

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



## **Report on Post Year 4 (Extended Teaching) STS Study Phase Three Report**

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## 1.0 Executive Summary

### 1.1 Introduction

Since 2015, Ghana has implemented comprehensive reforms in Initial Teacher Education to address issues such as low-quality entrants, examinations-focused Diploma in Basic Education (DBE) curriculum, insufficient practical teaching exposure, lack of specialisation, limited resources and inadequate quality assurance policies in Colleges of Education (CoEs).

The reforms were driven by the National Teachers' Standards (NTS), which established expectations for Ghanaian teachers' knowledge and practice, leading to the replacement of the DBE with a 4-year Bachelor of Education (B.Ed.) programme, commencing in 2018.

The B.Ed. includes specialisations for Early Grade (KG–P3), Upper Primary (P4–P6) and Junior High School (JHS 1– JHS 3) and a revised Supported Teaching in Schools (STS) component, structured to give student teachers practical experience throughout their training to enhance professional development.

This report presents evidence on the impact of the STS on teacher professional development in Foundational Literacy and Numeracy (FLN). It is based on self-reported competence and understanding of FLN content, pedagogical strategies and resources, as well as the NTS. The report also builds on an earlier lesson observation survey that ascertained student teachers' demonstrated levels of competence and application of teaching strategies at the start and the end of their 12-week Year Four (Extended Teaching) STS placement.

### 1.2 Methodology

The study used a concurrent explanatory mixed-methods design, combining quantitative and qualitative data collection and analysis. Quantitative data were gathered from a representative sample of student teachers across 30 out of 46 Colleges of Education (CoEs), using a four-stage stratified sampling design. For qualitative insights, in-depth interviews were conducted with selected student teachers and STS coordinators, chosen through purposive sampling.

Data quality was ensured through thorough checks for completeness and consistency. Statistical analyses included frequencies, graphs, multinomial logistic regression to identify factors influencing competency and adherence and structural equation modelling to test relationships in the model generated from the study.

### 1.3 Highlights from Findings

#### *Teaching and Learning resources for teaching foundational literacy and numeracy*

More than half (54.5%) of student teachers reported inadequate teaching and learning resources for foundational literacy during their STS placements. While most could use picture books and picture and flash cards, less than half had access to alphabet charts, workbooks, storytelling props, worksheets and letter blocks. For numeracy, the most available were counters (73.5%), shapes (54.9%) and number cards (51.5%). Less than a quarter of student teachers could use place value materials, or dice.

### *FLN Teaching approaches and STS Mentorship*

About two-thirds (65.7%) of student teachers experienced team teaching in foundational literacy and numeracy during their STS and nearly all who did (95.4%) found it beneficial.

Most student teachers (95.2%) were assigned a mentor, with the vast majority (96.4%) allowed to observe multiple teaching sessions of their mentor. Nearly 8 out of every 10 (77.7%) student teachers engaged children with special needs and 84.6% learned strategies for engaging a class with diverse learning needs.

Most student teachers (90.2% and 86.0%, respectively) reported that their mentors engaged in specific activities to enhance their teaching of foundational literacy and numeracy. Most mentors supported student teachers in selecting appropriate TLRs, but only a minority provided guidance on classroom management or complex pedagogical issues, such as dealing with pupils' deviant behaviour, managing pupils' questions and handling difficult topics. The vast majority (93.7%) of student teachers adopted teaching strategies from their mentors. Significantly, student teachers whose mentors reportedly had a strong understanding and adherence to the National Teachers Standards (NTS) were much more likely to report high adherence to these standards themselves

### *STS Supervision*

More than half (55.0%) of student teachers reported feeling anxious when observed by supervisors, mainly due to doubts about impressing their mentors. Of the 45.0% who were neither anxious nor nervous most reported focusing on the learners, prepared relevant TLRs and felt confident in their teaching abilities. Less than one-third attributed their composure and calmness to deep knowledge of techniques for teaching foundational literacy (28.0%) and numeracy (23.9%). Nearly all student teachers reported receiving feedback from their supervisors during the STS, with 44% receiving it daily.

### *Professional Knowledge in FLN*

The majority of student teachers (85%) rated their content knowledge in foundational literacy as high or very high. Similarly, 80-85.0% reported high or very high content knowledge in foundational numeracy.

Over three-quarters of student teachers rated themselves highly in pedagogical knowledge across all the indicators.

With regards to pedagogical content knowledge, more than 80% of student teachers also rated themselves as high or very high across all the indicators.

