
- Most (76.6%) of student teachers knew that the NTS aims to promote professional development. However, less than half were aware of the other aims of the NTS. The least known aim of the NTS was community of practice. Only 13.8% were aware of all the aims of the NTS.

Student teachers' content knowledge, pedagogical knowledge and pedagogical content knowledge in FLN

- Student teachers who indicated having good content knowledge in FLN, ranged between 42.1% to 48.0%. Specifically, between 42.5% to 48.0% had good content knowledge in numeracy, while 42.1% to 46.0% had good knowledge in literacy content. Within the category that indicated having very good content knowledge, there were less

than 40% for numeracy and less than 45% for literacy. Between 15.2% to over 23% had poor content knowledge in numeracy as against 12.1% to less than 14% for literacy. Overall, less than 50% had either good or very good content knowledge in FLN.

- Less than 50% indicated having good pedagogical knowledge in both literacy and numeracy, with the highest percentage being 46.7% in the use of questioning techniques to promote deep learning. The least percentage however, was 41.2% in relation to the use of relevant active play-based methods. Similar trend was recorded for those who responded positively to having a very good pedagogical knowledge.
- Less than half (maximum 47.1%) of student teachers had good pedagogical content knowledge in teaching the FLN curriculum. Out of the lot, only less than 40% (maximum 35.9%) responded positive to possessing very good pedagogical content knowledge.

Stakeholders Perception of STS and its Impact

- The STS practicum has affordances for student teachers to exhibit their content knowledge, pedagogical knowledge and pedagogical content knowledge in FLN. In addition, STS practicum helps to enhance the student teachers' competence and skills development in FLN.
- The student teachers revealed that the STS mentorship positively influenced their exhibition of content knowledge, pedagogical knowledge, and pedagogical content knowledge in FLN. They further noted that STS mentorship was a precursor of their competence, and skills development towards the teaching of FLN.
- According to student teachers, an impactful STS is determined by an exposure to display their content knowledge, pedagogical knowledge, and pedagogical content knowledge in FLN. Additionally, STS is impactful if it enabled them to develop their competencies, and skills in teaching FLN. Additionally, an impactful STS should promote the student teachers' NTS understanding and NTS adherence in FLN.
- The two most important (among the seven) determinants of impactful STS are the promotion of NTS adherence and pedagogical knowledge.
- Mentorship experiences of the student teachers' towards FLN is positively influenced by their STS practicum.
- STS mentorship enables student teachers' understanding and adherence to the NTS for FLN.

Challenges in STS Implementation

These include mentorship training gaps; material constraints; financial strain on the implementation, persistent tutor understaffing and resource scarcity for literacy and numeracy materials and negative perceptions and gender stereotypes, among others.

Conclusion

The findings highlight significant gaps in student teachers' competency in foundational literacy and numeracy (FLN), particularly in selecting appropriate teaching strategies and resources. There is also limited familiarity with the National Teaching Standards (NTS), with most student teachers demonstrating low awareness of its key components, values, and professional practices.

Despite these challenges, the STS practicum is reported to have been beneficial in enhancing pedagogical and content knowledge, with mentorship playing a crucial role in skill development and professional readiness. However, challenges such as inadequate mentor training, financial constraints, resource scarcity, and entrenched gender stereotypes hinder the effective implementation of STS.

Recommendations Based on Phase One Data

1. *Strengthen Training in Teaching Strategies and Resource Selection*
 - Enhance student teachers education programs to improve competency in FLN pedagogy.
 - Integrate targeted workshops focusing on geometry, measurement, and effective resource selection.
2. *Enhance Familiarity and Adherence to NTS*
 - Incorporate NTS content into training curricula with periodic assessments.
 - Provide digital and physical copies of the NTS to all student teachers.
3. *Improve STS Practicum Support and Mentorship*
 - Ensure consistent mentor training despite turnover challenges.
 - Develop a standardized mentorship framework to enhance effectiveness.
4. *Address Financial and Logistical Barriers*
 - Advocate for increased funding to cover transport, teaching materials, and mentor incentives.
 - Explore public-private partnerships or public-public partnerships to support STS implementation.
5. *Mitigate Gender Stereotypes and Negative Perceptions*
 - Integrate gender-sensitive approaches in teacher training.
 - Conduct awareness campaigns to challenge biases and encourage inclusive teaching practices.
6. *Increase Access to Teaching and Learning Materials*
 - Establish a centralized repository of digital and physical teaching aids.
 - Encourage innovative, cost-effective solutions for resource development.

1.0 Introduction

Since 2015, Ghana has introduced comprehensive system-wide reforms to address a set of challenges in Initial Teacher Education, including:¹

Poor quality of entrants and consequent focus on remedial content. The three-year DBE, offered by CoEs as the standard entry qualification for new teachers entering public basic schools until 2018 attracted applicants who did not have the required Senior High School grades to enter university. The academic content knowledge of many of these applicants was poor, particularly in English, Mathematics, and Science, meaning that tutors in CoEs had to spend much of the first year of the DBE doing remedial teaching to address gaps in content knowledge.

Content-heavy and examination-oriented DBE curriculum. This lent itself to rote learning by student-teachers.² Tutors predominantly used the **lecture method of instruction**. There was little explicit link between the content of the teacher education curriculum and the pre-tertiary curriculum that student-teachers were expected to teach in basic schools.

Lack of practical exposure to teaching. Student-teachers only gained hands-on teaching experience during the third year of the DBE where they would spend an extended amount of time across two semesters in partner schools. The quality of mentoring and supervision within these partner schools was variable. Tutors did not consider some teachers as adequate role models. There was often no formal oversight agreement of roles and responsibilities between the district, metropolitan, and municipal education offices, which oversee basic schools, and the CoE.

Lack of specialization. Along with the content-heavy nature of the curriculum, lack of specialization meant that tutors had difficulty in preparing teachers who might on the one hand be teaching reading to Primary 1 pupils or who could be teaching English Literature to junior high school (JHS) 3 pupils once they were posted to basic schools after completing the DBE.

Limited resources and lack of appropriate policies and procedures of CoEs. Quality assurance, management and assessment processes within institutions were often inadequate and the quality of teaching and learning was variable. Many tutors lacked the required academic qualifications to teach at the tertiary level. This combination of factors meant that most CoEs were really ‘tertiary’ in name only.

¹ These findings are taken from *Teacher Training in Ghana- Does it Count? Multi-Site Teacher Education Research Project (MUSTER)*, Kwame Akyeampong, 2003; *‘Girls Unite and Pass (Participatory Approaches for Student Success) Business Case’*, DFID, 2012; *‘Girls Participatory Approaches for Student Success G-PASS Programme in Ghana- Technical Proposal’*, Cambridge Education, 2014

² For the purposes of this report ‘student-teachers’ are the young people in training in the CoEs of Education undertaking the B.Ed. who will become teachers when they graduate, ‘tutors’ are the staff in the Colleges of Education who are responsible for training the student-teachers, ‘teachers’ are what the student-teachers become once they have graduated and start working in basic schools. The term ‘mentors’ is used to describe the teachers working in partner schools who play the role of mentors to the student-teachers during the practical, classroom-based elements of their training, which is known as Supported Teaching in School (STS).

The combined impact of the factors outlined above meant that, in 2014, “Teachers coming through Ghana’s CoE have limited hands-on practical exposure to good teaching methodology and fall back on familiar rote-learning (DFID, 2012:9).”

It was against this context that Ghana’s Initial Teacher Education reforms were supported by a \$34 million six-year (2015-2020) package of support from the Foreign Commonwealth and Development Office (FCDO) through Cambridge Education’s Transforming Teacher Education & Learning (T-TEL) programme.³ The starting point of the current reforms was the production of the NTS,⁴ which sets out a common expectation of Ghanaian teachers’ knowledge, behaviour, and practice. The NTS provided the foundation for subsequent reforms as they established a common set of agreed requirements which formed the foundation for teacher licensing, which was introduced for all new entrants to the teaching profession in 2018, and a review of the DBE initial teacher education curriculum. This review concluded that the DBE did not provide adequate training for beginning teachers to enable them to meet the requirements of the NTS.

Following the curriculum review, the Ministry of Education decided to replace the DBE with a new B.Ed. degree in Initial Teacher Education, commencing in 2018, which became the new minimum qualification for anyone aspiring to enter the teaching profession. The B.Ed. is aligned with a NTECF⁵ which set out the mandatory requirements that any B.Ed. in Initial Teacher Education programme would need to meet to be accredited by the National Accreditation Board (NAB). The NTECF required specialisations for Early Grade Education (KG–P3), Upper Primary (P4–P6), and JHS 1–3. These are the B.Ed. courses currently run by CoEs affiliated to Kwame Nkrumah University of Science and Technology (KNUST), the University of Education Winneba (UoE), the University for Development Studies (UDS) and the University of Ghana (UG). CoEs affiliated to the University of Cape Coast (UCC) run a slightly different system with B.Ed. Early Childhood Education (KG-P3), Primary Education (P1-P6) and JHS 1-3.

The new B.Ed. degree was introduced across Ghana’s 46 public CoEs in September 2018 with the first cohort of 16,000 student teachers graduating in October 2022. The new B.Ed. in Initial Teacher Education represents a major shift in how teacher education is conceptualized and delivered in Ghana with the intention that it:

- i. fully prepares student teachers to teach the basic school curriculum, concentrating on relevant subject and pedagogic knowledge and introducing specialisms (KG-P3, P3-P6, JHS education);

³ The Transforming Teacher Education & Learning (T-TEL) programme ran from 2015 to 2020 and was implemented by Cambridge Education. The Ghanaian team responsible for implementing T-TEL then established a Ghanaian-registered not-for-profit organization called Transforming Teaching, Education & Learning (T-TEL) in July 2020 which is completely independent of Cambridge Education. Further details of T-TEL’s work can be found here: [Our Work - T-TEL](#)

⁴ National Teachers’ Standards (NTS): <https://t-tel.org/download/national-teachers-standards/?wpdmdl=3301&refresh=64297217d167a1680437783>

⁵ NTECF: <https://t-tel.org/download/national-teacher-education-curriculum-framework/?wpdmdl=3287&refresh=64298d37878271680444727>

- ii. equips student teachers to develop learners' languages (Ghanaian Languages and English) and literacy so all can access the curriculum;
- iii. gives higher status to practical teaching experience through supported and assessed teaching in school, called Supported Teaching in School (STS);
- iv. widens the focus of assessment to include in-school learning and assignments as well as examinations, with students being assessed against the NTS;
- v. emphasizes a more interactive, learner-focused approach to training, modelling good teaching; and
- vi. is explicit in addressing vital cross-cutting issues: equity and inclusivity, assessment, core skills, professional values, action research and reflection.

Supported Teaching in School in the new B.Ed. curriculum

The extension of the practical STS component within the B.Ed. curriculum provides a very significant opportunity for student teachers to learn within different practical settings and is arguably the most important change brought about in Ghana's Initial Teacher Education reforms.

STS accounts for 30% of the total marks in the B.Ed. and takes place across all 4 years of the B.Ed. In the first year there is a greater focus on school-based, organised and directed learning experiences in school where students reflect on teachers' teaching and children's learning. This takes place one day a week for 6 weeks in Semester One and again in Semester Two. Subsequently, in future years, there is a greater focus on school-focused training where the student teacher, with the support of a mentor (a classroom teacher in a partner school), takes increasing amounts of responsibility for planning teaching and assessing the learners in their care alongside classroom enquiry and action research. During the four years student teachers teach and observe teaching in a range of schools to understand how children develop and learn in diverse contexts.

The structure of the STS over the four years of the B.Ed. is set out below.⁶

Year One: Beginning teaching – Provides support for the transition from school to college and recognizes that many student teachers will have come from school level education and from a wide range of backgrounds and experience. It introduces: the nature and core knowledge of subjects; supported teaching in school experiences; cross-cutting issues such as inclusion and equity in education; the school curriculum and approaches to teaching and learning, and the expectations for the learning and progress of learners in different subjects. Year One enables student teachers to be able to see their specialism within the wider curriculum.

⁶ Detailed information on the STS is taken from the official STS Year 4 School Placement Handbook (GTEC, NTC & T-TEL 2020) which can be accessed here: https://t-tel.org/download/supported-teaching-in-school_year-4_school-placement-handbook/?wpdmdl=8128&refresh=67b0878a919921739622282

STS Year One

By the end of the beginning placement student teachers, under the close guidance of a mentor, will be able to:

1. Work collaboratively, with 2-4 student teachers per class, to plan for and work with a small group or individual pupils, beginning to acquire the ability to consider children's learning, backgrounds, and experience.
2. Discuss features of the school curriculum, specifically focusing on English (literacy), Mathematics, and Science.
3. Undertake child studies focused on children's learning and progress.
4. Begin to identify the traits of the profession and qualities of a good teacher.
5. Reflect on and record their experiences in their professional portfolios – through this student teacher will begin working towards meeting the NTS.
6. May work towards 10-15% of class responsibility with a small group.

Duration 32 days: day visit and 4-week placement, in vacation, across 2 semesters.

Year Two: Developing teaching – student teachers select one of the three specialisms whilst key features from Year One continue to be developed as relevant to each specialism. The second year prepares student teachers to identify and assess weaknesses and barriers to learning for learners and carry out small-scale classroom enquiry under the guidance of mentors.

STS Year Two

By the end of the developing placement, under the close guidance of a mentor, the student teacher will be able to:

1. Teach, motivate, support, and manage (working individually and in pairs) the learning of small groups of pupils in the core subjects of English (literacy), mathematics, and science, and other subjects as appropriate to their specialism.
2. Begin to identify, assess, and analyses the needs of children, taking into account any issues of background and experience.
3. Discuss key features of the school curriculum, including issues of continuity and progression both within their specialism and across all the subjects they will teach.
4. Undertake small scale classroom enquiry focused on children's learning and progress, demonstrating an emerging ability to reflect on their developing understanding of teaching, learning, and assessment.
5. Demonstrate a high standard of professional conduct and positive professional values at all times and act as a good role model for pupils.
6. Those preparing for early grade or primary specialisms will have begun to develop knowledge of teaching the speaking, listening, reading, and writing of one Ghanaian language.
7. Demonstrate a growing understanding of the requirements of the NTS in terms of professional practice, knowledge, values and attitudes, in particular their

professional role as a teacher, and be able to reflect on, record, and discuss evidence of their progress towards meeting the NTS.

8. May be working towards 30% of class responsibility with the small groups they are planning for and teaching.

Duration 32 days: including day visits and across 2 semesters and in vacation.

Year Three: Embedding teaching – student teachers will continue to build skills, knowledge, and understanding in their chosen specialism. They will co-plan and co-teach groups of learners and whole classes, carry out small-scale classroom enquiries, and provide evidence of working towards meeting the NTS. Year Three includes preparation for Year Four, semester one: final supported teaching in school (internship), and for significant classroom-based enquiry and action research projects.

STS Year Three

By the end of the embedding placement the student teacher, with mentor guidance and support, will be able to:

1. Teach, motivate, manage, and extend the learning of classes with increasing consistency and independence, whatever their socio-cultural and linguistic background and regardless of age, aptitude, and ability. This will involve co-planning, co-teaching, and co-assessment with mentors and their ongoing presence in the classroom.
2. Plan for and teach sequences of lessons across all required subjects with regard for cross-cutting skills and issues of equity and inclusivity.
3. Undertake small-scale action research, evaluate, and reflect on their teaching and on pupils' learning to support students in improving their teaching and assessment.
4. Demonstrate emerging leadership qualities in the classroom and to contribute to wider school life, being guided by the legal and ethical codes of conduct required by a professional teacher.
5. Provide evidence and discuss how, with support from their mentor, they are able to meet the Teachers' Standards through much of their teaching and all of their professional conduct. They will be able to agree and act on targets to further improve their teaching.
6. May work towards 50-60% of class responsibility with agreed classes and periods in accordance with agreed placement requirements.

Duration 36 days: including day visits across 2 semesters.

Year Four: Extending Teaching: Following a supported teaching in school internship in Semester One, during Semester Two students will return to school to complete some courses. By the end of the fourth year, student teachers will: plan, teach, and assess their learners

independently and with increasing consistency; exhibit the ethical codes of conduct, values, and attitudes expected of a teacher; carry out extensive action research projects; and provide evidence of meeting the National Teachers' Standards in full.

STS Year Four

By the end of the extending placement the student teacher, with mentor guidance, will be able to:

1. Intently and independently plan for teaching, motivate and extend the learning of all children whatever their socio-cultural and linguistic background and regardless of age, aptitude, and ability.
2. Provide evidence in their planning and teaching of a comprehensive understanding of the school curriculum and of the age-related expectations before, during, and after their specialism.
3. Undertake an action research project to improve the learning opportunities of an agreed group of pupils to promote greater inclusion; and through this develop their teaching, classroom management, and organization strategies.
4. Demonstrate effective, growing leadership qualities in the classroom and in the wider school community and be guided by the legal and ethical codes of conduct required by a professional teacher.
5. Reflect on, discuss, and provide evidence of how they meet the NTS in full and identify targets for further development.
6. Have the qualities and attributes expected of a good teacher and fully meet the NTS.
7. May work towards 80% of class teaching responsibility with agreed classes and periods in accordance with agreed placement requirements.

Duration 60 days in school: these can be either residential or non-residential. 60 days in college working on action research project and professional portfolio and preparing for viva as appropriate.

The STS has proved the most challenging aspect of the B.Ed. to implement effectively, as evidenced by the findings of a comprehensive Fidelity of Implementation (FoI) assessment carried out by GTEC, with support from T-TEL, across all 46 CoEs in 2022.⁷

We currently have limited evidence to assess the influence of student teachers' experience of STS on their competencies, skills and behaviour. In response to this gap, Transforming Teaching, Education & Learning (T-TEL), in partnership with the University of Cape Coast (UCC) and Education Sub-Saharan Africa (ESSA), seeks to conduct research in CoEs and partner schools across Ghana to investigate the role of Supported Teaching in School (STS) in improving the teaching of Foundational Literacy & Numeracy for student teachers in Years 3 and 4 of their Bachelor of Education (B.Ed.) in Initial Teacher Education (KG-P3 specialism).

⁷ GTEC FoI Report : https://t-tel.org/download/report_fidelity-of-implementation-foi-of-b-ed-programme/?wpdmdl=8130&refresh=642c12e4634d01680610020

The study seeks to strengthen the existing evidence base on the STS component and answer the following questions:

- i. How does STS influence student teachers' ability to provide effective FLN instruction?
- ii. What factors influence student teachers' ability to adhere to NTS in teaching at the early grades (KG-P3)?
- iii. What factors explain the effect of the STS experience on student teachers' ability to meet NTS?
- iv. What is the influence of the STS on the student teachers' development of skills and competencies?
- v. What is the influence of the STS on student teachers' content knowledge, pedagogical knowledge, and pedagogical content knowledge?
- vi. What are the determinants of impactful STS?
- vii. What is the influence of impactful STS on student teachers' motivation towards professional teaching and their professional readiness to teach?
- viii. What is the relationship between student teachers' motivation towards professional teaching and their professional readiness to teach?
- ix. What can be learnt about the STS to improve policy and practice of student teachers education in Ghana?

It is important to emphasise that this report does not provide answers to all the research questions listed above. This report represents preliminary insights to the entire study and provides an update on the progress of the project including an analysis of data gathered during the pre-Year 4 (Extended Teaching) STS study. Data from the post- (Extended Teaching) STS study (i.e. Phase Two of this project) will be required to enable answers to be adduced for all the research questions enumerated.

2.0 Methodology

This Pre-Year 4 (Extended Teaching) STS Survey seeks to provide baseline assessment of student teachers on the objectives outlined, including their knowledge on NTS and the teaching of foundational literacy and numeracy. The survey focuses on student teachers who have completed Year Three of their B.Ed. in Initial Teacher Education and who are now transitioning into Year Four. The survey attempts to ascertain their self-reported competence and understanding of FLN pedagogical strategies and resources and the NTS. It should be noted that there is a separate lesson observation survey that will ascertain their actual levels of competence and application of these strategies at the start and the end of their 12-week Year Four STS placement.

The survey is expected to provide a deeper understanding of the student teachers' hopes and expectations for the Year Four 12-week extended STS placement and is designed to contain a wide range of qualitative reflections from key staff within the CoEs, including Principals, STS Coordinators and FLN Tutors. By this point, the end of Year Three (Level 300) in the B.Ed. programme, the student teachers are expected to be able to *“adhere to the NTS through much of their teaching and all of their professional conduct. They should also be able to work towards 50-60% of class responsibility with agreed classes and periods in accordance with agreed teaching requirements.”* In other words, they should be well on their way to complete adherence to the NTS, with the expectation that this will be achieved during their Year 4 extended STS placement.

2.1 Design

To address the study's research questions and test hypotheses, a concurrent explanatory mixed-methods design was adopted. This design involved quantitative and qualitative data collection and analyses. This approach allowed for exploration of the relationships between variables through quantitative methods and a deeper understanding of the context and experiences of mentors and student teachers through qualitative methods.

2.2 Sampling strategy

A sampling strategy was adopted to ensure the selection of a representative sample of students from the CoEs across Ghana. The sampling frame for the study was the list of all 46 public CoEs provided by the Ghana Tertiary Education Commission with the target population being students in the selected CoEs. To ensure a representative sample of students, 30 CoEs were sampled to be included in the study, representing 65.2% of the total number of CoEs..

A four-stage stratified sampling design was adopted for the study. At the first stage of the sampling process, to ensure a wide geographical spread of selected CoEs, they were stratified by the ecological zone in which they were located. The ecological zones comprise the Coastal (Western, Central, Greater Accra and Volta regions), Forest (Ahafo, Ashanti, Eastern, Western North, Bono, Bono East and Oti regions) and Savannah (North-East, Northern, Savannah, Upper East and Upper West regions) zones. The 30 CoEs were allocated proportionately to the number of CoEs in each ecological zone. In this regard, eight (8) CoEs were allocated to the Coastal zone, fifteen (15) to the Forest zone and seven (7) to the Savannah zone. A systematic random sampling approach was then used to sample CoEs independently within each ecological zone.

At the second stage of the sampling process, the sampled CoEs in the selected zones were stratified by their mentoring universities. The CoEs in each zone were then allocated proportionately to the number of CoEs mentored by each university. The mentoring universities were the Kwame Nkrumah University for Science and Technology (KNUST), the University of Cape Coast (UCC), the University for Development Studies (UDS), the University of Education Winneba (UoE) and the University of Ghana (UG). In the Coastal zone, UCC

mentored five (5) CoEs, UoE mentored four (4) CoEs and UG mentored four (4) CoEs. Thus, in the Coastal zone, three (3) of the CoEs mentored by UCC, two (2) by UoE and two (2) by UG were randomly sampled to be included in the study. In the Forest zone, KNUST mentored three (3) CoEs, nine (9) by UCC, two (2) by UDS, eight (8) by UoE and one (1) by UG. Thus, two (2) of those mentored by KNUST, five (5) by UCC, one (1) by UDS and four (4) by UoE were randomly sampled. In the Savannah zone, KNUST mentors two (2) CoEs, four (4) by UDS, three (3) by UoE and one (1) by UG. Therefore, allocating proportionately, one (1) CoE mentored by KNUST, two (2) by UDS and two (2) by UoE were randomly sampled.

At the third stage of the sampling process, the selected CoEs were stratified by the sex composition (all males, all females and mixed) of the CoEs. The number of CoEs was then allocated proportionately to the number of CoEs by the sex composition. Where there was one single-sex CoE in an ecological zone, it was included in the sample. The number of CoEs sampled in each stratum is shown in Table 1.

Table 1. Number of CoEs sampled in each stratum

Ecological zone and mentoring university	Sex composition			Total
	Mixed	Female	Male	
Coastal				
University of Cape Coast	1	2		3
University of Education, Winneba	2			2
University of Ghana	3			3
Total	6	2		8
Forest				
Kwame Nkrumah University of Science and Technology	2			2
University of Cape Coast	5	1		6
University of Development Studies	1			1
University of Education, Winneba	2	2	1	5
University of Ghana	1			1
Total	11	3	1	15
Savannah				
Kwame Nkrumah University of Science and Technology	1			1
University of Development Studies	3			3
University of Education, Winneba	2			2
University of Ghana	1			1
Total	7			7
OVERALL TOTAL	24	5	1	30

At the fourth stage of the sampling procedure, in the sampled schools, up to three (where available) Level 300 classes were randomly sampled to be included in the study. All students in the sampled classes were eligible to complete the questionnaire. Table 2 shows the number of students who completed the questionnaire by stratum. In all, 2,728 students completed the questionnaire.

Table 2. Number of students by stratum that completed the questionnaire

	Sex composition of college		Total
	Female	Mixed	
Coastal			
University of Cape Coast	230	54	284
University of Ghana	—	147	147
University of Education	—	72	72
Total	230	273	503
Forest			
University of Cape Coast	99	960	1,059
University of Education	246	216	462
Kwame Nkrumah University of Science and Technology	—	294	294
University of Development Studies		28	28
Total	345	1,498	1,843
Savannah			
University of Education	—	89	89
Kwame Nkrumah University of Science and Technology	—	60	60
University of Development Studies	—	233	233
Total	—	382	382
All			
University of Cape Coast	329	1,014	1,343
University of Ghana	—	147	147
University of Education	246	377	623
Kwame Nkrumah University of Science and Technology	—	354	354
University of Development Studies	—	261	261
Total	575	2,153	2,728

For the qualitative component, we adopted a qualitative description design, which allows a researcher to present a detailed account of a phenomenon within its natural context. With less emphasis on abstraction, this design enables researchers to stay close to the data and present rich interpretative summaries of information about the phenomenon under investigation. Being eclectic, qualitative description allows the combination of various data collection methods. In-depth interviews (using interview guides) were conducted with selected Principals, STS coordinators, supervisors, and FLN tutors to gather insights into their experiences, challenges, and perceptions of the STS implementation. Basically, the purposive sampling technique was used to select the participants.

2.3 Ethical Clearance

Ethical clearance with reference number UCCIRB/EXT/2024/036, was obtained from the Institutional Review Board of the University of Cape Coast prior to data collection.

2.4 Data Collection

The research activities were aligned with the 2023/2024 and 2024/2025 academic year calendars to ensure that data collection happened before the student teachers proceeded on their Year Four extended STS placements in their partner schools. The quantitative data were collected using Computer Assisted Personal Interviewing (CAPI) technology. Surveys were administered to Year Three Student Teachers to collect data on demographics, experiences, and outcomes related to the STS implementation. In each of the selected schools, the student teachers in the selected classes self-completed the questionnaire. The locations of the selected schools were mapped for easy identification, access and allocation of tasks to field staff.

Data collection in the qualitative phase involved in-depth interviews of participants. The participants were selected to ensure a fair representation of each of the affiliate universities. The interviews were conducted using the face-to-face approach and recorded with the consent of the participants. Sixty participants were selected and interviewed across twenty (20) CoEs. Amongst the 60 participants, 19 of them were Principals and Vice Principals, 19 were STS Coordinators, and 22 were Tutors (11 each of Literacy and Numeracy Tutors). In terms of sex composition, 80% of the participants were males. The mean age of teaching experience in the various CoEs was 13 years (minimum and maximum duration of 1 and 28 years respectively). A similar number of participants were interviewed across all the CoEs. Table 3 summarises the participants selected for the study according to their sex, years of teaching experience, CoEs, and region. Pseudonyms were given to participants to conceal their identity.

Table 3. Basic Socio-demographic Characteristics of the Participants

Participant Characteristics	Participant Categories					Total (N=60)
	Principals (n=13)	Vice Principal (n=6)	Coordinators (n=19)	Literacy Tutor (n=11)	Numeracy Tutors (n=11)	
Sex						
Female	4	1	2	4	1	12
Male	9	5	17	7	10	48
Years of Teaching Experience						
<9years	12	4	5	3	4	28
10-14 years		2	2	1	2	7
15-19 years	1		7	3	2	13
>20 years			5	4	3	12
University Affiliations						
KNUST	2	2	4	4	2	14
UCC	5	1	6	3	3	18
UDS	1	1	2	1	1	6
UEW	4	1	5	2	0	12
UG	1	1	2	1	1	6
Ecological Zone						
Coastal	4	2	5	2	4	17
Forest	6	3	11	7	5	32
Savannah	3	1	3	2	2	11

2.5 Data analysis

Data quality checks were undertaken to ensure that the data collected were robust and accurate. All variables in the data were checked for completeness and consistency. Where inconsistencies were identified the necessary corrections were made. Frequency tables and cross-tabulations were generated to check response rates and completeness of the data collected. Frequencies and graphs of key indicators were generated. The multinomial logistic regression technique was used to examine the determinants of the probability of a student teachers' levels of competency and adherence. The dependent variables analysed were:

- Self-reported competency in selecting appropriate teaching strategies for foundational literacy (a total of 6 strategies which feature in the B.Ed. curriculum).
 1. Listening (Phonemic Awareness)
 2. Writing and Reading (Concept of Print)
 3. Listening and Reading (Alphabetic Knowledge and Phonics)
 4. Reading (Vocabulary)

5. Reading (Comprehension)
 6. Reading (Fluency)
- Self-reported competency in selecting appropriate teaching strategies for foundational numeracy (a total of 8 strategies which feature in the B.Ed. curriculum).
 1. Number (Whole Numbers) Counting and Representation
 2. Number (Whole Numbers) Operations and Relationship between numbers
 3. Number (Whole Numbers) Fractions and Relationship between numbers
 4. Algebra (Non-numerical Patterns and Relationships)
 5. Geometry and Measurement (Lines and Shapes)
 6. Geometry and Measurement (Telling positions of objects in space)
 7. Geometry and Measurement (Measurements-length, mass, capacity)
 8. Handling Data (Data Collection, Presentation, Analysis and Interpretation)
 - Self-reported competency in selecting appropriate teaching and learning resources (TLRs) for foundational literacy (specific resources linked to each of the 6 identified teaching strategies for foundational literacy).
 1. Listening (Phonemic Awareness)
 2. Writing and Reading (Concept of Print)
 3. Listening and Reading (Alphabetic Knowledge and Phonics)
 4. Reading (Vocabulary)
 5. Reading (Comprehension)
 6. Reading (Fluency)
 - Self-reported competency in selecting appropriate TLRs for foundational numeracy (specific resources linked to each of the 8 identified teaching strategies for foundational numeracy).
 1. Number (Whole Numbers) Counting and Representation and Cardinality
 2. Number (Whole Numbers) Operations and Relationship between numbers
 3. Number (Whole Numbers) Fractions and Relationship between numbers
 4. Algebra (Non-numerical Patterns and Relationships)
 5. Geometry and Measurement (Lines and Shapes)
 6. Geometry and Measurement (Telling positions of objects in space)
 7. Geometry and Measurement (Measurements-length, mass, capacity)
 8. Handling Data: Data (Collection, Presentation, Analysis and Interpretation)
 - Knowledge and awareness of the National Teachers' Standards (knowledge of the 3 main domains and 7 sub-divisions in the NTS).
 - Knowledge of what the NTS aim to promote
 1. Professional development
 2. Community of practice
 3. Knowledge of educational frameworks and curriculum
 4. Knowledge of students
 5. Managing the learning environment
 6. Effective teaching and learning
 7. Effective assessment

- Pedagogical strategies in the NTS for efficient teaching of foundational literacy
 1. Discussion and demonstration
 2. Effective reading
 3. Ensuring inclusivity during the teaching and learning process
 4. Digital literacy
 5. The use of games in teaching
 6. Learner-centered strategy and play-base learning strategy
 7. Literacy skills
 8. Professional development
 9. Provision of TLRs
 10. Role play and think pair and share
 11. Scaffolding and differentiation
 12. The application of hands-on learning

- Pedagogical strategies in the NTS for efficient teaching of foundational numeracy
 1. Discussion and demonstration
 2. Effective counting
 3. Ensuring inclusivity during teaching and learning process
 4. Digital numeracy
 5. The use of games in teaching
 6. Learner-centered strategy and play-based learning strategy
 7. Numeracy skills
 8. Professional development
 9. Provision of TLRs
 10. Role play and think pair and share
 11. Scaffolding and differentiation
- The three sub-domains of the NTS are i.) Professional Values and Attitudes, ii.) Professional Knowledge; and iii.) Professional Practice. Each of these is covered in the survey, as follows:
 - Knowledge and awareness of Professional Values and Attitudes to be exhibited by a Student Teacher (7 key attributes as stated in the NTS).
 1. Seek to improve teaching and learning
 2. Aim for professional development through lifelong learning and continuous professional development
 3. Be guided by legal and ethical teachers' codes of conduct
 4. Engage positively with colleagues, learners, parents, school management committees and the Parent-Teacher Association
 5. Develop a positive teacher identity
 6. Act as a good role model for students
 7. Be agent of change in the school, community and country

- Knowledge and awareness of Professional Knowledge to be exhibited by a Student Teacher (6 key attributes as stated in the NTS).
 1. Familiarity with the education system and key policies guiding it
 2. Comprehensive knowledge of the official school curriculum
 3. Secure content knowledge, pedagogical knowledge and pedagogical content knowledge
 4. Good knowledge of how to teach beginning reading and numeracy and speaking, listening, reading and writing, and to use at least one Ghanaian language as a medium of instruction
 5. Knowledge of how children develop and learn in diverse contexts and its application in teaching
 6. Respect learners' cultural, linguistic, socio-economic and educational backgrounds in planning and teaching

- Knowledge and awareness of Professional Practices to be exhibited by a Student Teacher (16 key attributes as stated in the NTS).
 1. Plan and deliver varied and challenging lessons
 2. Undertake small-scale action research to improve practice
 3. Create a safe and encouraging learning environment
 4. Manage behaviour and learning
 5. Employ a variety of instructional strategies to encourage participation and critical thinking
 6. Pay attention to all learners, including girls and those with special needs
 7. Employ instructional strategies appropriate for mixed ability, multilingual and multi-age classes
 8. Set tasks that encourage learner collaboration and lead to purposeful learning
 9. Explain concepts using examples familiar to students
 10. Produce and use a variety of teaching and learning resources to enhance learning
 11. Integrate a variety of assessment modes into teaching to support learning
 12. Listen to learners and give constructive feedback
 13. What professional practices are to be exhibited by a student teacher?/Identify and remediate learners' difficulties or misconceptions, referring learners whose needs lie outside the competency of the teacher
 14. Keep meaningful records of every learner and communicate progress clearly to parents and learners
 15. Demonstrate awareness of national and school learning outcomes of learners
 16. Use objective criterion referencing to assess learners

The covariates considered for the analysis were sex, age, programme of study, class preference to teach during Year Four STS placement (Kindergarten, Lower Primary and Upper Primary), sex composition of the college, total student population of the college, mentoring university

and ecological zone. Additionally, path analysis was conducted to establish predictive relationships among variables such as STS mentorship, competencies, skills development, content knowledge, pedagogical knowledge, pedagogical content knowledge, NTS awareness, NTS adherence, NTS understanding, impactful STS, motivation towards teaching, and professional readiness to teach FLN.

Qualitative data were analysed thematically and managed using NVivo version 11. Reporting of qualitative findings followed the consolidated criteria for reporting qualitative research. Quality/trustworthiness of the qualitative data was pursued through thick descriptions, debriefing and member-checking. Both inductive and deductive techniques were applied to the text data.

3.0 RESULTS

3.1 Foundational Literacy

3.1.1 Self-reported competency in selecting appropriate teaching strategies for foundational literacy amongst Year Three student teachers

Figure 1 illustrates the percentage of Year Three student teachers who self-reported competence in selecting appropriate teaching strategies ascribed in the B.Ed. curricula for teaching foundational literacy. The figure shows that Listening (56.9%) and Writing and Reading (55.6%) were the two foundational literacy teaching strategies where most student teachers stated that they had competence. Less than half of student teachers indicated self-reported competence in the other four strategies.

Out of the six teaching strategies listed in the B.Ed. curricula for teaching foundational literacy, just about 2 out of every 5 student teachers self-reported that they were competent in choosing all the strategies for teaching. About 27.0% of the student teachers self-reported that they were competent in choosing between three and five of the strategies for teaching. More than one-half (53.4%) of student teachers self-reported being competent in selecting less than three of the strategies for teaching.

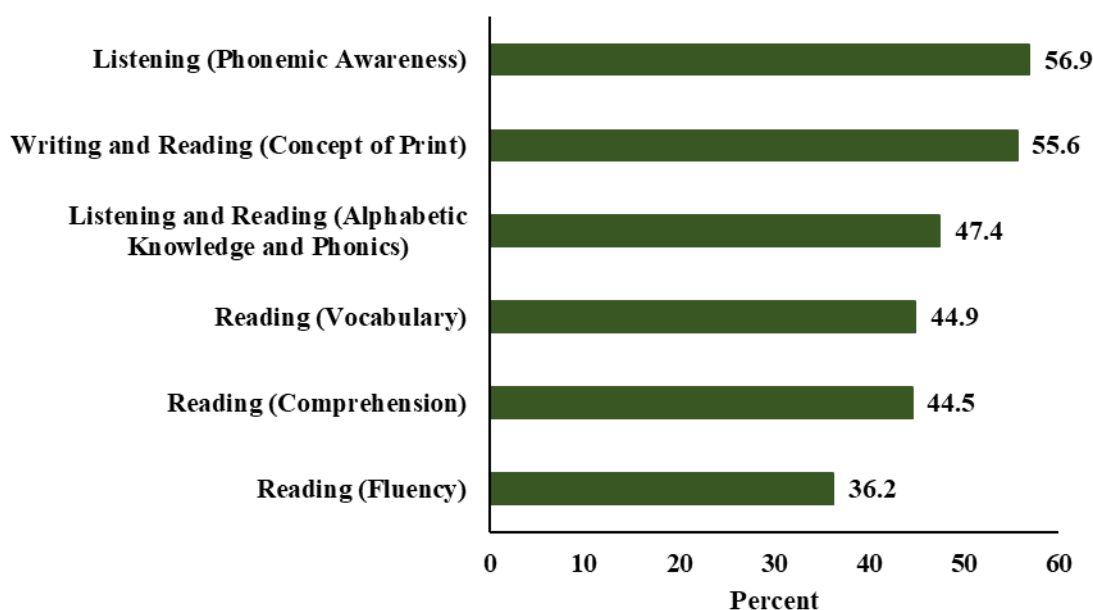


Figure 1: Competency in selecting the appropriate teaching strategies in foundational literacy

Note: Multiple response question. The sum of the percentages may exceed 100.0%

Table 4 shows the factors influencing Year Three student teachers' confidence in selecting teaching strategies for foundational literacy. Key predictors include sex, programme of study, preferred teaching level during STS, and the ecological zone where their college is located.

Male student teachers reported higher confidence than females in selecting appropriate strategies. However, since this is based on self-reporting, it does not necessarily indicate that female student teachers have lower actual competency. The upcoming lesson observation findings in the next report will provide further evidence on this.

Student teachers in B.Ed. Early Grade Education felt more confident in their abilities compared to those in B.Ed. Primary Education. There was no significant difference between those in B.Ed. Early Childhood Education and B.Ed. Primary Education.

Those who preferred teaching KG and lower primary reported greater confidence in their teaching strategies than those who preferred upper primary.

Student teachers in Coastal CoEs were more confident than those in the Savannah zone. There was no significant difference between those in Forest and Savannah zones.

Table 4. Predictors of level of competence in selecting appropriate teaching strategies for contents in foundational literacy.

Predictors	3 to 5 strategies vs. 2 or fewer strategies OR [95% CI]	all the strategies vs. 2 or fewer strategies OR [95% CI]
Sex		
Female	0.74 [0.60, 0.91] **	0.55 [0.44, 0.70] **
Male	1.00	1.00
Programme of study		
B. ED Early Grade Education	1.36 [1.00, 1.83] *	1.99 [1.41, 2.82] **
B. ED Early Childhood Education	0.90 [0.65, 1.24]	1.22 [0.84, 1.77]
B. ED Primary Education	1.00	1.00
Class prefers to teach during STS		
Upper Primary	1.00	1.00
KG	0.74 [0.51, 1.08]	0.72 [0.47, 1.10]
Lower Primary	0.83 [0.64, 1.08]	0.76 [0.56, 1.04]
KG and lower primary	2.92 [1.72, 4.93] **	2.93 [1.65, 5.19] **
Ecological zone		
Coastal	1.25 [0.88, 1.79]	1.86 [1.27, 2.71] **
Forest	1.19 [0.87, 1.62]	1.15 [0.82, 1.62]
Savannah	1.00	1.00

** $p < 0.01$; * $p < 0.05$

3.1.2 Self-reported competency amongst Year Three student teachers in selecting appropriate TLRs for foundational literacy

Figure 2 shows the percentage of Year Three student teachers who self-reported competence in selecting appropriate resources for each of the six teaching strategies for foundational literacy set out in their B.Ed. curricula. Listening (58.8%) and Writing and Reading (53.1%) were the foundational literacy teaching strategies where most student teachers stated that they had competence in selecting resources. Less than half of student teachers indicated self-reported competence in selecting resources for the other three strategies.

Out of the six teaching and learning resources outlined in the B.Ed. curricula for teaching foundational literacy, less than one-fifth (17.6%) of Year Three student teachers self-reported competency in using all for teaching. Further, less than one-third (27.7%) self-reported competency in using three to five for teaching. However, more than half (54.7%) of Year Three student teachers reported that they were competent in using two or fewer of the teaching and learning resources. These findings highlight a low self-reported level of competency in selecting appropriate teaching and learning resources for contents foundational literacy.

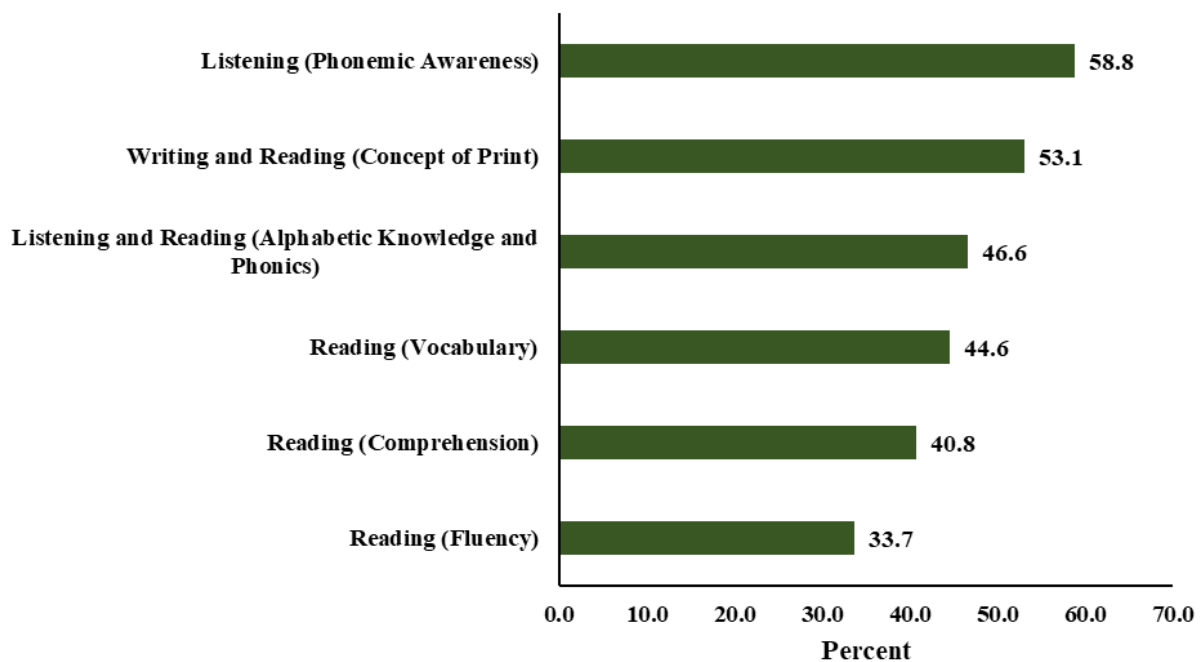


Figure 2: Competency in selecting appropriate TLRs for foundational literacy

Note: Multiple response question. The sum of the percentages may exceed 100.0%

Table 5 shows the factors influencing Year Three student teachers' confidence in selecting TLRs for foundational literacy. Key predictors include sex, preferred teaching level during STS, sex composition of the college, mentoring university, and total student population.

Male student teachers reported higher confidence than females in selecting appropriate resources. However, since this is based on self-reporting, it does not necessarily mean female

student teachers have lower actual competency. The upcoming lesson observation findings in the next report will provide further evidence on this.

Student teachers who preferred teaching KG and lower primary were more likely to report confidence in selecting TLRs than those who preferred upper primary.

Those in female-only CoEs reported higher confidence compared to those in mixed-gender CoEs.