### *Competencies in FLN*

- More than 80% of student teachers self-reported high or very high competency in FLN, including self-confidence in teaching, preparation of lesson plan and lesson delivery.
- Competence in selecting specific teaching strategies was moderate. A little more than half of student teachers felt competent in teaching listening (phonemic awareness) and concept of print, while well below 50% felt confident in strategies for phonics, reading (vocabulary, comprehension and especially reading fluency).
- For foundational numeracy, 70.5% of student teachers felt competent in teaching counting and number representation, but less than half felt confident in selecting strategies for more advanced topics such as operations and relationships between numbers, fractions, algebra, geometry, measurement and data handling.

- A substantial majority (about 77-82%) of student teachers reported high competence in choosing the appropriate teaching and learning resources for the foundational literacy and numeracy syllabi, effective classroom management, meeting learners' needs and engaging learners.

#### *1.4 Conclusions and Recommendation*

- The findings from the post STS survey, reveal significant improvement in foundational literacy and numeracy (FLN) competencies of student teachers, particularly in content knowledge, pedagogical skills and the ability to select appropriate teaching strategies and resources.
- There was increased familiarity with better understanding of and adherence to the National Teaching Standards (NTS), with most student teachers demonstrating high levels of professional practice.
- The STS practicum and mentorship contributed positively to student teachers' motivation and readiness for professional teaching of FLN.
- Despite the significant gains reported, the effectiveness of the STS is constrained by resource shortages, infrastructural weaknesses and weak institutional coordination. Systemic issues such as workload, supervision quality and entrenched school cultures hinder the smooth implementation of teaching practice.
- Addressing these challenges requires improved incentives for mentors, enhanced supervisor training and reforms to reduce class sizes and foster supportive teaching environments.

## 2.0 Introduction

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

**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.<sup>2</sup> 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.

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<sup>1</sup> 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

<sup>2</sup> 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.<sup>3</sup> The starting point of the current reforms was the production of the NTS,<sup>4</sup> 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 NTECF<sup>5</sup> 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);

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<sup>3</sup> 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](#)

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

<sup>5</sup> 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.<sup>6</sup>

**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.

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<sup>6</sup> 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](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.<sup>7</sup>

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).

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<sup>7</sup> GTEC FoI Report : [https://t-tel.org/download/report\\_fidelity-of-implementation-foi-of-b-ed-programme/?wpdmdl=8130&refresh=642c12e4634d01680610020](https://t-tel.org/download/report_fidelity-of-implementation-foi-of-b-ed-programme/?wpdmdl=8130&refresh=642c12e4634d01680610020)

## *2.1 Objectives of the study*

The Year Four post-STS study focuses on student teachers who had completed their Year Four extending teaching and examines their preparedness to teach FLN in relation to the NTS. The overall objective of the study is to examine the extent to which the Year Four extended teaching prepares B.Ed. student teachers in the KG–P3 specialism to teach FLN in alignment with the NTS, following their transition from Year Three to Year Four of the programme.

Specifically, the study seeks to:

- assess student teachers' knowledge, skills and competencies in FLN after completing the Year Four extended STS teaching;
- examine student teachers' perceived adherence to the NTS in relation to their teaching and professional conduct;
- analyse how experiences during the STS placement shape instructional practices, professional behaviour and readiness to teach at the early grades;
- examine the roles of mentorship, supervision and access to teaching and learning resources in influencing student teachers' perceived competence, confidence and professional development during the STS period;
- explore student teachers' and STS coordinators' perceptions of the benefits and impacts of the Year Four 12-week extended STS teaching; and
- assess the extent to which expectations regarding professional standards adherence and classroom responsibility by the end of Year Four of the B.Ed. programme are perceived to have been realised.

### 3.0 Methodology

#### 3.1 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. 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.

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. First, CoEs were stratified by ecological zones - 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 proportionally allocated to each zone. Eight (8) CoEs were allocated to the Coastal zone, fifteen (15) to the Forest zone and seven (7) to the Savannah zone.

Within each zone, CoEs were further stratified by their mentoring universities, namely Kwame Nkrumah University for Science and Technology (KNUST), University of Cape Coast (UCC), University for Development Studies (UDS), University of Education Winneba (UoE) and University of Ghana (UG).

CoEs were then randomly sampled from each mentoring university in proportion to their presence in each zone.