Mentoring university also played a role. Student teachers mentored by KNUST, UoG, and UEW were more likely to report confidence in selecting TLRs than those mentored by UDS.

Table 5. Predictors of level of self-reported competence in selecting appropriate TLRs for content in Foundational Literacy.

Predictors	3 to 5 strategies vs. 2 or fewer strategies OR [95% CI]	all the strategies vs. 2 or fewer strategies OR [95% CI]
Sex		
Female	0.60 [0.48, 0.74] **	0.53 [0.41, 0.69] **
Male	1.00	1.00
Class prefers to teach during STS		
Upper Primary	1.00	1.00
KG	0.94 [0.69, 1.27]	0.80 [0.56, 1.15]
Lower Primary	1.09 [0.85, 1.41]	0.77 [0.57, 1.05]
KG and lower primary	2.60 [1.58, 4.26] **	2.16 [1.25, 3.73] **
Sex composition of college		
Female	1.39 [1.05, 1.83] *	1.43 [1.03, 1.97] *
Mixed	1.00	1.00
Mentoring university		
UCC	1.02 [0.68, 1.52]	1.25 [0.76, 2.05]
UoG	1.56 [0.95, 2.54]	2.81 [1.62, 4.88] **
UEW	1.27 [0.83, 1.95]	2.26 [1.36, 3.75] **
KNUST	2.37 [1.50, 3.74] **	2.33 [1.33, 4.06] **
UDS	1.00	1.00
Total student population		
Less than 1500	1.03 [0.75, 1.42]	1.58 [1.09, 2.28] *
1500 – 1999	0.79 [0.60, 1.02]	1.00 [0.73, 1.38]
2000 or more	1.00	1.00

** $p < 0.01$; * $p < 0.05$

3.2 Foundational Numeracy

3.2.1 Self-reported competency in selecting appropriate teaching strategies for content in foundational numeracy amongst Year Three student teachers

Figure 3 shows the percentage of Year Three student teachers who indicated self-reported competence in selecting appropriate teaching strategies for foundational numeracy in their B.Ed. curricula. The figure shows that Number Counting and Representation (74.9%) was the foundational literacy teaching strategies where most student teachers stated that they had competence. Less than half of student teachers indicated self-reported competence in the other seven strategies with the two strategies for Geometry and Measurement being lowest (25.2% and 24.2%).

Of the eight teaching strategies indicated in the B.Ed. curricula for teaching foundational numeracy, the majority (68.4%) of Year Three student teachers self-reported competency in using three or fewer of the strategies to teach. About one-fifth (19.3%) indicated competency in using between four and seven of the strategies, while just above one-tenth (12.3%) indicated competence in using all the strategies for teaching.

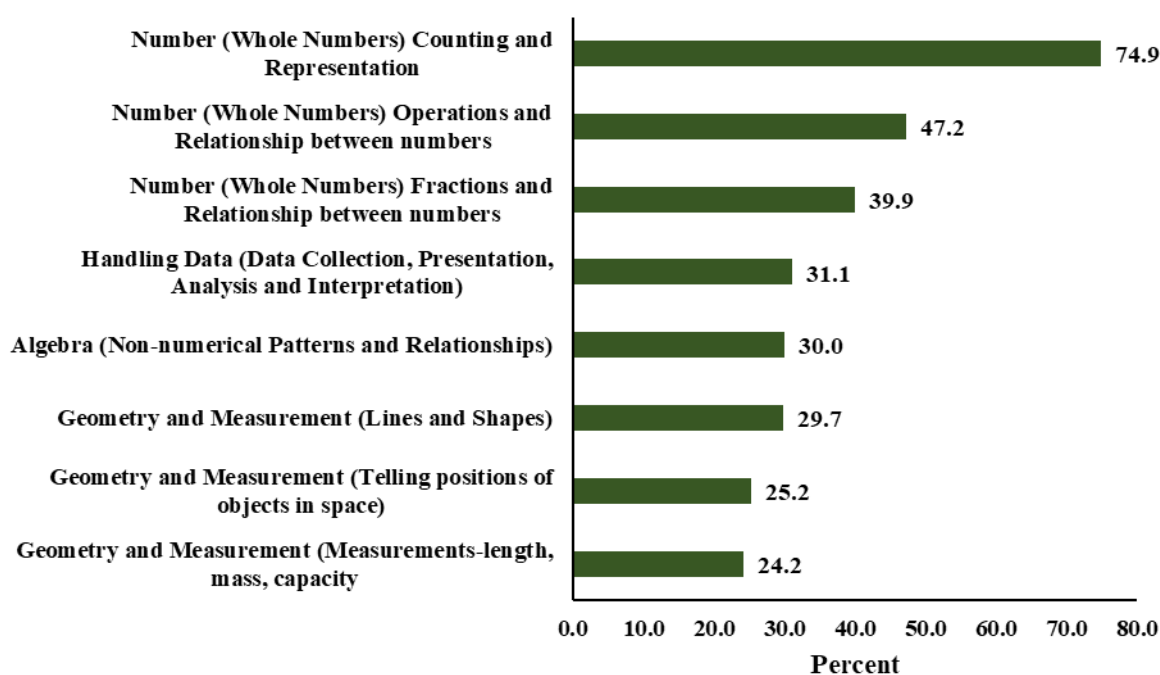


Figure 3: Competency in selecting the appropriate teaching strategies for content in foundation numeracy.

Note: Multiple response question. The sum of the percentages may exceed 100.0%

Table 6 presents the factors influencing Year Three student teachers' confidence in selecting teaching strategies for foundational numeracy. Key predictors include sex, programme of study, preferred teaching level during STS, and the sex composition of the college.

Female student teachers reported lower confidence in selecting appropriate numeracy teaching strategies compared to their male counterparts. However, this is based on self-reported data and may not necessarily indicate lower actual competency. Further lesson observations in upcoming reports will provide more insight into this disparity.

Student teachers enrolled in B.Ed. Early Grade Education exhibited higher confidence in their ability to select appropriate numeracy teaching strategies than those in B.Ed. There was no significant difference in confidence levels between those in B.Ed. Early Childhood Education and B.Ed.

When considering preferred teaching levels, student teachers who opted for KG or lower primary reported lower confidence in selecting numeracy teaching strategies compared to those preferring upper primary. However, those who indicated a preference for both KG and lower primary exhibited relatively higher confidence, suggesting that broader exposure to early-grade teaching may contribute to increased assurance in strategy selection.

The sex composition of CoEs also played a role, with student teachers from female-only CoEs reporting greater confidence in their numeracy teaching strategies compared to those from mixed CoEs.

Overall, confidence in selecting appropriate numeracy teaching strategies was higher among male student teachers, those enrolled in B.Ed. Early Grade Education, and those studying in female-only CoEs. Meanwhile, student teachers who preferred teaching KG or lower primary exhibited lower confidence levels in numeracy instruction.

Table 6. Predictors of the level of self-reported competence in selecting appropriate teaching strategies for foundational numeracy.

Predictors	4 to 7 of the strategies vs. three or fewer OR [95% CI]	All the strategies vs. three or fewer OR [95% CI]
Sex		
Female	0.59 [0.47, 0.75] **	0.34 [0.26, 0.45] **
Male	1.00	1.00
Programme of study		
B. ED Early Grade Education	1.55 [1.14, 2.10] **	1.68 [1.14, 2.47] **
B. ED Early Childhood Education	1.04 [0.72, 1.49]	1.38 [0.89, 2.14]
B. ED Primary Education	1.00	1.00
Class prefers to teach during STS		
Upper Primary	1.00	1.00
KG	0.63 [0.42, 0.95] *	0.56 [0.33, 0.92] *
Lower Primary	0.73 [0.54, 0.98] *	0.59 [0.41, 0.85] **
KG and lower primary	1.76 [1.06, 2.93] *	1.36 [0.73, 2.55]
Sex composition of college		
Female	1.31 [1.02, 1.70] *	1.46 [1.05, 2.03] *
Mixed	1.00	1.00

** $p < 0.01$; * $p < 0.05$

3.2.2 Year Three student teachers' self-reported competency in selecting appropriate TLRs for foundational numeracy

Figure 4 shows the percentage of Year Three student teachers who self-reported competency in selecting appropriate TLRs for foundational numeracy strategies in the B.Ed. curricula. Number Counting and Representation (72.0%) was the foundational strategy where most student teachers stated that they had competence in selecting appropriate resources. Less than half of student teachers indicated self-reported competence in the other seven strategies with the two strategies for Geometry and Measurement being lowest (26.0% and 25.1%).

Of the eight teaching and learning resources for foundational numeracy, just above 1 out of every 10 (11.4%) Year Three student teachers indicated that they were competent in using all for teaching. Just about one-fifth were competent in using between four to seven of the teaching and learning resources. The majority of Year Three student teachers (68.3%) self-reported that they were competent in using three or fewer of the teaching and learning resources. The results highlight low competency in selecting appropriate teaching and learning resources for contents in foundational numeracy.

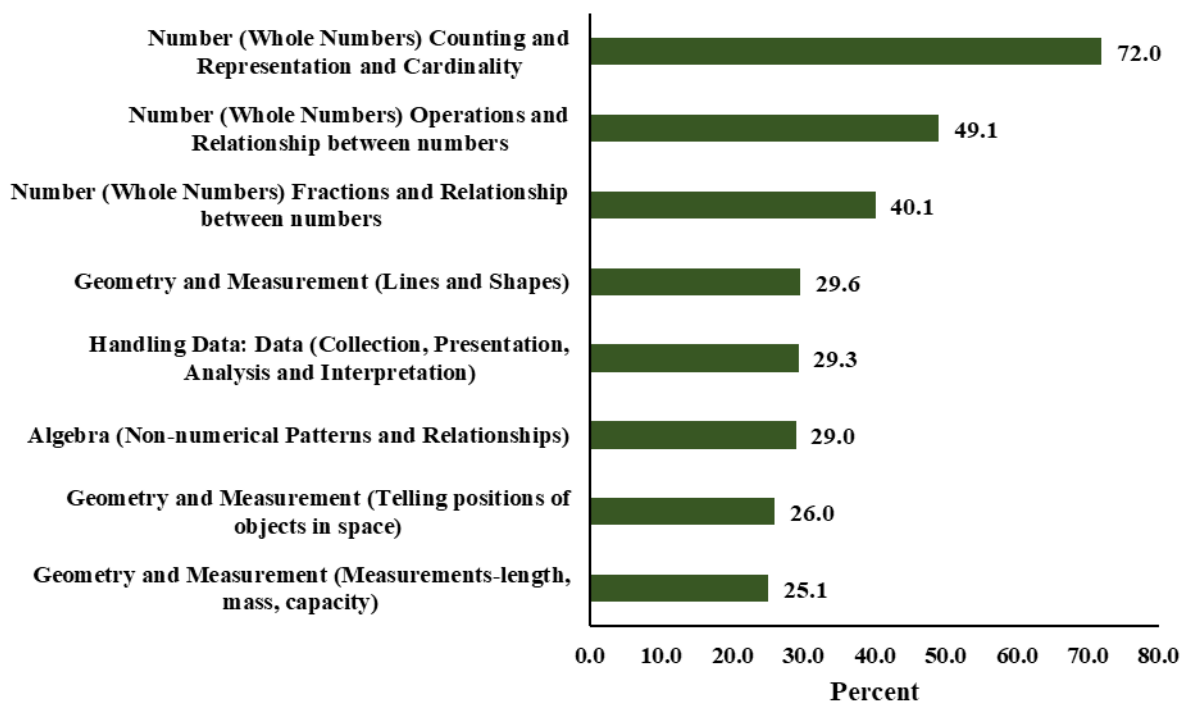


Figure 4: Competency in selecting appropriate TLRs for content in foundational numeracy

Note: Multiple response question. The sum of the percentages may exceed 100.0%

Table 7 presents the factors influencing Year Three student teachers' competence in selecting appropriate TLRs for foundational numeracy. The key predictors include sex, preferred teaching level during STS, the mentoring university and the ecological zone where the college is located were significant predictors of the competence in selecting appropriate teaching and learning resources for content in foundational numeracy.

Female student teachers reported lower competence in selecting TLRs for foundational numeracy compared to their male counterparts. This trend suggests potential differences in confidence levels rather than actual ability, as the findings are based on self-reported data. Further lesson observations will provide additional insights into this disparity.

Preferred teaching level during STS also played a role in competence levels. Student teachers who preferred teaching both KG and lower primary demonstrated significantly higher competence than those who preferred upper primary.

The mentoring university also influenced competence levels. Student teachers mentored by KNUST showed higher competence compared to those mentored by the UDS. On the other hand, those mentored by the UCC demonstrated lower competence. No significant differences were found among student teachers mentored by the UEW, and the UoG.

Ecological zone was another key predictor. Student teachers from CoEs located in the Coastal zone exhibited significantly higher competence compared to those from the Savannah zone.

Those from the Forest zone also showed a tendency toward higher competence, but the difference was not statistically significant.

Table 7. Predictors of level of competence in selecting appropriate TLRs for content in foundational numeracy.

Predictors	4 to 7 of the teaching and learning resources vs. 3 or fewer OR [95% CI]	all the teaching and learning resources vs. 3 or fewer OR [95% CI]
Sex		
Female	0.56 [0.45, 0.70] **	0.43 [0.33, 0.57] **
Male	1.00	1.00
Class prefers to teach during STS		
Upper Primary	1.00	1.00
KG	0.82 [0.58, 1.17]	0.82 [0.53, 1.27]
Lower Primary	0.97 [0.74, 1.29]	0.67 [0.46, 0.96] *
KG and lower primary	3.03 [1.87, 4.90] **	1.86 [1.00, 3.46] *
Mentoring university		
UCC	0.83 [0.50, 1.37]	0.44 [0.23, 0.86] *
UoG	1.46 [0.73, 2.93]	0.74 [0.31, 1.79]
UEW	1.07 [0.65, 1.76]	0.75 [0.39, 1.43]
KNUST	1.92 [1.15, 3.19] *	0.65 [0.32, 1.32]
UDS	1.00	1.00
Ecological zone		
Coastal	1.10 [0.66, 1.83]	2.19 [1.10, 4.37] *
Forest	1.03 [0.68, 1.55]	1.80 [1.00, 3.25]
Savannah	1.00	1.00

** $p < 0.01$; * $p < 0.05$

3.2.3 Factors that influence student teachers' ability to adhere to NTS in teaching at the early grades

3.2.3.1 Self-reported Awareness of the NTS

The survey results revealed that less than half (48%) of student teachers had a copy of the NTS, whereas just above half (51%) stated that they were familiar with all of its seven sub-domains. Further, 40.0% of student teachers neither had a copy of the NTS nor reported that they were familiar with its seven sub-domains.

Among those who indicated that they were familiar with the seven sub-domains of the NTS, Figure 5 shows that the majority (72.5%) were aware that it covers professional development, while one-half (50.0%) identified that the NTS also covers knowledge of educational frameworks and curriculum (Figure 5). It is important to note that less than one-half of student teachers who claimed to be familiar with the sub-domains of the NTS, were aware that the NTS

covers assessment, teaching and learning, managing the learning environment and knowledge of learners. Less than one-third of student teachers who claimed to be familiar with the content of NTS were aware that ‘community of practice’ is a sub-domain in the NTS. The results therefore highlight a low level of knowledge among student teachers who claimed to be familiar with the contents of the NTS.

Among the Year Three student teachers' who claimed to be familiar with the seven sub-domains of the NTS, more than 6 out of every 10 were aware of three or fewer of the sub-domains of the NTS. Further, among those who claimed to be aware of the sub-domains, about one-fifth (22.3%) were aware of between four and six of the sub-domains. Only 13.8% were aware of all the seven sub-domains of the NTS. The findings enforce generally low awareness of the specific sub-domains of the NTS among student teachers.

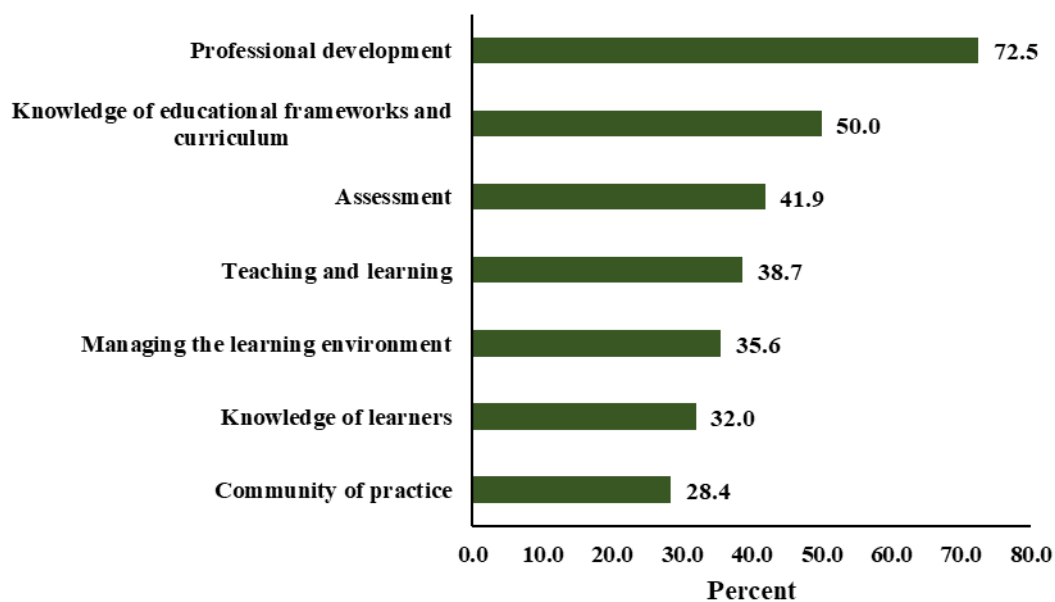


Figure 5: Awareness of the sub-domains of the NTS

Note: Multiple response question. Percentages may exceed 100.0%

The Table 8 presents the factors influencing Year Three student teachers' awareness of the sub-domains of the NTS. Key predictors include sex of the student teacher, the class they prefer to teach during the STS, the sex composition of the college, mentoring university and the total student population of the college were predictors of self-reported awareness of the contents of the NTS.

Preferred teaching level during STS was also a factor. Student teachers who indicated their preference to teach KG and lower primary, as well as those open to teaching across all levels, reported higher awareness of the NTS sub-domains than those who preferred upper primary. This suggests that exposure to early-grade teaching may be linked to a stronger familiarity with the NTS.

The sex composition of the college was another predictor. Student teachers from female-only CoEs reported greater awareness of the NTS sub-domains than those from mixed CoEs. This

may reflect differences in institutional emphasis on professional standards and teacher preparation.

Mentoring universities also influenced awareness levels. Student teachers mentored by KNUST reported higher awareness of the NTS sub-domains compared to those mentored by the UDS. No significant differences were found among students mentored by the UCC, the UEW, and the UoG.

Ecological zone also played a role. Student teachers in the Forest zone reported lower awareness of the contents of the NTS when compared to those in the Savannah zone. However, no significant differences were found between students in the Coastal and Savannah zones.

Table 8. Predictors of the level of awareness of the sub-domains of the NTS.

Predictors	4 to 7 sub-domains vs. 3 or fewer OR [95% CI]	All sub-domains vs. 3 or fewer OR [95% CI]
Sex		
Female	0.68 [0.50, 0.93] *	0.41 [0.27, 0.64] **
Male	1.00	1.00
Class prefers to teach during STS		
Upper Primary	1.00	1.00
KG	0.92 [0.57, 1.46]	1.64 [0.95, 2.83]
Lower Primary	0.92 [0.62, 1.36]	1.16 [0.72, 1.87]
KG and lower primary	2.35 [1.17, 4.75] *	3.01 [1.30, 6.96] *
All	1.35 [0.57, 3.17]	2.57 [1.11, 5.95] *
Sex composition of college		
Female	1.07 [0.65, 1.74]	2.78 [1.59, 4.85] **
Mixed	1.00	1.00
Mentoring university		
UCC	1.47 [0.72, 3.02]	0.96 [0.37, 2.48]
UoG	1.36 [0.50, 3.75]	0.40 [0.10, 1.62]
UEW	1.50 [0.74, 3.05]	0.90 [0.35, 2.30]
KNUST	3.13 [1.59, 6.17] **	1.95 [0.79, 4.78]
UDS	1.00	1.00
Ecological zone		
Coastal	0.77 [0.37, 1.60]	1.70 [0.66, 4.40]
Forest	0.58 [0.34, 0.99] *	0.94 [0.43, 2.07]
Savannah	1.00	1.00

** $p < 0.01$; * $p < 0.05$

3.2.4 Awareness of the seven attributes under the Professional Values and Attitudes domain of the National Teachers' Standards

The NTS has three domains- i.) Professional Values and Attitudes, ii.) Professional Knowledge and iii.) Professional Practice. Each of these domains has a set of specified attributes that teachers are supposed to exhibit. There are seven specific attributes under the Professional Values and Attitudes domain. Figure 6 lists these specific attributes along with the percentage of Year Three student teachers who indicated awareness of each attribute. Three of the attributes- 'seek to improve teaching and learning' (60.2%), 'aim for professional development through lifelong learning and continuous professional development' (54.1%) and 'act as a good role model for students' (50.2%) were named by more than half of the student teachers. The other four attributes were named by less than half of the student teachers, with only 30.3% of student teachers naming 'be an agent of change in the school, community and country'.

Among Year Three student teachers who indicated that they were familiar with the contents of the NTS, 6 out of every 10 were aware of three or fewer of the seven professional values and attitudes to be exhibited by a student teacher as outlined in the NTS. About 1 in every 5 were aware of between 4 and six of the professional values and attitudes, while only 17.2% were aware of all the values and attitudes.

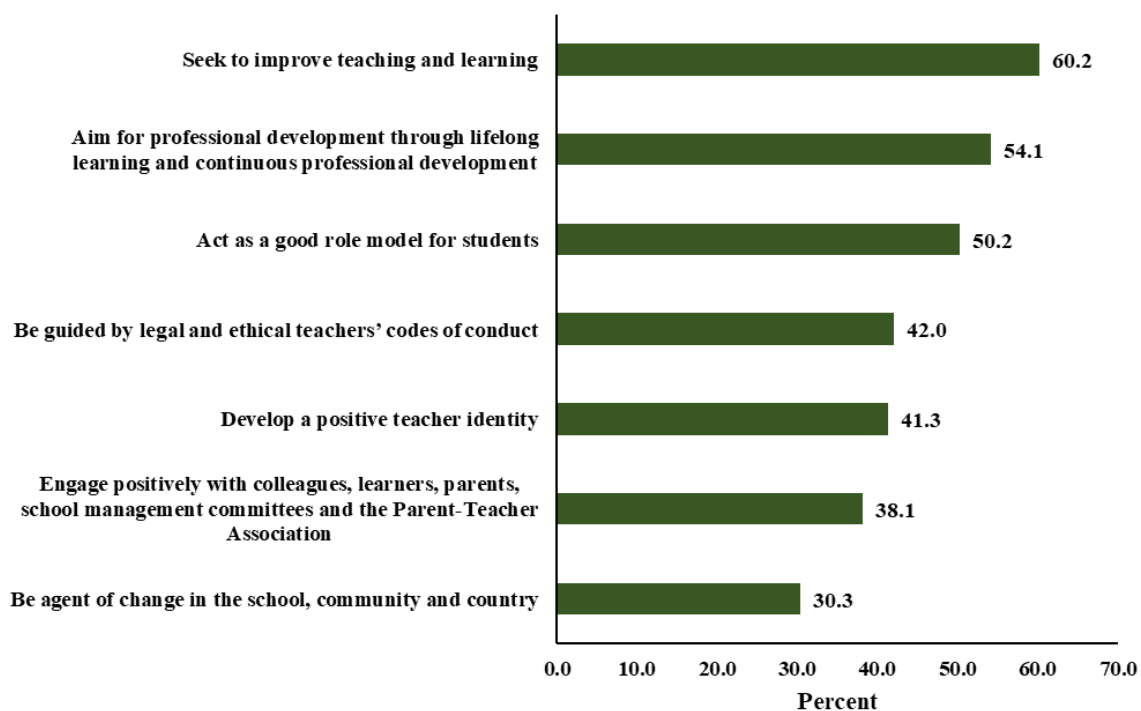


Figure 6: Awareness of the seven attributes under the 'professional values and attitudes' domain of the NTS amongst Year Three student teachers

Note: Multiple response question. Percentages may exceed 100.0%

Table 9 presents the factors influencing Year Three student teachers' awareness of the seven attributes under the 'professional values and attitudes' domain of the NTS. Key predictors include sex, programme of study, preferred teaching level during STS, sex composition of the college, and mentoring university.

Male student teachers reported higher awareness of the professional values and attitudes domain compared to female student teachers. However, since this is based on self-reported data, it does not necessarily indicate that female student teachers have lower actual understanding of these attributes. The upcoming lesson observation findings will provide further insights into this.

Programme of study was also a factor. Student teachers enrolled in B.Ed. Early Grade Education reported higher awareness of the attributes under this domain compared to those in B.Ed. Primary Education. However, no significant differences were observed between those in B.Ed. Early Childhood Education and B.Ed. Primary Education.

Preferred teaching level during STS played a role in awareness levels. Student teachers who preferred teaching both KG and lower primary reported higher awareness compared to those who preferred upper primary. No significant differences were observed for those who preferred KG or lower primary individually.

The sex composition of the college was another predictor. Student teachers from female-only CoEs reported higher awareness of the professional values and attitudes domain compared to those from mixed CoEs. This suggests that female-only institutions may place greater emphasis on professional values as part of teacher preparation.

Mentoring university also influenced awareness levels. Student teachers mentored by KNUST reported higher awareness compared to those mentored by the UDS. No significant differences were found among students mentored by the UCC, the UEW, and UoG.

Table 9. Predictors of the level of awareness of the seven attributes under the ‘professional values and attitudes’ domain of the NTS amongst Year Three student teachers.

	4 to 6 attributes vs. 3 or fewer OR [95% CI]	All attributes vs. 3 or fewer OR [95% CI]
Sex		
Female	0.61 [0.44, 0.85] **	0.36 [0.25, 0.52] **
Male	1.00	1.00
Programme of study		
B. ED Early Grade Education	2.94 [1.48, 5.82] **	1.63 [0.79, 3.38]
B. ED Early Childhood Education	1.25 [0.68, 2.28]	1.14 [0.60, 2.16]
B. ED Primary Education	1.00	1.00
Class prefers to teach during STS		
Upper Primary	1.00	1.00
KG	0.64 [0.35, 1.17]	1.11 [0.58, 2.12]
Lower Primary	0.64 [0.41, 0.98] *	1.07 [0.67, 1.72]
KG and lower primary	1.95 [0.92, 4.12]	2.48 [1.10, 5.60] *
Sex composition of college		
Female	1.24 [0.84, 1.84]	1.78 [1.16, 2.74] **
Mixed	1.00	1.00
Mentoring university		
UCC	1.22 [0.63, 2.36]	1.08 [0.52, 2.27]
UoG	1.15 [0.57, 2.30]	1.59 [0.72, 3.50]
UEW	0.78 [0.47, 1.32]	1.27 [0.71, 2.27]
KNUST	2.22 [1.14, 4.35] *	2.27 [1.05, 4.91] *
UDS	1.00	1.00

** $p < 0.01$; * $p < 0.05$

3.2.5 Awareness of the six attributes under the ‘Professional Knowledge’ domain of the NTS amongst Year Three student teachers

The second domain of the NTS is ‘Professional Knowledge’. There are six specific attributes listed under the Professional Knowledge domain. Figure 7 lists these specific attributes along with the percentage of Year Three student teachers who indicated awareness of each attribute. One of the attributes-‘familiarity with the education system and key policies guiding it’ (58.8%), was named by more than half of the student teachers. The other five attributes were named by between 41.5% and 47.9% of Year Three student teachers.

The results show that among the 51.0% of Year Three student teachers who claimed that they were familiar with the contents of the NTS, 66.3% were aware of three or fewer of the six attributes, 14.7% were aware of between 4 and 5 attributes and 19.0% were aware of all the attributes.

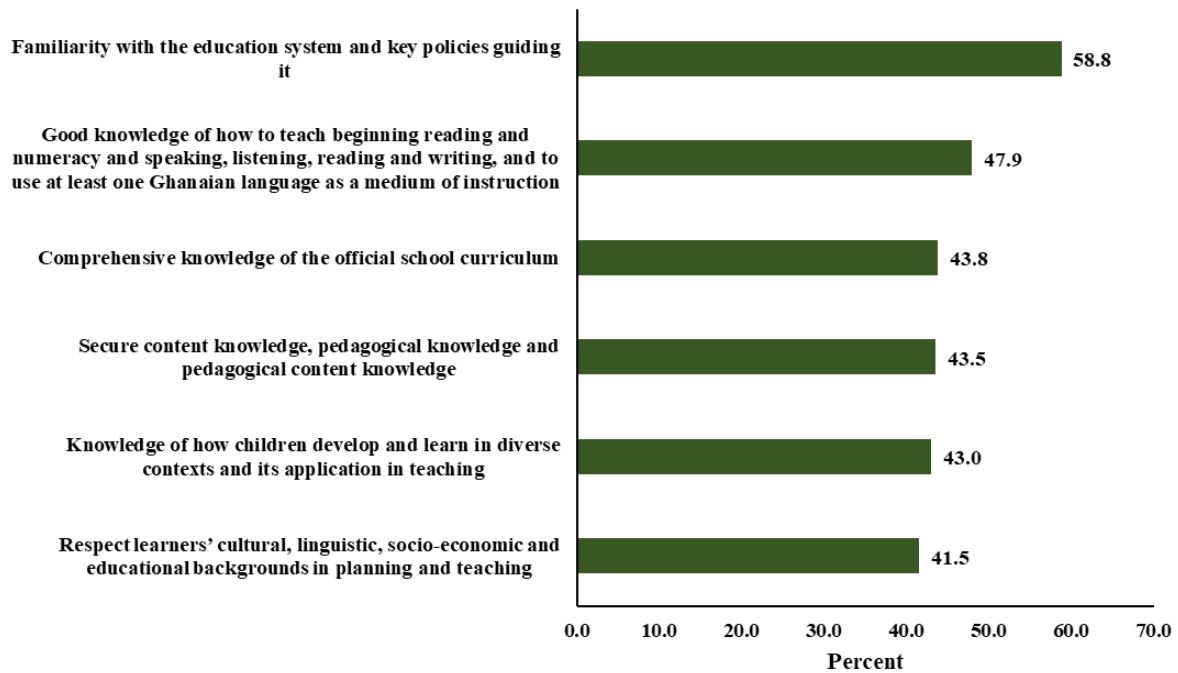


Figure 7: Awareness of the six attributes under the 'professional knowledge' domain of the NTS amongst Year Three student teachers

Note: Multiple response question. Percentages may exceed 100.0%

Table 10 shows student teachers' level of awareness of the six attributes under the 'Professional Knowledge' domain of the NTS. The results show that among the 51.0% of student teachers who claimed that they were familiar with the contents of the NTS, 66.3% were aware of less than four of the six attributes (low awareness), 14.7% were aware of between 4 and 5 attributes (moderate) and 19.0% were aware of all the attributes (high awareness).

sex, age, class preference to teach during STS, sex composition of the college, mentoring university and ecological zone.

Male student teachers reported higher awareness of the professional knowledge they are expected to exhibit when compared to female student teachers. However, since this is based on self-reported data, it does not necessarily indicate that female student teachers have lower actual understanding of these attributes. The upcoming lesson observation findings will provide further insights into this.

Preferred teaching level during STS also influenced awareness levels. Student teachers who preferred teaching both KG and lower primary reported higher awareness compared to those who preferred upper primary. In contrast, those who preferred only KG reported lower awareness. No significant differences were found among those who preferred lower primary.

The sex composition of the college was another factor. Student teachers from female-only CoEs reported higher awareness of the professional knowledge domain compared to those from

mixed CoEs. This suggests that female-only institutions may place greater emphasis on professional knowledge within their teacher preparation programmes.

Mentoring university also played a role. Student teachers mentored by the UoG reported higher awareness compared to those mentored by the UDS. No significant differences were found among students mentored by the UCC, the UEW, and KNUST.

Ecological zone was another key predictor. Student teachers in the Coastal zone reported lower awareness compared to those in the Savannah zone. However, no significant differences were observed between student teachers in the Forest and Savannah zones.

Table 10. Predictors of the level of awareness of the attributes under the professional knowledge domain amongst Year Three student teachers.

Predictors	4 to 5 attributes vs. 3 or fewer OR [95% CI]	All attributes vs. 3 or fewer OR [95% CI]
Sex		
Female	0.68 [0.47, 0.98] *	0.46 [0.33, 0.65] **
Male	1.00	1.00
Class prefers to teach during STS		
Upper Primary	1.00	1.00
KG	0.50 [0.28, 0.91] *	1.08 [0.66, 1.76]
Lower Primary	0.75 [0.46, 1.21]	0.93 [0.62, 1.42]
KG and lower primary	1.89 [0.87, 4.09]	2.10 [1.01, 4.39] *
Sex composition of college		
Female	1.44 [0.82, 2.55]	1.82 [1.15, 2.87] *
Mixed	1.00	1.00
Mentoring university		
UCC	0.60 [0.29, 1.22]	0.75 [0.37, 1.51]
UoG	4.02 [1.22, 13.27] *	1.05 [0.36, 3.06]
UEW	0.86 [0.43, 1.71]	1.12 [0.56, 2.22]
KNUST	1.11 [0.54, 2.27]	1.47 [0.73, 2.97]
UDS	1.00	1.00
Ecological zone		
Coastal	0.21 [0.08, 0.56] **	0.92 [0.43, 1.96]
Forest	0.58 [0.32, 1.07]	0.84 [0.47, 1.51]
Savannah	1.00	1.00

** $p < 0.01$; * $p < 0.05$

3.2.6 Awareness of the sixteen specific attributes under the ‘Professional Practice’ domain of the NTS amongst Year Three student teachers.

The third domain of the NTS is ‘Professional Practice’. There are sixteen specific attributes listed under the Professional Knowledge domain. Figure 8 lists these specific attributes along with the percentage of Year Three student teachers who indicated awareness of each attribute. Over half of the student teachers were aware that the professional practice attributes include ‘planning and delivering varied and challenging lessons’ (51.3%) and ‘creating a safe and encouraging learning environment’ (50.3%). Less than half of student teachers were aware of the remaining fourteen attributes with ‘demonstrate awareness of national and school learning outcomes for learners’ (23.4%), ‘identify and remediate learners’ difficulties or misconceptions’ (22.5%) and ‘use objective criterion referencing to assess learners’ (20.5%) having the lowest levels of awareness.

Of the sixteen attributes of professional practice outlined in the NTS, among student teachers who self-reported that they were familiar with the contents of the NTS, the majority (73.3%) were aware of seven or fewer of the practices. The results also show that 16.1% were aware of between 8 and 15 of the practices. Only 1 in 10 were aware of all the professional practices they were expected to exhibit.

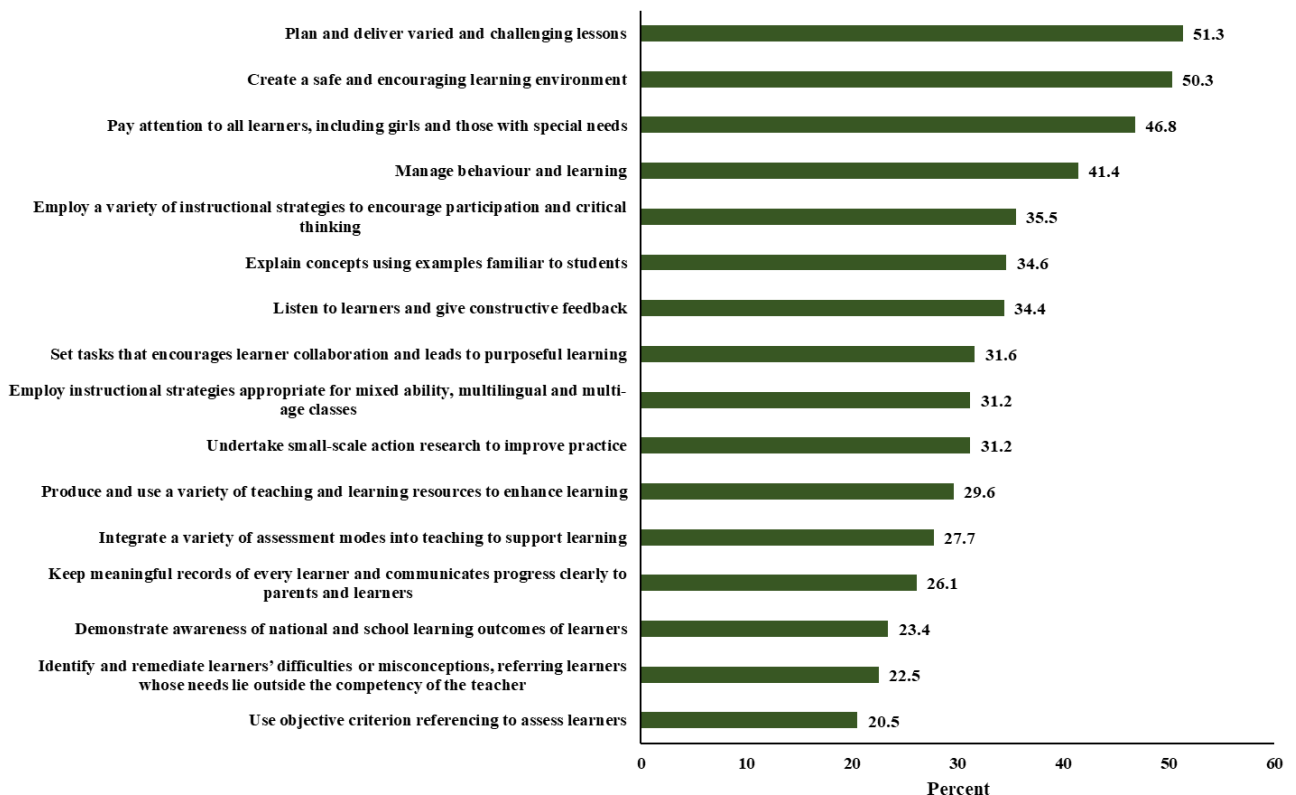


Figure 8: Awareness of the sixteen specific attributes under the ‘professional practice’ domain of the NTS amongst Year Three student teachers

Note: Multiple response question. Percentages may exceed 100.0%

Table 11 shows student teachers' level of awareness of the specific attributes under the professional practice domain. Of the sixteen attributes of professional practice outlined in the NTS, among student teachers who indicated that they were familiar with the contents of the NTS, the majority (73.3%) were aware of less than half of the practices. Table 11 presents the factors influencing Year Three student teachers' knowledge of the professional practices expected of a student teacher. Key predictors include sex, age, the programme of study, class preference to teach during STS and the sex composition of the college.

Male student teachers reported higher awareness of professional practices when compared to their male counterparts.

Programme of study also played a role. Student teachers enrolled in B.Ed. Early Grade Education reported higher awareness of the professional practices when compared to those aged 25 years or older.

Preferred teaching level during STS was another key factor. Student teachers who preferred teaching both KG and lower primary reported higher knowledge of professional practices compared to those who preferred upper primary. No significant differences were observed among those who preferred only KG or only lower primary.

The sex composition of the college also influenced knowledge levels. Student teachers in all-female-only CoEs reported higher awareness of the professional practices when compared to those attending mixed-sex colleges.

Table 11. Predictors of the level of knowledge of the professional practices to be exhibited by a student teacher. Aware of:

Predictors	8 to 15 practices vs. 7 or fewer OR [95% CI]	All practices vs. 7 or fewer OR [95% CI]
Sex		
Female	0.67 [0.47, 0.95] *	0.33 [0.21, 0.52] **
Male	1.00	1.00
Age		
Less than 25 years	0.96 [0.71, 1.31]	0.67 [0.47, 0.95] *
25 years or older	1.00	1.00
Programme of study		
B. ED Early Grade Education	1.64 [1.04, 2.57] *	1.25 [0.68, 2.32]
B. ED Early Childhood Education	1.09 [0.63, 1.89]	1.13 [0.57, 2.23]
B. ED Primary Education	1.00	1.00
Class prefers to teach during STS		
Upper Primary	1.00	1.00
KG	0.75 [0.40, 1.42]	1.41 [0.66, 3.04]
Lower Primary	0.90 [0.57, 1.42]	0.71 [0.41, 1.25]
KG and lower primary	2.37 [1.11, 5.06] *	2.58 [1.02, 6.53] *
Sex composition of college		
Female	0.96 [0.64, 1.43]	2.32 [1.44, 3.72] **
Mixed	1.00	1.00

** $p < 0.01$; * $p < 0.05$

3.2.7 Student teachers' view of what the NTS aims to promote

The majority (76.6%) of student teachers indicated that the NTS aims to promote professional development (Figure 9). However, less than one-half of student teachers were aware of the other aims of the NTS. The least known among the aims was community of practice, which only one-quarter of student teachers were aware of.

The majority (65.7%) of Year Three student teachers were aware of three or fewer of what the NTS aims to promote. A quarter were aware of between four and six of the seven aims of the NTS. Only 13.8% were aware of all the aims of the NTS.

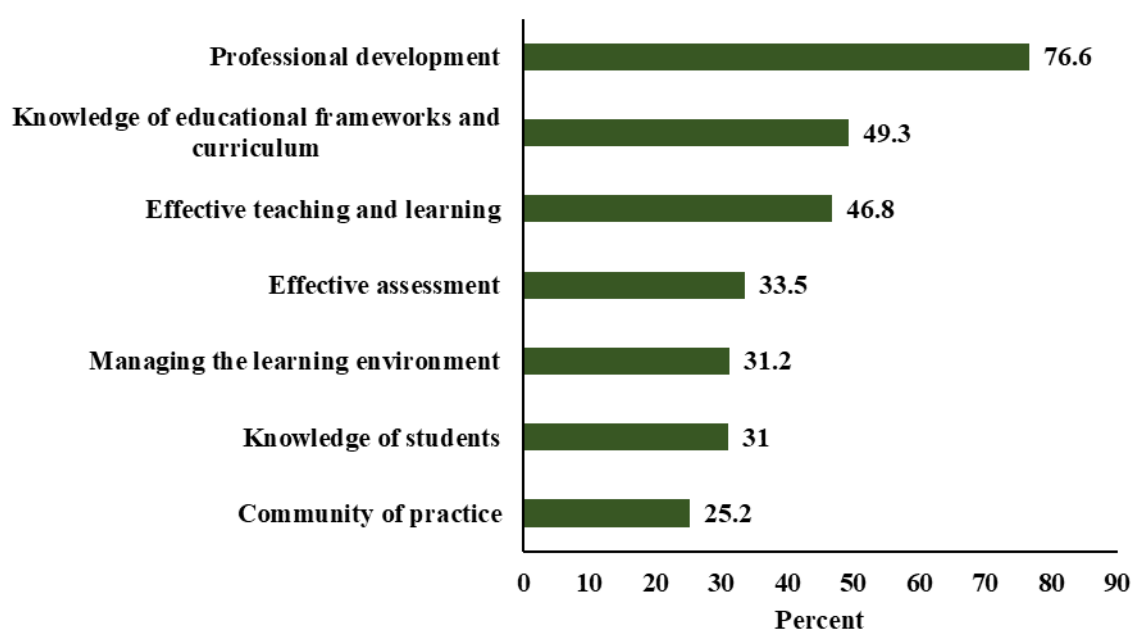


Figure 9: Awareness of what the NTS aims to promote

Note: Multiple response question. Percentages may exceed 100.0%

Table 12 presents the factors influencing Year Three student teachers' awareness of what the NTS aims to promote. Key predictors include sex, programme of study, class preference to teach during STS and the sex composition of the college.

Male student teachers reported higher awareness of what the NTS aims to promote compared to female student teachers. However, since this is based on self-reported data, it does not necessarily indicate that female student teachers have lower actual understanding of the NTS. Further analysis, including lesson observations, will provide more insight into this difference.

Programme of study was another factor. Student teachers in B.Ed. Early Grade Education reported higher awareness compared to those in B.Ed. Primary Education. No significant differences were found between those in B.Ed. Early Childhood Education and B.Ed. Primary Education.

Preferred teaching level during STS also played a role. Student teachers who preferred teaching KG or lower primary reported lower awareness compared to those who preferred

upper primary. However, no significant differences were found among those who preferred teaching both KG and lower primary.

The sex composition of the college was another key predictor. Student teachers from female-only CoEs reported higher awareness of what the NTS aims to promote compared to those from mixed CoEs. This suggests that female-only institutions may place greater emphasis on professional standards and teacher expectations.