Next, the selected CoEs were stratified by sex composition (all-males, all-females or mixed), with proportional allocation and inclusion of any single-sex CoEs in each zone. This approach ensured broad geographic, institutional and demographic representation in the study 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 final stage of sampling, up to three Level 400 classes were randomly selected from each sampled CoE. All students in the sampled classes were eligible to participate in the the study. 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 |       |
| <b>Coastal</b>                                     |                            |       |       |
| University of Cape Coast                           | 230                        | 54    | 284   |
| University of Ghana                                | —                          | 147   | 147   |
| University of Education                            | —                          | 72    | 72    |
| Total                                              | 230                        | 273   | 503   |
| <b>Forest</b>                                      |                            |       |       |
| 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 |
| <b>Savannah</b>                                    |                            |       |       |
| University of Education                            | —                          | 89    | 89    |
| Kwame Nkrumah University of Science and Technology | —                          | 60    | 60    |
| University of Development Studies                  | —                          | 233   | 233   |
| Total                                              | —                          | 382   | 382   |
| <b>All</b>                                         |                            |       |       |
| 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, a qualitative description design was used to provide detailed, context-rich summaries of STS experience. 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 were conducted with selected student teachers and STS coordinators, chosen through purposive sampling to gather insights into their experiences, challenges and perceptions of the STS implementation.

Tables 3 and 4 summarise the background characteristics of the study participants. In total, 30 participants were interviewed, comprising 20 student teachers from across 10 regions (mainly Ashanti and Northern) and 10 STS coordinators.

The average age of the student teachers was 25 years, with equal representation of males and females. Most of the student teachers studied Early Childhood Education (Early Grade), with only 2 in Primary Education. All but two of the student teachers taught in public schools (Basic

1 and 2) The two did their STS in private schools. Seven of the student teachers had an average formal teaching experience of six (6) months post their Senior High School Education before enrolling in the CoEs. Two of the student teachers had obtained informal teaching experience as Sunday School teachers before joining the CoEs. Detailed information about the characteristics of the student teachers is presented in Table 3.

Table 3: Background Characteristics of the Student Teachers

| ID  | Region of CoE | Age    | Sex    | Programme of Study at CoE | Class During STS | Teaching Experience Before CoE* |
|-----|---------------|--------|--------|---------------------------|------------------|---------------------------------|
| M1  | Ashanti       | 23     | Female | Early Grade               | KG 2             | 12                              |
| M2  | Ashanti       | 24     | Female | Primary Education         | Basic 2          |                                 |
| M3  | Bono East     | 25     | Female | Early Grade               | Basic 1          | 0                               |
| M4  | Ashanti       | 29     | Female | Early Grade               | Basic 1          | 0                               |
| M5  | Western North | 25     | Female | Early Grade               | Basic 1          | 0                               |
| M6  | Central       | 25     | Female | Early Grade               | Basic 1          | 5                               |
| M7  | Northeast     | 29     | Female | Early Grade               | KG 2             | 2                               |
| M8  | Northern      | 25     | Female | Early Grade               | Basic 1          | 0                               |
| M9  | Ashanti       | 23     | Female | Early Grade               | Basic 3          | 6                               |
| M10 | Eastern       | 23     | Female | Primary Education         | Basic 2          | 0                               |
| M11 | Upper West    | 27     | Male   | Early Grade               | Basic 3          | 6                               |
| M12 | Oti           | 22     | Male   | Early Grade               | Basic 1          | 36                              |
| M13 | Oti           | 22     | Male   | Early Grade               | Basic 1          | 0                               |
| M14 | Volta         | 31     | Male   | Early Grade               | Basic 1          | 0                               |
| M15 | Eastern       | 23     | Male   | Early Grade               | Basic 2          | 1                               |
| M16 | Eastern       | 25     | Male   | Early Grade               | Basic 2          | 0                               |
| M17 | Northern      | 24     | Male   | Early Grade               | KG1              | 48                              |
| M18 | Central       | 25     | Male   | Early Grade               | Basic 2          | 0                               |
| M19 | Ashanti       | 27     | Male   | Early Grade               | Basic 2          | 0                               |
| M20 | Greater Accra | 24     | Male   | Early Grade               | Basic 3          | 0                               |
|     |               | M=25   |        |                           |                  | M=6                             |
|     |               | SD±2.5 |        |                           |                  | SD±13.13                        |

\* The teaching experience of student teachers is reported in Months; M = Mean, SD = Standard Deviation; CoE = College of Education

Table 4 presents the background characteristics of the STS coordinators in the sample. Most of the Coordinators were male ( $n=7/10$ ) and had taught in the CoEs for an average of 11 years, with the experience ranging between 5 to 18 years. However, the average number of years served as STS Coordinators was 3 years. This information is summarised in Table 4.