Table 12. Predictors of the level of awareness of what the NTS aims to promote. Aware of:

Predictors	4 to 6 of the aims vs. 3 or fewer OR [95% CI]	All the aim vs. 3 or fewer OR [95% CI]
Sex		
Female	0.84 [0.61, 1.16]	0.30 [0.20, 0.46] **
Male	1.00	1.00
Programme of study		
B. ED Early Grade Education	1.56 [1.02, 2.38] *	1.64 [0.97, 2.75]
B. ED Early Childhood Education	0.96 [0.58, 1.59]	1.21 [0.66, 2.19]
B. ED Primary Education	1.00	1.00
Class prefers to teach during STS		
Upper Primary	1.00	1.00
KG	0.49 [0.28, 0.87]	1.05 [0.53, 2.08]
Lower Primary	0.61 [0.41, 0.91]	0.79 [0.48, 1.31]
KG and lower primary	1.54 [0.75, 3.15]	1.89 [0.80, 4.44]
Sex composition of college		
Female	0.88 [0.61, 1.28]	2.85 [1.85, 4.39] **
Mixed	1.00	1.00

** $p < 0.01$; * $p < 0.05$

3.2.8 Student teachers' content knowledge in FLN

From Figure 10, the percentage of student teachers who indicated having good content knowledge in FLN, ranged between 42.1% to 48.0%. Specifically, between 42.5% to 48.0% had good content knowledge in numeracy, while 42.1% to 46.0% had good knowledge in literacy content. Within the category that indicated having very good content knowledge, they were less than 40% for numeracy and less than 45% for literacy. Between 15.2% to over 23% had poor content knowledge in numeracy as against 12.1% to less than 14% for literacy. Overall, less than 50% had either good or very good content knowledge in FLN. This indicates student teachers' low content knowledge acquisition in FLN and has a negative influence on how effective they will be in selecting the right pedagogy across the knowledge areas for actual classroom practice. Again, it judges what content they are to inculcate in learners if they are not abreast of the curriculum themselves.

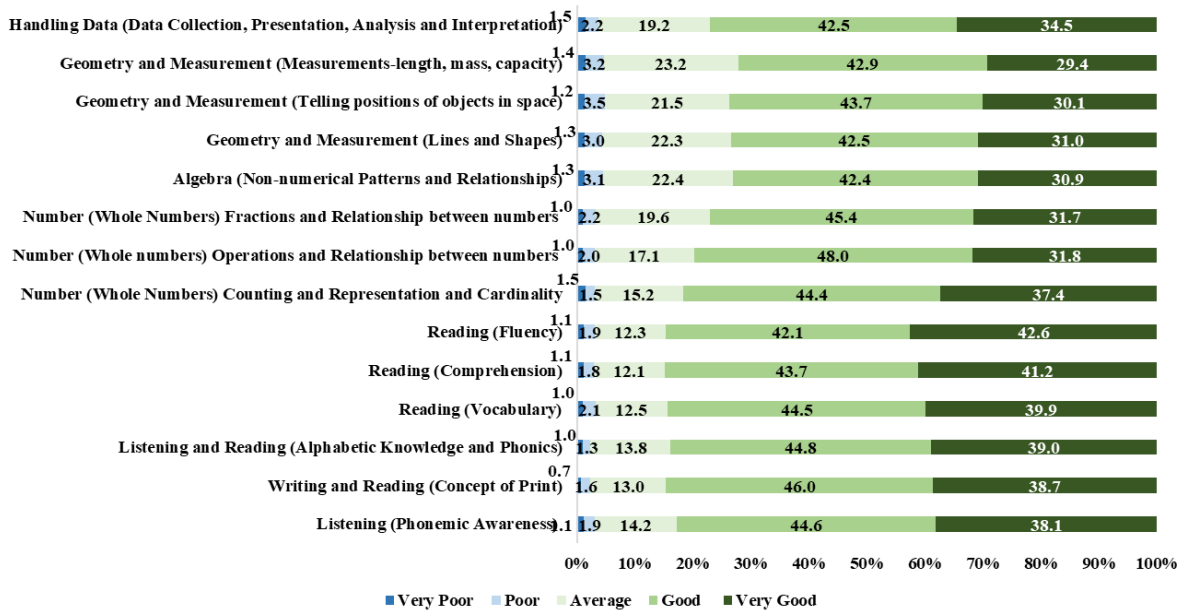


Figure 10. Level of content knowledge in FLN

3.2.9 Student teachers' pedagogical knowledge in FLN

Figure 11 provides information on student teacher's views on their pedagogical knowledge in FLN. From the figure, less than 50% indicated having good pedagogical knowledge in both literacy and numeracy, with the highest percentage being 46.7% in the use of questioning techniques to promote deep learning. The least percentage however, was 41.2% in relation to the use of relevant active play-based methods. Similar trend was recorded for those who responded positively to having a very good pedagogical knowledge. Only 40.9% had very good knowledge in two of the pedagogies (group work techniques, and creation of learner-centred classroom environment), as well as 41.2% who had good knowledge in use of relevant active play-based methods. Less than 40% of student teachers had very good knowledge of the remaining pedagogies. The reveals that generally, student teachers had low knowledge in the pedagogies that are relevant for teaching the FLN curriculum.

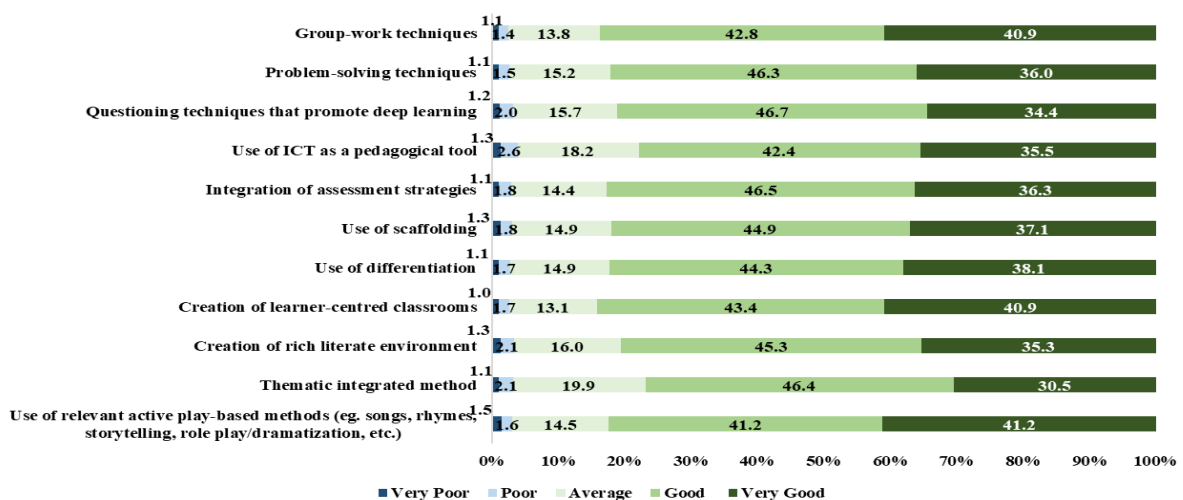


Figure 11. Level of pedagogical knowledge in FLN

3.2.10 Student teachers' pedagogical content knowledge in FLN

Student teachers' ability to select the most suitable pedagogy (methods or techniques) in teaching appropriate content at the foundational level is key to promoting understanding and enthusiasm of learners. However, Figure 12 depicts low acquisition levels of good pedagogical content knowledge by student teachers. Just like the afore discussed knowledge areas, less than half (maximum 47.1%) of student teachers had good pedagogical content knowledge in teaching the FLN curriculum. Out of the lot, only less than 40% (maximum 35.9%) responded positive to possessing very good pedagogical content knowledge. The lack of pedagogical content knowledge among student teachers does not resonate with the expectations of initial teacher training CoEs on their efforts toward adequate professional preparation of teachers for foundational learning.

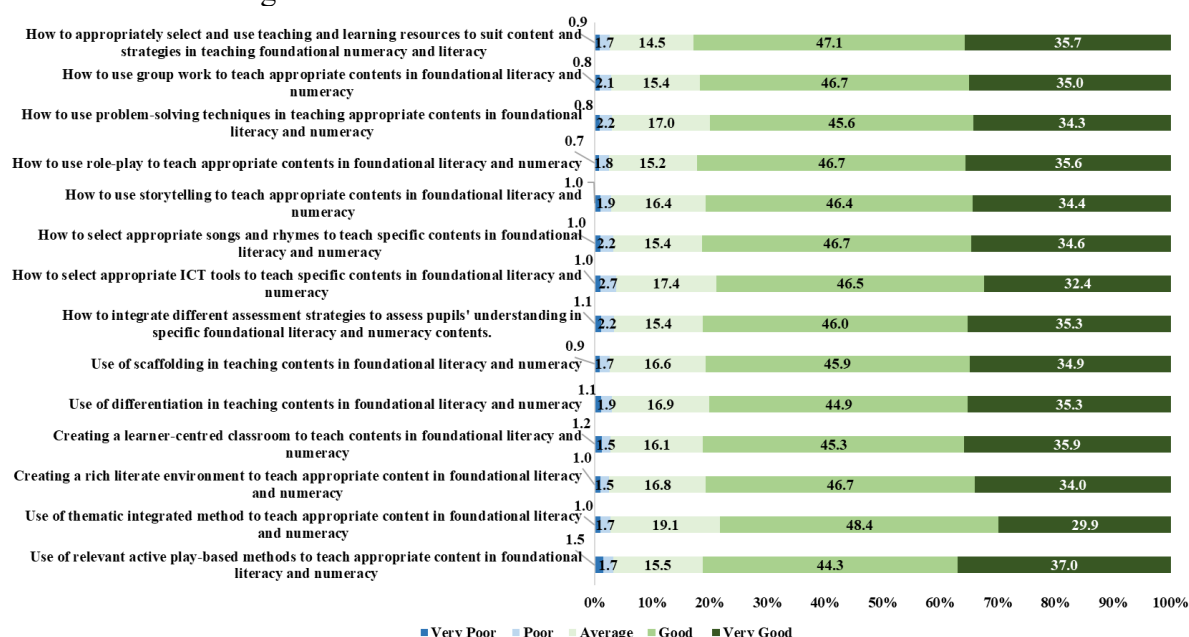


Figure 12. Level of pedagogical content knowledge in FLN

3.2.11 Students' Expectations of the Effects of STS Practicum and STS Mentorship

Table 13 presents the reported effect of the STS practicum on various aspects of student teachers' professional development. The findings reflect student teachers' self-reported perceptions of how the practicum has influenced their competence, skills, and knowledge. Student teachers reported that the STS practicum had the strongest effect on their STS competence and STS skills development, suggesting that they felt more confident in their ability to apply their learning effectively in classroom settings. Additionally, they reported that the practicum contributed to their content knowledge, pedagogical content knowledge, and pedagogical knowledge, indicating that it helped them deepen their understanding of subject matter and teaching approaches.

While these findings suggest that student teachers perceive the practicum as beneficial to their professional growth, lesson observations and further analysis will provide additional insights into whether these self-reported improvements translate into classroom practice.

Table 13. Perceived Expected effect of STS practicum on student teachers' professional development

Relationship	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	CI 2.5%	97.5%
STS_Practicum -> Content Knowledge	0.425	0.425	0.021	20.387	0.000*	0.384	0.465
STS_Practicum -> Pedagogical Content Knowledge	0.418	0.419	0.022	19.383	0.000*	0.376	0.459
STS_Practicum -> Pedagogical Knowledge	0.415	0.416	0.021	19.647	0.000*	0.374	0.457
STS_Practicum -> STS_Competence	0.566	0.567	0.019	29.768	0.000*	0.529	0.603
STS_Practicum -> STS_Skills Development	0.471	0.472	0.021	22.942	0.000*	0.431	0.511

* $p \leq 0.01$

Table 14 presents student teachers' self-reported perceptions of the effect of STS mentorship on their professional development. The findings indicate that student teachers perceived STS mentorship as having a strong influence on their STS competence and STS skills development, suggesting that interactions with mentors contributed to their confidence and ability to apply what they had learned in real classroom settings.

Additionally, student teachers reported that STS mentorship enhanced their content knowledge, pedagogical content knowledge, and pedagogical knowledge, reflecting their belief that mentorship helped deepen their understanding of subject matter and effective teaching strategies.

Table 14. Perceived Effect of STS_mentorship on student's professional development

Relationships	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	CI 2.5%	97.5%
STS_Mentorship -> Content Knowledge	0.419	0.419	0.021	19.584	0.000	0.377	0.459
STS_Mentorship -> Pedagogical Content Knowledge	0.402	0.402	0.023	17.778	0.000	0.357	0.445
STS_Mentorship -> Pedagogical Knowledge	0.432	0.432	0.022	19.826	0.000	0.389	0.474
STS_Mentorship -> STS_Competence	0.606	0.606	0.018	33.913	0.000	0.571	0.640
STS_Mentorship -> STS_Skills Development	0.494	0.494	0.021	23.744	0.000	0.453	0.534

* $p \leq 0.01$

Table 15 presents student teachers' self-reported perceptions of the effect of the STS practicum on their understanding of the National Teaching Standards (NTS), adherence to the NTS, and engagement in STS mentorship.

Student teachers reported that the STS practicum had the strongest influence on STS mentorship, indicating that their participation in the practicum was closely linked to their engagement with mentors. They also reported that the practicum contributed to their understanding of the NTS, suggesting that practical teaching experiences helped them become more familiar with the expectations outlined in the standards.

However, the reported effect of the STS practicum on adherence to the NTS was relatively lower. This suggests that while student teachers felt they had gained a better understanding of the NTS through the practicum, it may not have fully translated into consistent adherence to the standards in their teaching practices.

These self-reported findings highlight the perceived value of the STS practicum in supporting mentorship and increasing familiarity with the NTS. Lesson observations and further analysis will provide insights into whether these reported improvements are reflected in actual classroom practices.

Table 15. Perceived Effects of STS on NTS understanding, adherence and mentorship

Relationships	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	CI 2.5% 97.5%	
STS_Practicum -> NTS_Adherence	0.051	0.052	0.017	2.945	0.003**	0.017	0.086
STS_Practicum -> NTS_Understanding	0.287	0.288	0.028	10.224	0.000*	0.233	0.342
STS_Practicum -> STS_Mentorship	0.720	0.721	0.014	50.163	0.000*	0.692	0.748

* $p \leq 0.01$; ** $p \leq 0.05$

Table 16 presents student teachers' self-reported perceptions of the effect of STS mentorship on their understanding and adherence to the NTS.

Student teachers reported that STS mentorship supported their understanding of the NTS, suggesting that interactions with mentors helped them better grasp the expectations outlined in the standards. They also indicated that STS mentorship influenced their adherence to the NTS, implying that mentorship may have played a role in shaping their teaching practices in line with the standards.

While these findings highlight the perceived importance of mentorship in strengthening awareness and application of the NTS, lesson observations will provide further insights into whether these self-reported improvements translate into actual classroom practice.

Table 16. Perceived Effects of STS mentorship on NTS understanding and adherence

Relationships	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	CI 2.5%	97.5%
STS_Mentorship -> NTS_Adherence	0.179	0.179	0.020	8.963	0.000	0.140	0.218
STS_Mentorship -> NTS_Understanding	0.227	0.226	0.031	7.369	0.000	0.164	0.287

* $p \leq 0.01$

3.2.12 Perceived Determinants of Impactful STS

Table 17 presents student teachers' self-reported perceptions of the key determinants of an impactful STS experience. The findings suggest that multiple factors contribute to how student teachers perceive the effectiveness of their participation in the STS.

NTS adherence had the strongest reported influence on STS impact, suggesting that student teachers who believed they were aligning their teaching practices with the NTS viewed the STS experience as more beneficial. This highlights the perceived importance of understanding and applying the standards in shaping a meaningful practicum experience.

Student teachers also reported that STS skills development and pedagogical knowledge played a role in shaping the impact of the STS experience. This suggests that those who felt they had improved their teaching strategies and classroom skills during the practicum found it to be more valuable.

Additionally, STS competence and content knowledge were perceived as contributing to the impact of the practicum, indicating that student teachers who felt confident in their subject matter and overall teaching ability reported a more meaningful experience.

While these findings highlight the perceived factors that contribute to an impactful STS experience, further observations will provide insights into whether these self-reported perceptions align with actual teaching practices.

Table 17. Perceived determinants of impactful STS

Relationships	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	CI 2.5%	97.5%
Content Knowledge - > STS_Impact	0.146	0.147	0.034	4.306	0.000*	0.081	0.214
Pedagogical Content Knowledge -> STS_Impact	0.121	0.121	0.038	3.155	0.002**	0.046	0.197
Pedagogical Knowledge -> STS_Impact	0.232	0.232	0.042	5.554	0.000*	0.150	0.315
STS_Competence -> STS_Impact	0.153	0.152	0.025	5.985	0.000*	0.102	0.203
STS_Skills Development -> STS_Impact	0.181	0.181	0.033	5.476	0.000*	0.116	0.246
NTS_Adherence -> STS_Impact	0.685	0.684	0.028	24.228	0.000*	0.628	0.738
NTS_Understanding - > STS_Impact	0.104	0.105	0.029	3.551	0.000*	0.048	0.163

* $p \leq 0.01$; ** $p \leq 0.05$

Table 18 presents student teachers' self-reported perceptions of the effect of an impactful STS experience on their motivation toward professional teaching and their readiness to teach. The findings suggest that student teachers who viewed the STS experience as impactful were more likely to report higher motivation and a stronger sense of preparedness for teaching.

Student teachers reported that an impactful STS experience had the strongest effect on their motivation toward professional teaching, suggesting that those who found value in the practicum were more likely to express commitment to the teaching profession. Additionally, they reported that STS impact influenced their professional readiness to teach, indicating that those who perceived the practicum as beneficial also felt more prepared for the realities of classroom teaching.

The findings also indicate that motivation toward professional teaching was linked to professional readiness to teach, suggesting that student teachers who were more motivated were also more likely to report feeling ready to enter the teaching profession.

While these self-reported findings highlight the perceived role of an impactful STS experience in shaping motivation and readiness to teach, further analysis will be needed to assess whether these reported perceptions translate into effective teaching practices.

19: Perceived Effect of impactful STS

Variables	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values	CI 2.5%	CI 97.5%
STS_Impact -> Motivation Towards Professional Teaching	0.596	0.596	0.018	32.672	0.000*	0.560	0.632
STS_Impact -> Professional Readiness to Teach	0.475	0.475	0.024	19.946	0.000*	0.428	0.522
Motivation Towards Professional Teaching -> Professional Readiness to Teach	0.345	0.345	0.023	15.293	0.000*	0.301	0.389

* $p \leq 0.01$

3.3 Qualitative Results

Stakeholders—including CoE principals, STS coordinators, mentors, and early grade tutors—shared their perspectives on the STS, focusing on its importance, effectiveness, and unique features.

3.3 Perceptions of Stakeholders about the STS

The theme focuses on the perceptions of stakeholders about the benefits of and uniqueness of the STS. A summary of the STS's benefits and its distinctiveness from previous teaching practice models is presented in Figure 13.

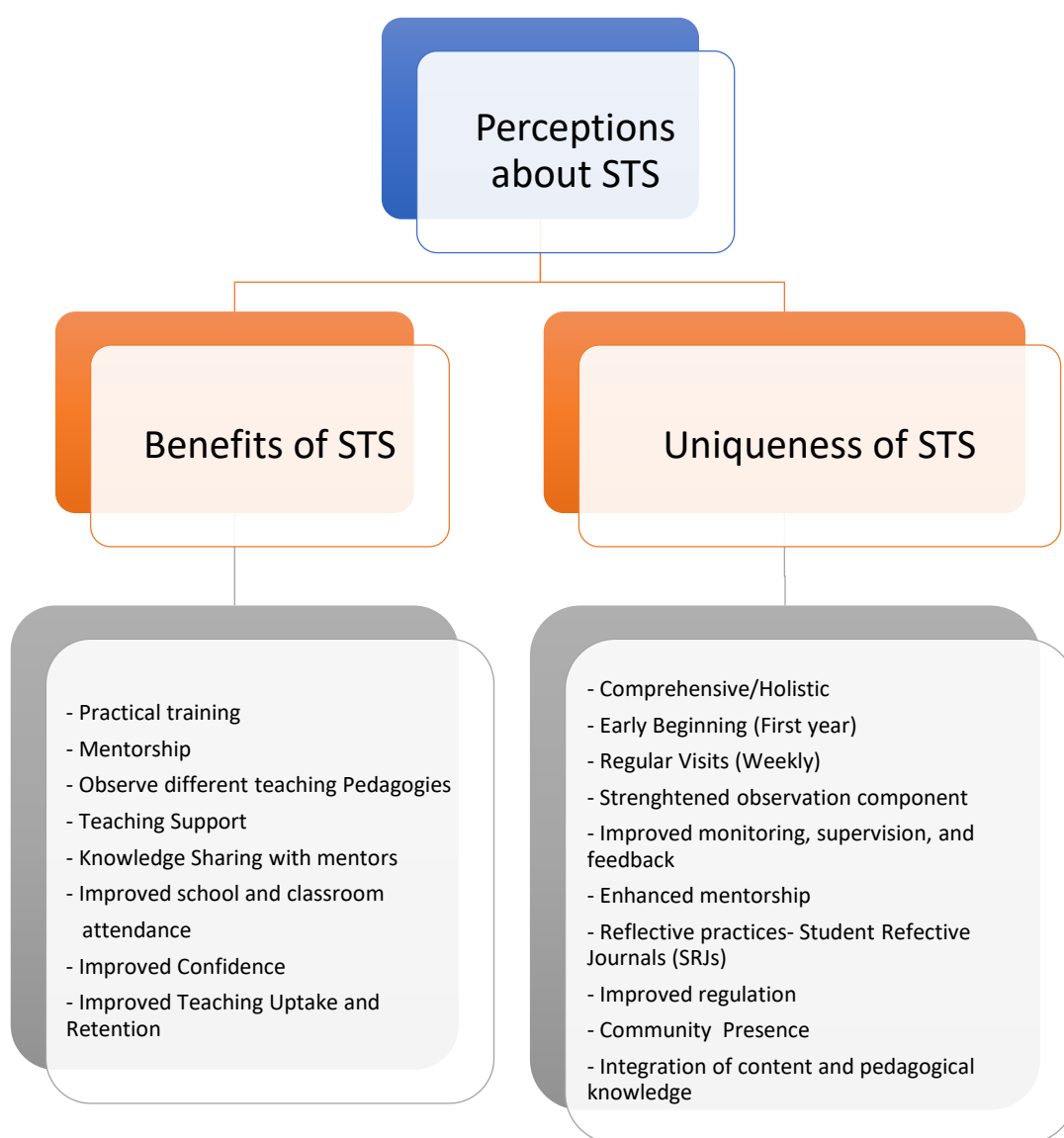


Figure 13. Perceptions about STS

Stakeholders generally affirmed the STS as a valuable policy that effectively prepares student teachers for the teaching profession. They highlight its hands-on approach, which allows

student teachers to gain practical experience, receive mentorship, and observe diverse teaching pedagogies. Additionally, while not its primary objective, the STS has been reported to provide crucial teaching support in practising schools during strikes and emergencies. Many participants further indicated that the STS experience boosts the confidence of student teachers and helps them assess their interests and capabilities in teaching. Given these benefits, most participants believe the programme's goals are being met and advocate for its continued support. The following extracts capture some participants' opinions on the benefits of the STS

I would like to mention that the Ministry of Education, GTEC, GES and then PRINCOF should know that STS is a very good component of our training of the students, and for that matter, they should continue to support this programme.