Table 4: Background Characteristics of the STS Coordinators

| ID  | Region        | Sex    | Number of Years as Tutor in CoE | Number of Years as STS Coordinator |
|-----|---------------|--------|---------------------------------|------------------------------------|
| C1  | Accra         | Female | 5                               | 2                                  |
| C2  | Ashanti       | Male   | 10                              | 7                                  |
| C3  | Bono East     | Male   | 9                               | 2                                  |
| C4  | Central       | Female | 17                              | 2                                  |
| C5  | Northern      | Male   | 10                              | 3                                  |
| C6  | Upper West    | Male   | 9                               | 2                                  |
| C7  | Western North | Male   | 7                               | 3                                  |
| C8  | Oti           | Male   | 18                              | 4                                  |
| C9  | Oti           | Male   | 14                              | 0                                  |
| C10 | Ashanti       | Female | 11                              | 4                                  |
|     |               |        | M=11                            | M=2.9                              |
|     |               |        | SD=±4.16                        | SD=±1.85                           |

### 3.2 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.

### 3.3 Data Collection

Data collection was planned to follow the 2024/2025 academic year calendar, occurring after Year Four student teachers had begun their extended STS placements. Quantitative data were gathered using Computer Assisted Personal Interviewing (CAPI) surveys completed by student teachers in selected classes. The locations of the selected schools were mapped to facilitate fieldwork.

For the qualitative phase, in-depth, face-to-face interviews were conducted with participants from each affiliate university, with their prior consent obtained for recording the process.

### 3.4 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 used to verify response rates and data completeness. Key indicators were summarised using frequencies and graphs. The multinomial logistic regression was applied to identify the determinants of student teachers' 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).
  - Self-reported competency in selecting appropriate TLRs for foundational numeracy (specific resources linked to each of the 8 identified teaching strategies for foundational numeracy).
  - 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-based 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.) The three sub-domains of the NTS; Professional Values and Attitudes, Professional Knowledge and Professional Practice were each 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).
- Knowledge and awareness of Professional Knowledge to be exhibited by a Student Teacher (6 key attributes as stated in the NTS).
- Knowledge and awareness of Professional Practices to be exhibited by a Student Teacher (16 key attributes as stated in the NTS).

The covariates considered for the analysis were sex, age, programme of study, class taught college characteristics, mentoring university and ecological zone. Path analysis was used to explore how variables like mentorship, practicum, competencies, knowledge, NTS awareness, adherence and understanding and motivation relate to professional readiness to teach FLN.

Qualitative data were thematically analysed using NVivo version 11. Quality/trustworthiness of the qualitative data was checked through thick descriptions, debriefing and member-checking. Both inductive and deductive techniques were applied to the text data to ensure trustworthiness.

## 4.0 RESULTS

### 4.1 Foundational Literacy and Numeracy

#### 4.1.1 Teaching and Learning Resources

More than half (54.5%) of student teachers reported lack of sufficient teaching and learning resources during their STS placements for teaching foundational literacy. Figure 1 shows that, while more than half of student teachers had the opportunity to use picture books, picture and flash cards, fewer (less than half) had access to essential materials like alphabet charts, workbooks, storytelling props, worksheets and letter blocks.

The limited access to essential teaching and learning resources may have hindered the development of practical teaching skills by the student teachers, highlighting the need for more equitable distribution of foundational literacy resources across schools.