[STS Coordinator, Greater Accra Region]

.... when the teacher in the class is indisposed, they go and take over the class and help the children to learn. So, they are even helping the community and the children who are in the village areas that they are practising [STS Coordinator, Bono East Region]

STS has come to let student teachers have a hands-on practical activity in their schools. Because as they are learning theoretical aspects, they have the chance to go to the class and see for themselves what goes on. They understand how lessons are prepared, the step-by-step approach with which teachers teach, how they manage their classes, and how marking and meetings are conducted in their schools.

So, STS has come to prepare the students well. [STS Coordinator, Ashanti Region].

From participants' narratives, the STS stands out from the previous off-campus approach by providing structured, hands-on teaching experience throughout all four years rather than concentrating on the final year. Key features of the STS include early exposure, regular school visits, enhanced supervision and mentorship, strengthened observation, and an emphasis on reflective practice. Unlike the older model, STS offers incremental classroom engagement from Level 100 to Level 400, fostering professional identity, confidence, and deeper teaching competencies. It also incorporates continuous monitoring and feedback, ensuring alignment between theory and practice. Additionally, STS strengthens community engagement by immersing student teachers in local contexts, enhancing their understanding of students' backgrounds and cultural dynamics. This structured, scaffolded approach makes STS a more comprehensive and effective teacher preparation model than the traditional off-campus system. These views are reflected in the following quotes:

This one, you have right from level 100 to level 400, there are STS activities every semester for the students to actually engage in. Unlike the previous one, where they only have one time, they will have to go out in the final year.

[STS Coordinator, Northern Region].

The uniqueness to talk of is the supervision by mentors, lead mentors, supervisors, and students SRJ [students reflective journals]. ... Depending on the level of the students, when they go out, they observe, write reports, and bring them back to class to assess the challenges they have observed outside and discuss them with them.

[Numeracy Tutor, Upper West Region]

The students also know community relationships because they are going out. During our time, for instance, you can't go out to visit those schools around by when you get to Level 100, we have a school to visit, level 200 and 300 too, the same [STS Coordinator, Ashanti Region].

3.4 Colleges of Education Preparatory Activities Before STS

The second theme focuses on preparatory activities undertaken by the COEs for the STS (see Figure 14).

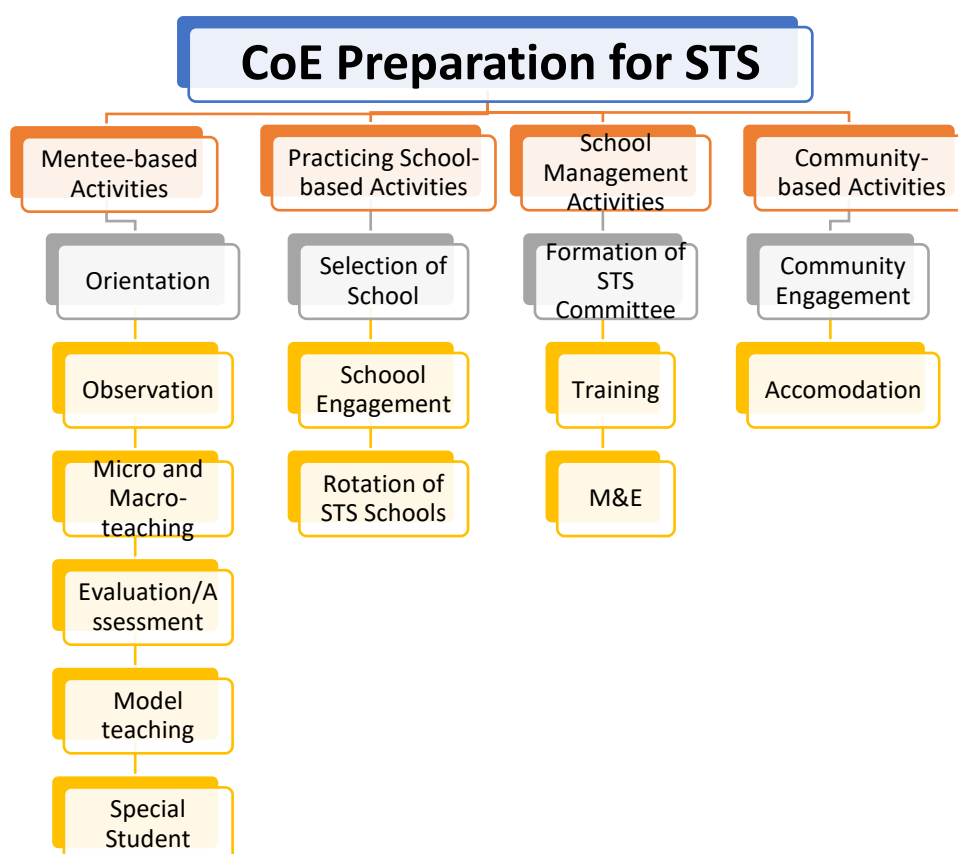


Figure 14. Thematic Framework showing Preparatory Activities Undertaken by the CoEs towards the STS.

The preparatory activities were categorized into four main areas: mentee-based activities, practising school-based activities, management-based activities, and community-based activities. Mentee-based activities include orientation, observation, micro and macro-teaching, evaluation/assessment, model teaching, and teaching special students. Practising school-based activities covers school selection, engagement, and rotation for student teachers. Management-

based activities involve forming STS committees, training stakeholders, and conducting monitoring and evaluation. Community-based activities focus on community engagement and accommodation arrangements.

The participants' narratives show that colleges invest significant effort in preparing student teachers before their STS placements, with structured semesterly orientations ensuring they are familiarized with school environments, mentor expectations, National Teaching Standards (NTS), and the use of Student Reflective Journals (SRJ). These sessions also cover ethical conduct, class management, and community engagement to enhance real-world exposure from Level 100 onward.

The narratives further indicate that colleges provide capacity-building workshops for tutors and mentors, often partnering with NGOs like T-TEL or external trainers when resources permit. These capacity-building activities ensure the mentors provide effective guidance, supervision, and support to student teachers, ensuring a more structured and impactful teaching practice experience, as reflected in the quote below:

“And the mentors too are trained so we know how to plan together with the students, work together with the students and reflect together with the students” [Principal, Western North]

Another important preparatory activity is the selection of partner schools for the STS. From the narratives, partner schools are carefully selected based on infrastructure, commitment, and alignment with STS principles. Many colleges formalize these partnerships through MOUs, ensuring that schools provide structured mentorship and a conducive environment for practical training. Continuous evaluation of partner schools' facilities and staffing ensures that student teachers receive meaningful, well-supported field experiences.

Well, we have signed a memorandum of the municipal education directorate, okay, and we have criteria to select a school. We visit the school, we look at structures, we look at the number of qualified teachers, we take the number of experiences you have in the classroom, so when we get the data, then we analyse, then we do the allocation. Then we look at the commitment of teachers, so there could be trained teachers, but if the teachers are not serious about the STS activities, next time we will not, because when the students come and report, they write reports on their return, and when their reports suggest that, or when we visit them when the lead mentor is not there in the school, and then you go, you will not meet the person. [Principal, Western North]

3.5 Teaching and Learning Resources for the STS

The third theme focuses on the availability and adequacy of human and material resources in both the COEs and the practising schools. The participants acknowledged the availability of qualified human resources to support the STS. However, concerns were raised about

inadequate staffing, particularly in terms of monitoring and supervision. The high number of student teachers in CoEs makes it difficult to provide individualized supervision, mentorship, and feedback, limiting the overall effectiveness of STS implementation. Commenting on this issue, a principal said:

I think we have a team of well-qualified tutors in terms of human resources, even though the number is not adequate. So you see that the student-teacher ratio is quite high compared to the G-TEC norms, right? [Principal, Western North Region]

Regarding material resources, participants reported the availability of essential teaching aids such as projectors, laptops, abacuses, bottle tops, cardboard, Cuisenaire rods, and teaching manuals. While these resources exist, they are often inadequate to meet the demands of all student teachers, thereby affecting lesson delivery and pedagogical practice. Some CoEs and partner schools struggle with insufficient classrooms, textbooks, and other instructional aids, which further constrains the quality of teaching practice, as expressed in the quote below:

The major challenge is access to materials. Because of the unavailability of the real objects, we normally project them, download them from online. Getting the materials is sometimes difficult. [Numeracy Tutor, Western North Region]

Many participants mentioned that the lack of adequate TLRs limits student teachers' ability to demonstrate and practice effective instructional strategies, particularly in resource-poor environments. Some Colleges of Education attempt to mitigate this by encouraging student teachers to develop low-cost or improvised materials, fostering creativity and adaptability. Given the scarcity of teaching materials, student teachers are frequently required to create their own TLRs to support their instructional activities. This practice helps to address resource shortages in CoEs and partner schools and equip student teachers with hands-on skills in TLR development, particularly for foundational literacy and numeracy instruction.

However, concerns were raised about the quality of student-developed TLRs. Some student teachers lack the necessary skills to design effective instructional materials and often rely on artisans, such as carpenters, for assistance. To address this, some CoEs assign TLR development as a group activity, where the best designs are selected and used in the classroom. While this strategy helps improve quality, it also highlights the need for more structured training in instructional material design and resource improvisation within the STS curriculum.

Hmmm, I must say that ... sometimes, when they are doing micro-teaching, they prepare TLRs, but some of them are not always up to the standard...for instance, they are dealing with children, and then the colour contrast is so black, so blurry and small.... I was thinking that there should be a particular programme for that basically where somebody who is well trained in the preparation of TLMs will take them through, but to say that they are well equipped in terms of its

preparation, I cannot say and so; they do but just to represent something.
[Literacy Tutor, Bono East Region]

3.6 National Teaching Standards

The results were presented under three sub-themes, which were: Perspectives about the NTS, Knowledge about the NTS, and Adherence to the NTS (see Figure 15).



Participants in the study unanimously recognised the NTS as a crucial framework guiding teaching practice. Many described the NTS as a professional benchmark that shapes student teachers' professional identity and informs their instructional decisions. They emphasised the importance of instilling knowledge and practical application of the NTS among student teachers to ensure alignment with professional teaching expectations. However, some participants noted variations in adherence, suggesting that while the NTS is a formal reference, more deliberate efforts are needed to integrate it into daily teaching practices effectively.

The NTS is good just that we must incorporate it in teaching so that the students will be aware of the standards. We did some research, and we realized that not all of them use it; you see, sometimes when they hear that you are coming, you see them using it in their teaching. But I think that it is supposed to be part of the teaching. [Principal, Volta Region].

One of the key concerns raised was the limited knowledge of the NTS among student teachers. Many mentees appeared unfamiliar with its core principles, making it difficult for them to apply the standards consistently. Interestingly, even among the participants themselves, discussions about their knowledge of the NTS tended to focus on its three main domains—Professional

Knowledge, Professional Values and Attitudes, and Professional Practice—without a deeper engagement with the content. Several participants admitted that they struggled to recall the specifics of the NTS, often remarking, “*I should have brought a copy.*” In explaining their knowledge about the NTS, these were what participants said.

...The National Teacher Standards have three pillars. Those things are always not in my mind. These three pillars are practical knowledge. I forgot to even bring that book here [Numeracy Tutor, Volta].

That's why I'm saying that the implementation has not been done well because some of the tutors who are to incorporate this are not aware of what it is. Because when I came in, there were workshops. There were workshops to create awareness and to give some tutors orientation. Now, following that, some new tutors have been appointed. [Principal, Oti Region]

To encourage student teachers to engage with the NTS, participants identified several strategies used in their institutions. One common approach was the deliberate integration of the NTS into instructional materials and the curriculum. Lesson planning, course content, and evaluation criteria were aligned with the NTS to ensure that mentees consistently engaged with its indicators. Some tutors required student teachers to reference specific NTS indicators whenever they designed lesson plans or instructional materials, reinforcing their familiarity with the framework.

Our curriculum is based on the national teaching standards (NTS), and so whatever you are going to teach, we refer to the NTS.

When we are teaching them, we make them know that what they are going to teach...should be in line with the national teaching standards (NTS). Literacy Tutor, Bono East].

Ensuring easy access to the NTS was another priority. Some COEs provided both hard and soft copies of the standards to mentors, tutors, and student teachers, allowing for frequent reference and application. Additionally, teaching demonstrations played a critical role in reinforcing the NTS. Tutors and mentors modelled best teaching practices aligned with the standards, giving student teachers practical examples of how to implement them in their classrooms. Micro-teaching sessions also served as platforms for reinforcing NTS-aligned instructional techniques.

Our teaching, assessments, and everything is based on the National Teacher's Standard. As part of our training, we give them soft

copy and hard copies of the National Teacher's Standard...So even when you are starting a lesson, you see the learning outcome is NTS 1A. When we say NTS 1A, they should read to know what is there. By NTS 1A, I mean NTS, professional attitude and what? When we say NTS 3C, they know it's NTS professional practice. [STS Coordinator, Western North Region].

To enforce adherence to the NTS, some institutions embedded it into inspections, micro-teaching assessments, and licensure exams, ensuring that student teachers recognized its importance in their professional development. Others emphasised disciplinary approaches, requiring student teachers to demonstrate professionalism in their dressing, language use, and overall conduct in line with the NTS

. In their expressions, they noted:

They are adhering to it [NTS] in the sense that they are aware the NTS is featured in their licensure exams. So, it's an opportunity for them to practice. If the knowledge that they acquire is woefully inadequate, they are going to fail the exams. And when you fail, you cannot get the opportunity to teach in Ghana. So, they are taking it seriously because we make them aware that it is what we are teaching them that they are going to set questions to cover. [STS Coordinator, Bono East Region].

After taking them through, we make sure that they have access to the National Teacher Standards. When our lecturers go for supervision, they make sure that they inspect the lead mentors to see whether they have it.

And whether the mentors are teaching in line with the National Teacher Standards. [Principal, western Region].

3.7 Motivation and Readiness of Mentees to Uptake Teaching as a Profession

This theme focuses on the perceived impact of the STS on student teachers' motivation and readiness to pursue teaching as a profession. The narratives indicate that while many student teachers express enthusiasm and preparedness to enter the profession, their motivation was influenced by a combination of intrinsic and extrinsic factors. The STS provides an experiential learning platform that builds confidence, allows student teachers to practice and rehearse teaching, and helps them assess their suitability for the profession before completing their training. These narratives under this theme are categorized under three sub-themes: general motivation and readiness to teach, motivation specifically for foundational literacy and numeracy (FLN), and the lack of research evidence on long-term motivation for teaching. Across these sub-themes, both internal (intrinsic) and external (extrinsic) motivational factors were found to shape student teachers' commitment to the profession. Each of these themes was categorised into intrinsic and extrinsic motivation, as shown in Figure 16.

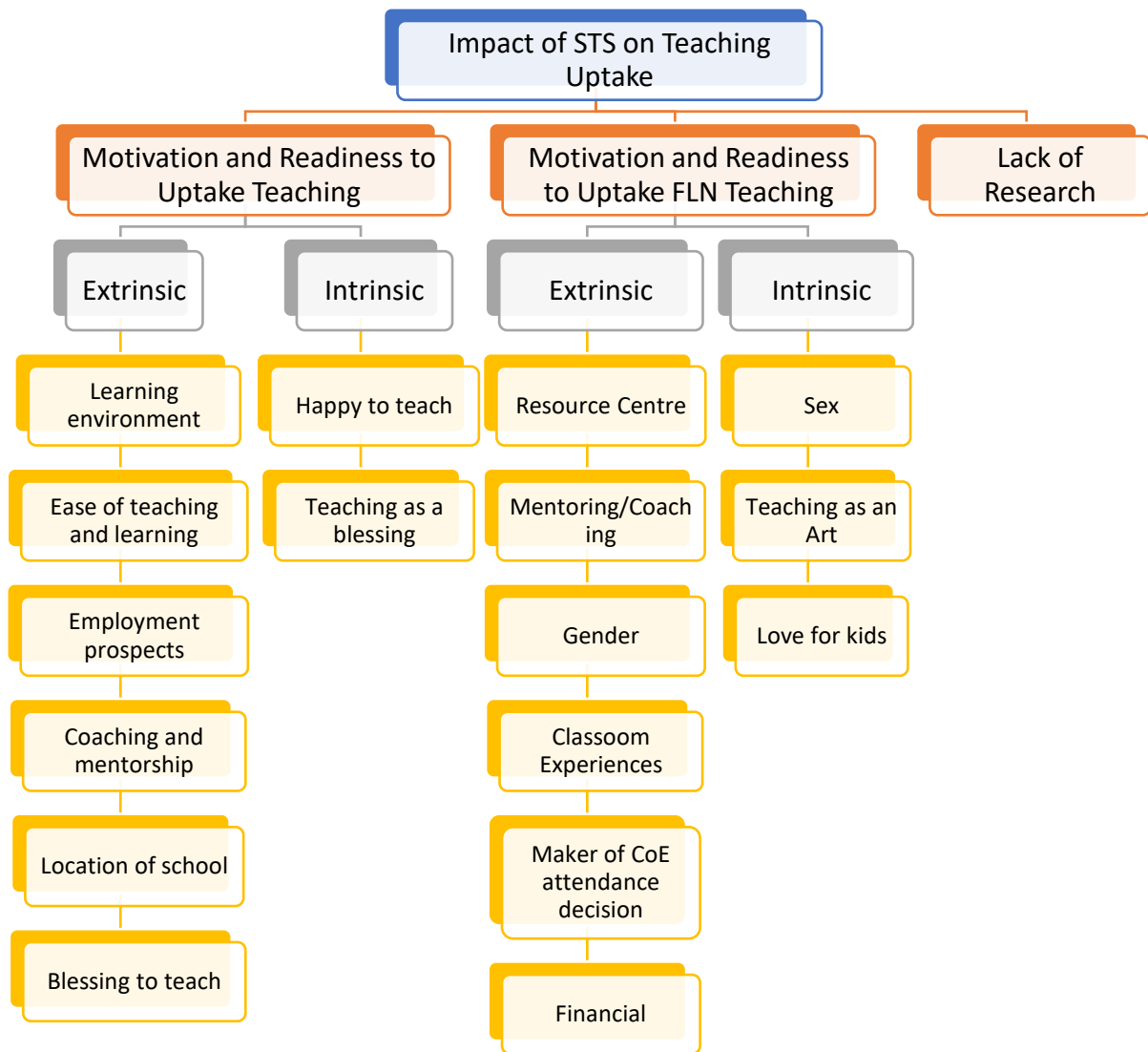


Figure 16. Impact of STS on Student Teachers' Motivation and Readiness to Uptake Teaching as a Profession.

The STS was found to enhance student teachers' motivation, passion, and interest in teaching, particularly through real-world classroom experiences. Many participants noted that even those who initially lacked interest in teaching became more engaged after participating in the programme. Through micro- and macro-teaching opportunities, student teachers gain confidence, develop competencies, and form aspirations based on their mentors' influence. A key external factor influencing motivation was job security. Many student teachers are drawn to teaching because of assured employment, government postings, and monthly allowances. Unlike other tertiary graduates who must apply for jobs, teaching offers a more structured pathway to employment. The following quotes reflect these perspectives:

...they are motivated to teach. Even those who do not have an interest in teaching are now gaining interest.

Their confidence and competencies are developed through the STS, both micro and macro teaching. As we are talking now, some of our students are

with our partner schools to teach, although we haven't asked them to go. And they praise their mentors as well. Oh, that's my mentor there. I want to be like him. [STS Coordinator, Greater Accra Region]

I know a number of students here who got admission into the nursing training but chose to be here. Some even transferred from traditional universities just to be here because there are jobs here right after school than in other tertiaries. They sometimes tell us that here, when you complete getting a job is easier. You get to be posted after school, unlike the university, where one must apply and get clearance before they are posted. So, the students that we have here, their motivation for teaching is very high. [Principal, Upper West Region].

Participants also highlighted the location and characteristics of practising schools as significant influences on student teachers' motivation to take up teaching as a profession. Schools with better resources and supportive environments motivated student teachers, whereas those with fewer resources or challenging conditions sometimes deterred them. Additionally, learner characteristics played a role; working with highly engaged and receptive pupils reinforced student teachers' commitment to teaching. Interestingly, the study found that some student teachers who initially had no interest in teaching developed a passion for the profession through STS. Exposure to classroom interactions, real-life teaching experiences, and mentor influence transformed their perspectives, as seen in the quote below:

With the STS, they go out every week, and once they go out, they interact with these students, and it boosts their morals in engaging the students, so when we send them out, they become happy because they are going to meet the kids. [Literacy Tutor, Bono Region]

external incentives, many participants indicated that student teachers exhibited a deep passion for teaching, regarding a calling and a privilege to educate others. From the participants' narratives, this intrinsic motivation was particularly evident in student teachers who had actively chosen to attend a COE rather than being influenced by family recommendations.

It depends on a lot of factors; some people came here on their own, they sought admission on their own, so you could see that they are more serious as compared to those who were forced to come here and become teachers, we can see. Despite this, when they come, they develop interest, and they do well.

The narratives also indicated that the motivation of student teachers to uptake teaching as a career was hinged on the joy of working with children, particularly at the foundational level. To some participants, female student teachers, in particular, were drawn to early-grade teaching as they found fulfilment in nurturing young learners. The perception that teaching young children is both rewarding and enjoyable contributed to high levels of motivation among those

specializing in foundational literacy and numeracy. In reporting this issue, this was what a Principal in Upper West Region had to say:

when you do a study or take statistics of male and females in the early grade, you begin to draw conclusion that it is the females who always go for that programme, the early grade because they like children. They love teaching them because of the kids, they enjoy teaching them... the motivation is very high for those who select it... for the foundational numeracy and literacy, even playing with the kids (the learners) is a form of teaching them and it's fun to be with the kids so the motivation is very high. Some actually come here for early grade because that is what they want.

For those specializing in FLN, motivation was shaped by both intrinsic passion and external support systems. The availability of resource centres, teaching materials, and mentor guidance played a crucial role in enhancing their enthusiasm for teaching foundational subjects. Participants noted that well-equipped resource centres enabled student teachers to engage with instructional materials they had never encountered before, boosting their confidence in handling literacy and numeracy lessons, as reflected in the following narratives:

We are lucky because with the assistance of T-TEL and the partnership we have a resource centre there. The resource centre is doing marvellous work for our people because some of our students throughout their learning process they haven't come across the TLMs that we are having here because some of them where they are coming from the olden days that they do things raw but because of child-centred and other things, the learners are now interested with our resource centre and then the early grade...Now, their morale is high with the backing of our lab; the early grade lab. Things that they themselves cannot do is there so they can borrow it go and use it bring it back making them feel at home.
[Numeracy Tutor, Ashanti Region].

Once they interact with the teachers in the field, professionals on the field they have as in the colleges which they can fall on to ask questions and those things, whatever they need, talking of TLM to teach, ask questions and they are given the answers as how they prepare their lessons...makes it easy for learners to understand. You know when you are applying practical activity, naturally you become motivated, so that one will have an impact on their motivation to teach at the foundational level. [Numeracy Tutor, Upper West Region]

Another important motivating factor was the desire of student teachers to demystify misconceptions about mathematics. The participants mentioned that some student teachers initially perceived mathematics as difficult or as a subject predominantly for males. However, through practical engagement, simplified explanations, and real-world applications, they overcame these misconceptions and became more confident in their ability to teach

mathematics effectively. Gender-related beliefs about mathematics were also addressed through mentorship and exposure to successful female mathematics educators. Additionally, student teachers who had positive mentor experiences expressed stronger motivation to teach. Observing experienced educators use engaging teaching strategies and effectively manage classrooms inspired them to replicate these practices in their own teaching. These perspectives are reflected in the quotes below:

You want the student to understand that mathematics is not difficult. It's a matter of telling them that...instead of them to read a lot other things, in mathematics, we just use few numbers. You just use few numbers to learn, something few to learn. And this one, when you are reading somebody's literature, somebody's story, you waste a lot of time. So, mathematics is not as difficult as we are, we are, we are saying. When you are in the KG, you started two plus a box, two plus a box. But when you grow out, instead of counting the box you change the box to a variable. So, a variable is the same as that box [Numeracy Tutor, Central Region]

The motivation is there. Because of what they see the mentors doing, they wish they had the opportunity to do theirs as well and sometimes madam I will come to your school and see how you do it. So, the motivation is there. Teaching is an art, and they want to be in that art. They teach students and the students understand, and they are happy about that. That is one way. They are braced because they have picked strategies from their tutors. They have gone outside to see their mentors using interesting strategies...and that alone is quite motivational for one to want to teach. [Literacy Tutor, Northern Region]

Despite the clear indications of increased motivation through STS, some participants expressed concerns about the lack of research on whether this motivation is sustained after graduation. While COEs aim to produce highly motivated and ready teachers, there is no systematic tracking mechanism to determine whether student teachers remain committed to the profession in the long term. Some participants suggested that motivation could wane over time due to factors such as workplace conditions, salary concerns, and administrative challenges. Others emphasised that while STS fosters initial enthusiasm, the real test of retention occurs after student teachers transition into full-time teaching roles.

3.8 Challenges of the Supported Teaching in Schools Programme in Ghana

The study identified multiple challenges affecting the implementation of the STS. These have been categorised into four main areas: institutional challenges, human-oriented challenges, systemic challenges, and foundational literacy and numeracy (FLN) challenges. These challenges collectively hinder the effectiveness of the STS by limiting resources, supervision, infrastructure, and motivation among stakeholders.

3.8.1 Institutional Challenges

One of the most significant institutional challenges was transportation constraints, including the lack of buses, broken-down vehicles, and limited funds for fuel and maintenance. Many COEs struggle to transport student teachers to their practising schools, leading to delayed or cancelled visits, reduced supervision, and an overconcentration of mentees in nearby schools. In some cases, colleges are forced to rent private buses at high costs, further straining limited financial resources. The lack of adequate funds also affects workshops, incentives for mentors and supervisors, and the procurement of teaching and learning materials (TLMs), making it difficult to support the STS effectively. The following quotes reflect some of these challenges:

...It's an old bus, the bus, the transport is a problem. It's a problem. We are supposed to go for six weeks but there was a time that we did only three weeks due to the broken-down bus [STS Coordinator, Greater Accra Region]

The mentors themselves are complaining, 'momma ye ye adwuma hunu, momma yen hwee' [you make us work without paying us anything] and the lead mentors will also complain, 'STS fo mo na mos3e yen papers, ena mo ye sei, mo ye sei' [You STS people, you waste our stationery and do so many things to consume our resources]. [STS Coordinator, Central Region].

Additionally, limited infrastructure in both CoEs and practising schools was highlighted as a major barrier. The shortage of classrooms, learning materials, and accommodation for student teachers, especially in rural areas, creates significant logistical and operational challenges. In remote locations, poor network connectivity and irregular supervision further exacerbate the difficulties in implementing the STS. The following narratives represent views on how the lack of infrastructure in CoES and rural communities constrain effective implementation of the STS:

Apart from the printer too, you know, we also need to make copies, maybe a photocopier to run a large, like if we want to print about 500 copies of papers, we can't use this small printer, you may need to get maybe something photocopier. which we don't have. I wish we could also have a desktop at least which can also be stable so that when the laptop is not there, we can fall on it. I also wish, because the office actually, the work here is evolving.
[STS Coordinator, Upper West Region]

These sub-themes are presented in Figure 17 below.

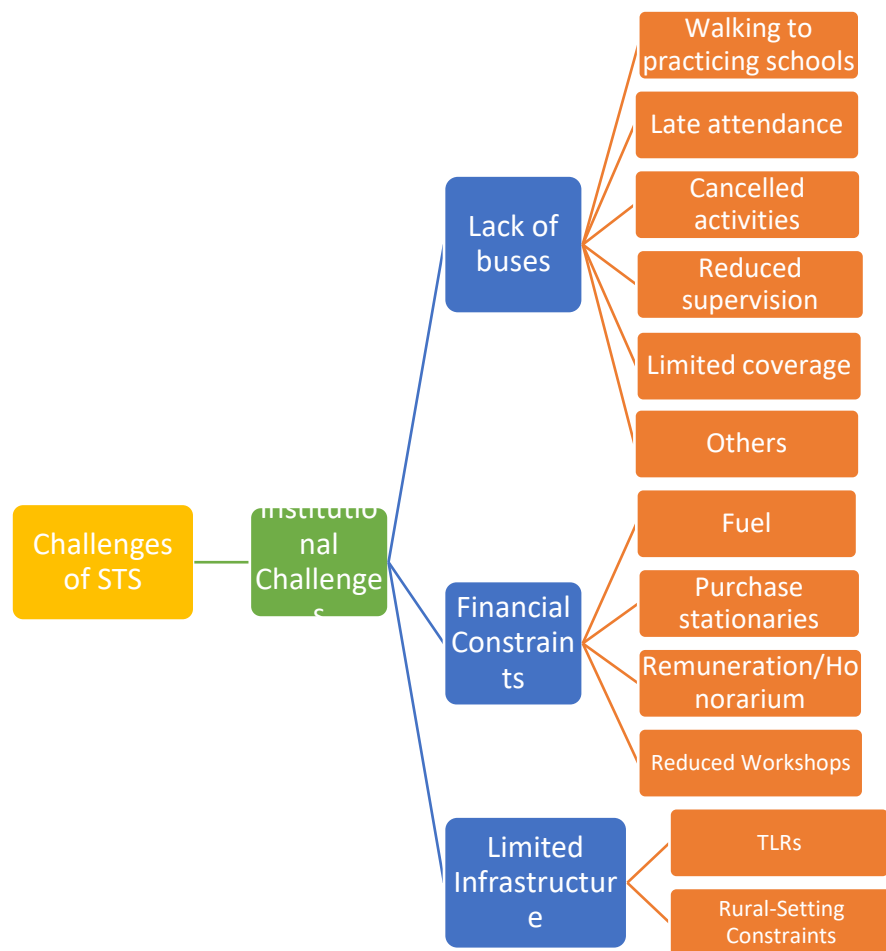


Figure 17. Institutional Challenges of the Supported Teaching in Schools (STS)

3.8.2 Human-Oriented Challenges

The STS also faces a range of human-related challenges, which were categorized into high workload, poor attitudes, inadequate welfare, limited supervision, poor assessment, and reduced contact hours. These issues are presented in Figure 18.

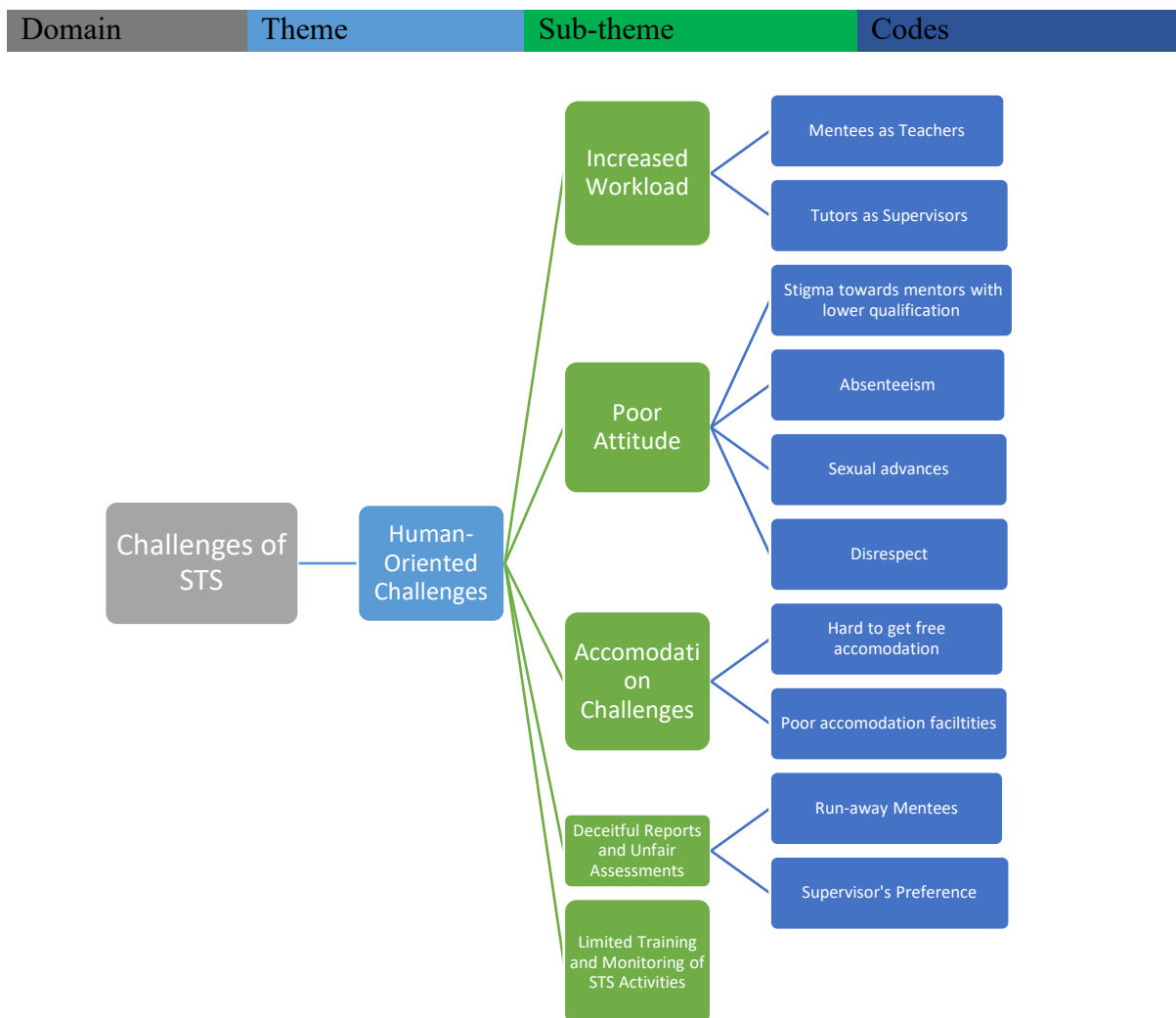


Figure 18. Individual/Human-Oriented Challenges of the Supported Teaching in Schools (STS)

Many participants hinted that student teachers sometimes reported being assigned full teaching responsibilities instead of acting as observers, which limited their ability to learn through mentorship. This often resulted from a shortage of teachers in practising schools or poor work attitudes of mentors. Tutors and supervisors who also struggled with heavy workloads, balancing their teaching duties with additional STS responsibilities, as reflected in the quote below:

The STS has increased the workload of teachers because we are supposed to score all their journals and grade them. And apart from that, when they come with their journals, we need to teach, we need to meet them for them to defend what they have written...So that one has increased our workload.

[STS Coordinator, Bono East Region].

Negative attitudes toward the STS were highlighted as another human-orientation challenge in the STS implementation. The participants' narratives suggest that some student teachers lacked

discipline and commitment, frequently missing STS sessions or engaging in personal activities during placements. Reports of tardiness, mobile phone distractions, and disrespect toward mentors were cited by several participants. Additionally, some mentors exhibited bias against female student teachers or looked down on those with lower qualifications, creating a hostile learning environment. These concerns are expressed in the extracts below:

, today's graduate... [Literacy Tutor, Eastern Region].

There are some schools that basically, the teachers want to use our learners as sex objects. When we get the wing of that, we take all of them away from that place. There is a school that asks for only females, and we said we don't post only females to schools. But we posted some with more females, and he made a comment on their arrival, he made a comment. Oh, I only wanted some of you to come so that some of you could cook for me and wash my things for me. [Literacy Tutor, Oti Region].

Related to negative attitudes, some student teachers were reported to fabricate lesson reports, while others received grades that did not reflect their actual performance. This lack of rigorous assessment and quality control undermined the credibility of the STS, as noted in the quote below:

It's like students have come to realize that it depends on who your supervisor is. Most of them say the assessment is not fair. Who is your supervisor? Do you know that if you are not careful as a supervisor and you don't follow up, someone may not even go to the field but will come and defend and give you some reports? The students are all aware that this person did not go; the person went once or twice, yet results will come, and that person will get A or B+. The one who was regular, and a different supervisor may get B or something. And you know, students, this person may even be teasing. Even those of you who claim you went throughout, and you were struggling. So that has also been a problem. [STS Coordinator, Volta Region]

Lack of accommodation facilities in communities where practising schools are located emerged as a key challenge in the STS implementation. The participants indicated that student teachers, particularly those assigned to rural schools, often struggled with poor living conditions, making it difficult to focus on their teaching practice.

Accommodation

is sometimes a challenge. Hmmm, so you will see somebody teaching here and staying very far way. The STS coordinator will testify that they also have such challenges. And landlords' issues, but those are private matters, and we are more interested in what happens in the classroom, but they do come up [Literacy Tutor, Bono East Region].

Several participants mentioned limited training and supervision as a challenge for the STS implementation. They explained that many mentors and supervisors received little to no training on how to effectively support student teachers. This was often blamed on financial challenges, which constraints prevented CoEs from providing regular monitoring, evaluation, and capacity-building workshops for mentors.

...The college was organizing subject-based workshops for them. It has stopped because they feel that at least they have done what they were supposed to do. But we have appointed new tutors, and there is nothing like a subject-based workshop.

How are we expecting them to know some of the things that they have?

[STS Coordinator, Oti Region].

3.8.3 Systemic Challenges

Several broader systemic issues also impacted the effectiveness of the STS. These issues are summarised in Figure 19.

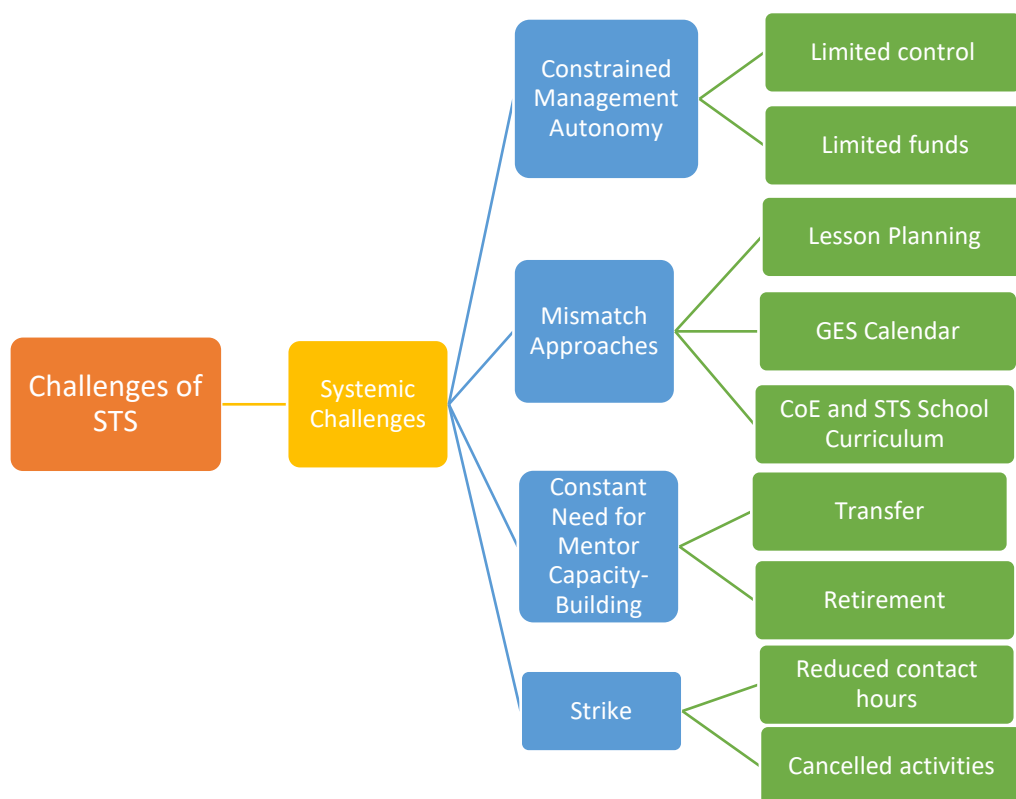


Figure 19. Systemic Challenges of the Supported Teaching in Schools (STS)

One of the critical system challenges highlighted by the participants was constrained management autonomy, where CoEs were heavily dependent on government funding and mentoring institutions. This limited their ability to independently allocate resources and make internal decisions regarding STS activities. In explaining these issues, this is what was said:

The government controls Colleges. Sometimes, Colleges are not seen as full tertiary institutions. For instance, there are some IGFs [internally generated funds] that the Universities are using Colleges to generate for themselves. They say they run weekend courses here. We should have been organizing those ones so that the IGF would come to us to solve some of our problems. At least, if we generate enough IGFs, we can build infrastructure to support the STS. So, when it comes to infrastructure, the government will have to help the Colleges. [Principal, Northern Region]

Another major challenge was the misalignment between the academic calendars of CoEs and practising schools. This often resulted in STS placements coinciding with school vacations or examination periods, disrupting student teachers' practical experience. Additionally, content disparities between the B.Ed. curriculum and that of the basic schools made it difficult for student teachers to apply their theoretical knowledge effectively. In explaining the issue of unaligned curriculum, this was what some participants had to say:

Sometimes, what we teach them here, they go out there, and there's no link between what we teach them and what they learn out there. For content fine, but the lesson preparation and everything that's always a challenge. Theirs is so scanty, so the students sometimes prefer that, but when we are going to supervise, they know that we will not take it. But afterwards, what happened? We see these things. It's a serious challenge. And we are told the same resource person trained them. The same resource person designed this. And we are handling. So why the difference? That's the question I always ask. So, it's a serious challenge there. [Literacy Tutor, Bono East Region].

Participants also expressed concerns about the constant need for mentor training due to high turnover rates caused by teacher transfers and retirements. This continuous need for retraining placed additional financial and logistical burdens on the STS. Furthermore, frequent strike actions by labour unions within the CoEs disrupted the implementation of STS, reducing contact hours and mentorship opportunities. These concerns are expressed in the following extracts:

Training for the mentors has been a challenge because teachers you have trained this year, next year you go to the school some have been transferred, some have retired, so it looks as if every year you have to conduct a training for them, financial issues to train all the mentors is also challenging. [STS Coordinator, Bono Region]

This particular year and this semester, because of our strike, we were not able to even do much of the peer teaching so that we could really score them. They did one or two. And then, because we were on strike, everything was on strike. So, they themselves, we gave them the opportunity, and some went home. Meanwhile, this is the stage in which they are supposed to do

their micro-teaching. This is not the first time it has happened that way.
[Vice Principal Greater Accra Region].

3.8.4 Challenges in Foundational Literacy and Numeracy (FLN)

In addition to the general challenges facing the STS, specific difficulties were noted in the teaching of FLN. These challenges include math phobia, inadequate staffing, language barriers, limited teaching resources, and social stigma attached to early-grade teaching (see Figure 20).

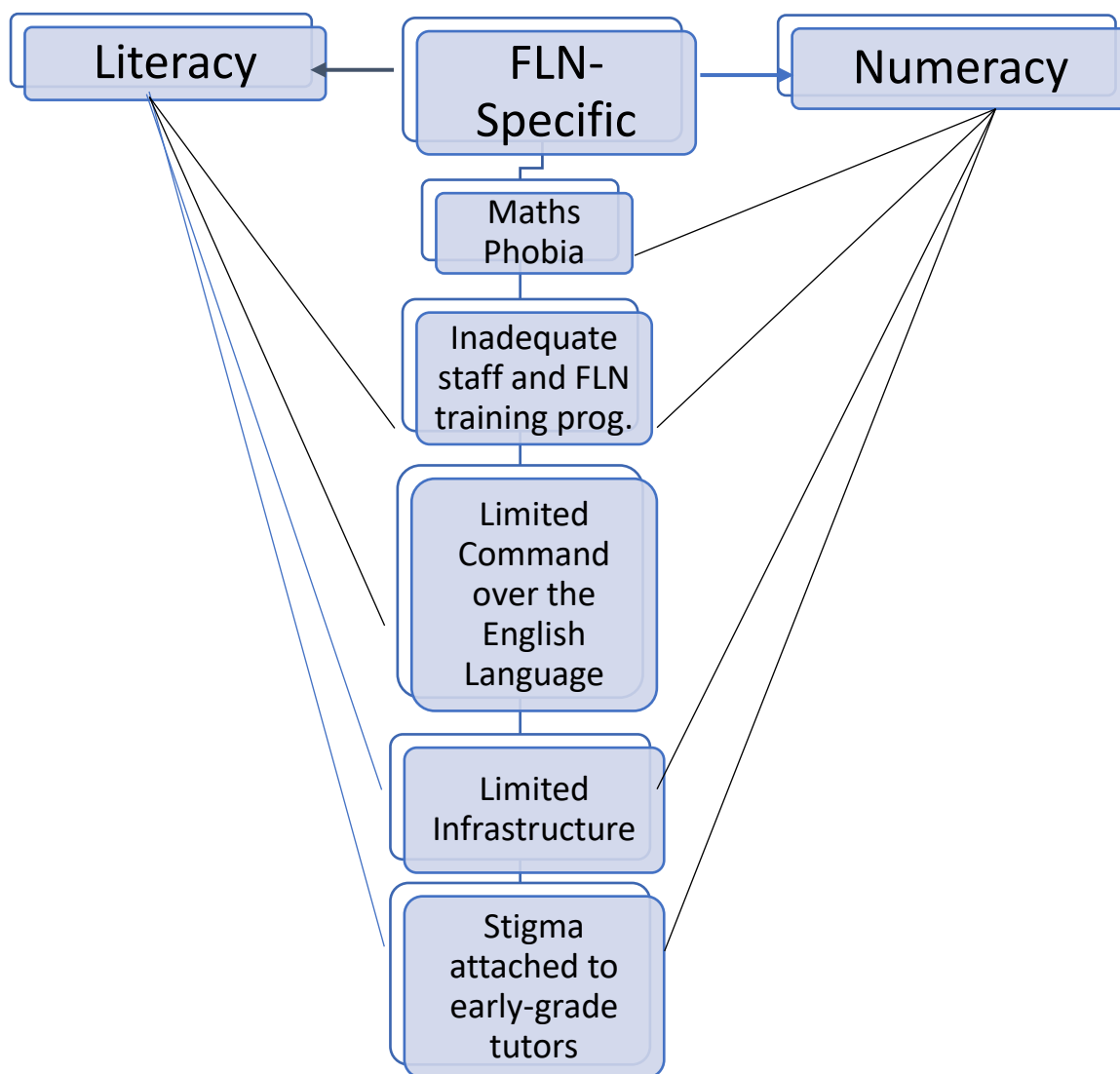


Figure 20. Challenges of Teaching and Learning Foundational Literacy and Numeracy (FLN)

Many participants expressed concerns about the lack of confidence in teaching mathematics among student teachers and their mentors due to long-standing misconceptions that mathematics is difficult or only suited for males. Participants highlighted the need to demystify mathematics instruction through innovative teaching approaches. For example,

The headteacher will tell you that he said this person said he couldn't do it, so it reduced the number of mentors that you have in that school. It means that you have to send the students to other schools which might be far from the College. So somebody, for instance, sends a mathematics student to somebody, and the person will say that my mathematics is not good enough to mentor somebody, so I can't. [Principal, Bono East Region].

Participants also indicated that many colleges lacked sufficient specialized tutors for early-grade education and literacy instruction. English language tutors, in particular, were reported to be overburdened, making it difficult to provide quality training for student teachers. Additionally, although CoEs reported having some TLRs for FLN, they noted that these were often insufficient, outdated, or makeshift substitutes. Many student teachers and tutors had to purchase their own materials, adding to their financial burden.

The teachers are not enough, especially when you come to the language department. English teachers are few so they are overburdened. Recently, they have recruited an additional five teachers who have come to augment the existing school staff, but the English department is still having staff problems. [STS Coordinator, Bono East Region].

The government should come to the schools' aid. We are not paying particular attention to basic education in terms of infrastructure. What do you want them to go and learn? Are the schools having the resources themselves? How many schools have early-grade structures? When I talk about structures, you go, and you see a wooden structure. I visited a particular school in the village. When I was there, I saw a snake entering there. A big snake. We don't recognise it. You see...early grade, then you see an old lady perhaps who did not go higher in charge. You think that early grade is talking about handling little, little children. But that's the foundation stage. You need to get a well-decorated room, a place for children to rest, etc. Pre-activities. You go to even our demonstration school and visit their KG1 and KG2. Does it befit the status of the college? Even our demonstration school. [Principal, Oti Region]

Several participants narrated instances of stigma against early-grade teachers. The narratives suggest that male tutors, in particular, faced social stigma for specialising in early childhood education. There was also a perception that FLN was an easier field, often attracting student teachers who were considered academically weaker. These perceptions could undermine student teachers' interest in uptaking FLN, as reflected in these quotes:

during the admissions, I think the last 3 years or so, when I came initially, I was admitting that early childhood is something that they hated. So, most of them chose either JHS or Primary. [Principal, Ashanti Region]

... the students we are handling, those pursuing early grade, some think that it is an easy course; they think that it is like you don't even have to study before you write exams, although it's not as easy as they think. they were thinking is like it was a programme for the 'not all that good students'' of a sort, not even the average students, but the moment they were admitted, the sort of programs or courses they've been taken through, they realised that if they don't fasten their belt, it will not be easy for them. [Numeracy Tutor, Northern Region].

Limited fluency in English was also highlighted as a challenge related to foundational literacy. Many participants indicated that some student teachers struggle with English proficiency, making it difficult for them to express themselves clearly when teaching. This issue was exacerbated by the frequent use of vernacular on CoE campuses, limiting opportunities for practice and improvement. When explaining this issue, this was what some participants had to say:

Literacy entails a lot. The writing aspect and the writing skills are there. Then the speaking or the oral skills or the communication skills are also there. They all form part of the literacy. Where I have seen a challenge is the communication aspect where the foundation of our students from the secondary school to this place is very weak as far as languages are concerned. At times when they are teaching you realize that they are fumbling a little there. [STS Coordinator, Bono East Region].

Their language is porous. Their spelling system, and their expressions. They can't express themselves as we expect them to do at this level. So, it's a problem. [Literacy Tutor, Eastern Region]

3.9 Suggestions to Improve the STS

The participants provided several recommendations to address the challenges affecting the implementation of the STS. Their suggestions were categorized into six key areas: increased funding, revising the STS duration and making micro-teaching compulsory, regular training and supervision, synchronizing academic calendars, improving assessment approaches, and strengthening FLN. These are summarised in Figure 21.

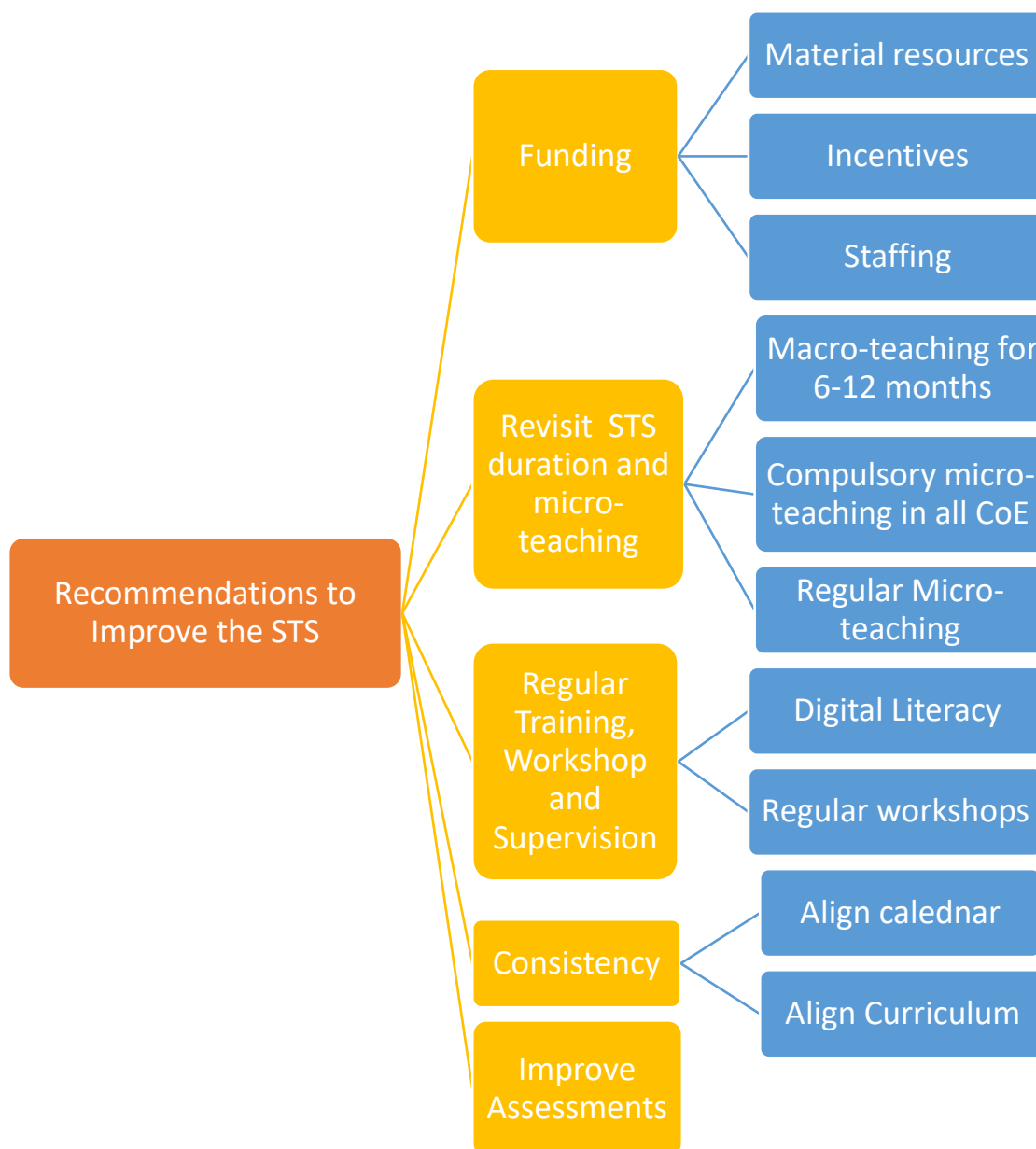


Figure 21. Suggestions to Improve the STS

3.9.1 Increased Funding for STS Implementation

A major concern raised by participants was the need for increased funding to support STS operations. This included investments in material resources, incentives for mentors and linked tutors, and additional staffing to ensure smooth implementation. Participants specifically mentioned the need for buses and their maintenance, fuel, stationery, well-equipped STS resource centres, computers, TLRs, accommodation facilities, and improved classrooms in both the CoEs and practising schools.

At times, the principal will complain that the STS as taking too much resources from the school. Because fuelling and undertaking

maintenance of the vehicle take a lot of money, A4 sheets, the number. The current year, fourth year, they are 393, and we need to print about four sheets of assessment forms. [Coordinator, Western North Region]

In addition to material resources, participants emphasized the importance of incentivizing mentors, linked tutors, and STS coordinators, who play crucial roles in guiding student teachers. The provision of financial or non-monetary incentives would enhance commitment and improve supervision quality.

We need to find a way of motivating these mentors in the partner schools. We just have to find a way of doing this because they are supporting a lot. And as human beings, if time goes on without any recognition, they will start ignoring the students when they go there. They will not reject them, but they will not do a thorough job because they think there is nothing inspiring them to do it. So, if there can be any support somewhere that can actually help us to always take care of that course, I think it will help colleges of education. [Coordinator, Upper West Region].

Another key recommendation was related to staffing support for STS coordination. The study found that implementing STS is a demanding full-time job, yet many CoEs lack dedicated personnel to assist STS coordinators. Some participants suggested recruiting additional administrative support staff to ease the workload and improve efficiency in managing STS activities. These recommendations are represented in the quote below:

We still need to resource the office as well where we can have as many people there to help the coordinator even though we have a secretary at the office who assists the coordinator to do it. I think we need to add one or two human resources because the job is not easy. If you have come here on Wednesday, we are doing reflection, we are doing macro teaching and we are organizing STS for the students to also go. [Vice Principal, Bono Region]

3.9.2 Revisiting the STS Duration and Making Micro-Teaching Compulsory

Several participants advocated for an extension of the macro-teaching period beyond the current three-month duration to provide student teachers with more practical experience before graduation. They also strongly recommended making micro-teaching a mandatory component in all CoEs. The study revealed that some CoEs do not include micro-teaching as part of their STS model, despite its proven effectiveness in preparing student teachers for real classroom engagement. In colleges that face transportation challenges, micro-teaching serves as a valuable alternative for assessing student teachers in controlled environments before they transition to actual classrooms. Participants urged affiliated universities and CoEs that have

either discontinued micro-teaching or never implemented it to reinstate or introduce it as part of their STS module. These recommendations are reflected in the following quotes:

The three months that they have given them needs to be given a lot of time, even extended if need be. This is because when they go for the first month, they are just finding their feet in the new school, by the 2nd month, they start the actual work and by the third month, they will now be picking, then they have to finish. So at least six months will be fine, because sometimes when they finish, they can stay in the house before they come back to the college. So that time that they spend staying in the house, it makes them, some of them, lose certain contents that [Coordinator, Central Region].

The micro-teaching, we don't have the micro-teaching...especially those of us that are affiliated with... We don't have it so that aspect is missing, and at a point, we even suggested that the third year, where they go out for the second semester to have the co-teaching, co-planning, co-assessment. If the University will agree, we will rather use that period for the on-campus teaching practice, where they'll prepare lessons and do peer teaching for us to assess them before they then go out for the teaching practice itself. But as it stands now, we don't have it. [Coordinator, Bono Region].

3.9.3 Regular Training, Workshops, and Supervision

Participants stressed the importance of frequent training and capacity-building workshops for all STS stakeholders, including mentors, linked tutors, lead mentors, and student teachers. Specifically, they called for training in digital literacy, emphasising the need to equip student teachers and mentors with the necessary skills to integrate technology into teaching.

When they started it fresh, they organised a workshop for us. But for the past two years, I have not seen any, I've not attended any workshop concerning STS [Coordinator, Greater Accra Region].

Furthermore, improving the supervision of STS activities was highlighted as a key area for reform. Many stakeholders emphasised the need for more rigorous monitoring of student teachers to ensure compliance with STS guidelines and enhanced mentor-mentee interactions. Concerning increased supervision and monitoring, this was what the participants had to say:

As a linked tutor, you are expected to visit your school at least three times in the semester, if you have not at all but three times you should do it, others will go once and that will be all, they won't follow up again. [Numeracy Tutor, Upper West Region].

3.9.4 Synchronization of Academic Calendars and Curriculum Alignment

As indicated earlier, the study identified misalignment between the academic calendars of basic schools and the CoEs as a major challenge that disrupts STS placements. Often, student teachers' schedules coincide with vacation or examination periods in basic schools, limiting their exposure to actual classroom teaching. Participants suggested improving coordination between educational authorities to ensure that STS activities align with basic school operations. Similarly, concerns were raised about curriculum disparities between the CoEs and practising schools. Some student teachers found it challenging to apply their training effectively due to inconsistencies in the instructional content of their teacher training programme and the curricula used in basic schools. Participants also recommended harmonizing curricular content to bridge these gaps and improve lesson delivery during STS placements. In their narrations, this was what was said:

The mentors are trained differently from what our curriculum tells us to train our students. So, we go there. Sometimes there are petty, petty scuffles. 'Madam mo na mo kase enkoraa no enye se ye ko workshop enye saa na omo ka kyere yen nti what do we do' [Madam, did you teach the students these methods but when we went for the workshop, we were taught differently] So what do we do? So, if there would be a sort of synchronisation of what we do here. We give them our expectations. But they feel that we are disturbing their classes so that one too should be looked at [STS Coordinator, Central Region].

3.9.5 Improving Assessment Approaches for Student Teachers

Another recommendation was the need to enhance the fairness and reliability of STS assessments. Some participants expressed concerns about the inconsistency and subjectivity in grading student teachers' performance. They suggested that assessments should be more transparent, independent, and standardized to ensure fairness and credibility.

And it is true that your own tutor or lecturer must mark your work. But if we really want the assessment to be done properly, I think there must be an exchange, as we have been doing in the marking of the exams. It would be a difficult thing to do, but familiarity is not helping. It breeds contempt. It is a crime. It is not helping. [Principal Ashanti Region].

4.0 Conclusion

The preliminary evidence suggests that student teachers have low competencies in selecting both the appropriate teaching strategies and learning resources for content in foundational literacy and numeracy. Student teachers generally demonstrated poor knowledge of the NTS and its content. The findings suggest that student teachers generally have limited mastery of pedagogical content knowledge, moderate pedagogical knowledge, and weak content knowledge of the FLN curriculum, which could have serious implications for early-grade teaching quality, as these strong knowledge spheres are crucial for effective instruction. The STS provides valuable opportunities for student. Student teachers expect the STS to positively shape their mentorship experiences in FLN, enhancing their understanding and adherence to the NTS for effective teaching.

Challenges in STS implementation as expressed by key stakeholders to include: mentor training gaps, resource material constraints, financial strain on STS implementation, transportation bottlenecks, persistent tutor understaffing, resource scarcity for literacy and numeracy materials, and negative perceptions and gender stereotypes towards FLN. Nonetheless, the STS is widely accepted by all stakeholders alike. The results go to reflect this and show a generally positive impact of the STS. Despite its many benefits and positive appraisals, there were multiple challenges, raising concerns about the effectiveness and fidelity of the STS. Addressing the challenges identified is essential to ensure that the goals of the STS are fully met. Improving the STS will entail increased funding, particularly towards the provision/repair of broken-down vehicles, TLRs, and strategizing to effectively increase the contact time of student teachers with their practicing schools, as well as incentives, effective monitoring, and supervision.

5.0 Appendix

1. Detailed Socio-demographic Characteristics of the Participants

Participant ID	Position	Sex	Years of Teaching	College	Region
STSP1	Principal	Female	4*	St Louis CoE	Ashanti
STSP2	Principal	Male	8	Akrokerri	Ashanti
STSP3	Principal	Male	4	St Monica's CoE	Ashanti
STSP4	Principal	Male	5*	Agogo CoE	Ashanti
STSP5	Principal	Male	6	Fosu CoE	Central
STSP6	Principal	Male	9	St Vincent CoE	Northern Region
STSP7	Principal	Male	19	EP CoE	Northern Region
STSP8	Principal	Female	7	Dambai CoE	Oti
STSP9	Principal	Male	6	Jasikan CoE	Oti
STSP10	Principal	Male	9	Tumu CoE	Upper West
STSP11	Principal	Female	1	St Teresa's CoE	Volta
STSP12	Principal	Male	4	Peki CoE	Volta
STSP13	Principal	Male	8	Bia Lamplighter CoE	Western
STSAP1	Vice Principal	Male	4	Offinso CoE	Ashanti
STSVP2	Vice Principal	Female	9	Accra CoE	Accra
STSVP3	Vice Principal	Male	12	Berekum CoE	Bono
STSVP4	Vice Principal	Male	13	Atebubu CoE	Bono East
STSVP5	Vice Principal	Male	1*	NJA CoE	Upper West
STSVP6	Vice Principal	Male	5*	Enchi CoE	Western North
STSCo1	Coordinator	Female	4	Accra CoE	Accra
STSCo2	Coordinator	Male	23	St Monica's CoE	Ashanti
STSCo3	Coordinator	Male	18	Offinso CoE	Ashanti
STSCo4	Coordinator	Male	18	Akrokerri	Ashanti

STSCo5	Coordinator	Male	9	Agogo CoE	Ashanti
STSCo6	Coordinator	Male	28	St Louis CoE	Ashanti
STSCo7	Coordinator	Male	16	Berekum CoE	Bono
STSCo8	Coordinator	Male	12	Atebubu CoE	Bono East
STSCo9	Coordinator	Female	17	Fosu CoE	Central
STSCo10	Coordinator	Male	20	SDA CoE	Eastern
STSCo11	Coordinator	Male	18	EP CoE	Northern Region
STSCo12	Coordinator	Male	18	Jasikan CoE	Oti
STSCo13	Coordinator	Male	26	Dambai CoE	Oti
STSCo14	Coordinator	Male	10	NJA CoE	Upper West
STSCo15	Coordinator	Male	6	Tumu CoE	Upper West
STSCo16	Coordinator	Male	7	Peki CoE	Volta
STSCo17	Coordinator	Male	19	St Teresah's CoE	Volta
STSCo18	Coordinator	Male	6	BIA Lamplighter CoE	Western
STSCo19	Coordinator	Male	25	Enchi CoE	Western North
STSL1	Literacy Tutor	Female	9	Accra CoE	Accra
STSL2	Literacy Tutor	Female	11	St Louis CoE	Ashanti
STSL3	Literacy Tutor	Male	20	Berekum CoE	Bono
STSL4	Literacy Tutor	Male	22	Atebubu CoE	Bono East
STSL5	Literacy Tutor	Female	22	Atebubu CoE	Bono East
STSL6	Literacy Tutor	Male	22	Atebubu CoE	Bono East
STSL7	Literacy Tutor	Female	16	SDA CoE	Eastern
STSL8	Literacy Tutor	Male	17	EP CoE	Northern Region
STSL9	Literacy Tutor	Male	17	Jasikan CoE	Oti
STSL10	Literacy Tutor	Male	5	Tumu CoE	Upper West

STSL11	Literacy Tutor	Male	6	BIA Lamplighter CoE	Western
STSN1	Numeracy Tutor	Male	10	Agogo CoE	Ashanti
STSN2	Numeracy Tutor	Male	16	St Monica's CoE	Ashanti
STSN3	Numeracy Tutor	Male	20	Akrokerri	Ashanti
STSN4	Numeracy Tutor	Male	6	Offinso CoE	Ashanti
STSN5	Numeracy Tutor	Male	19	Fosu CoE	Central
STSN6	Numeracy Tutor	Male	4	St Vincent CoE	Northern Region
STSN7	Numeracy Tutor	Male	20	Dambai CoE	Oti
STSN8	Numeracy Tutor	Male	5	NJA CoE	Upper West
STSN9	Numeracy Tutor	Female	14	St Teresa's CoE	Volta
STSN10	Numeracy Tutor	Male	22	Peki CoE	Volta
STSN11	Numeracy Tutor	Male	8	Enchi CoE	Western North

*represents years of occupying a position, not years of practice