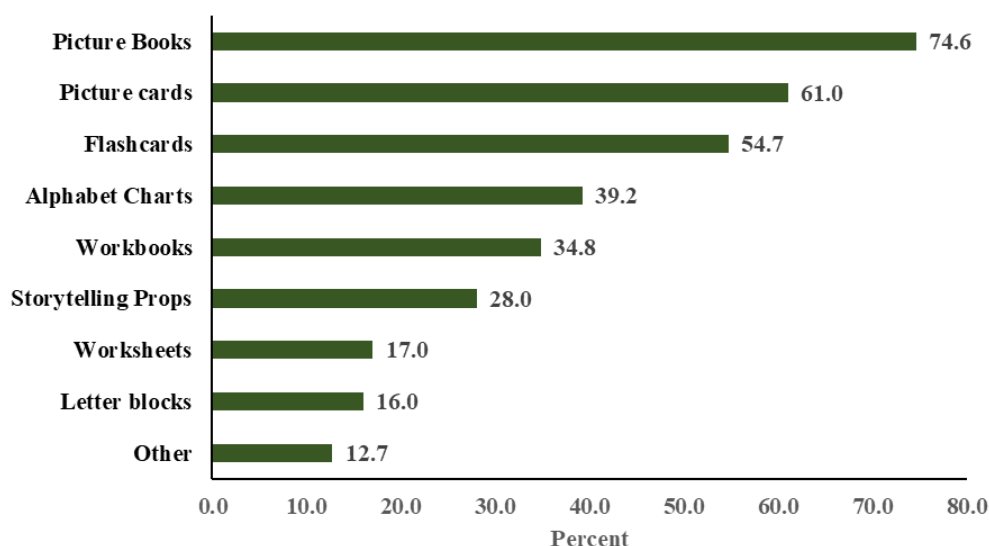


Figure 1: Teaching and learning resources used to teach foundational literacy during the STS

*Note: This was a multiple-response question; the total percentage may exceed 100%.*

Similarly, about one-half (50.5%) of student teachers reported inadequate teaching and learning resources for teaching foundational numeracy. Figure 2 shows that counters (73.5%), shapes (54.9%) and number cards (51.5%) were the resources that were mostly available to student teachers. On the other hand, less than a quarter of student teachers had the opportunity to use place value materials, varied objects for sorting and marking patterns and dice.

The results show that student teachers faced notable constraints in accessing adequate teaching and learning resources to support their teaching of foundational numeracy during STS. While materials such as counters, shapes and number cards were largely accessible, more specialised and conceptually important resources such as place value aids, varied sorting objects, pattern materials and dice were in significantly short supply. This limited exposure to a broader set of numeracy tools may have restricted student teachers' ability to practise diverse instructional strategies and deepen their skills in teaching core numeracy concepts.

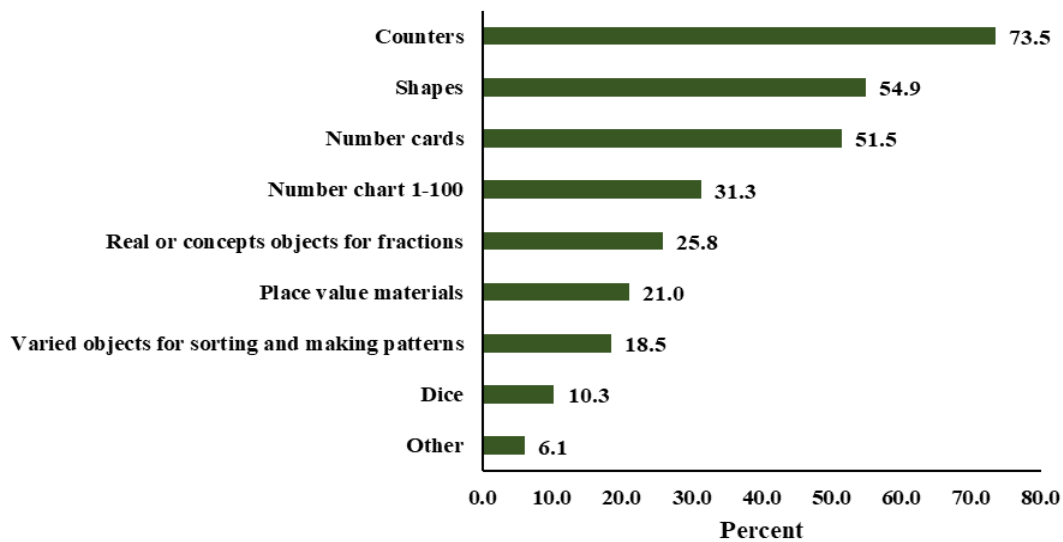


Figure 2: Teaching and learning resources used to teach foundational numeracy during the STS

*Note: This was a multiple-response question; the total percentage may exceed 100%.*

#### 4.1.2 Teaching Approach at Mentoring School

Approximately two-thirds (65.7%) of student teachers reported that team teaching in foundational literacy and numeracy was practised in the school where they completed their STS. Of those that witnessed team teaching, 95.4% indicated that they benefited from it. Figure 3 shows the percentage distribution of student teachers by the reported benefits they derived from team teaching. While over half of the student teachers reported gaining confidence in the classroom (62.8%) and learning new foundational literacy teaching techniques (54.4%), only 39.6% said they experienced similar benefits in foundational numeracy. The results suggest that team teaching at the foundational level could significantly enhance instructional skills in foundational literacy and numeracy for student teachers on STS. Accordingly, there is a need to formalise its adoption at the foundational level and for STS to ensure consistent, structured and effective practice.

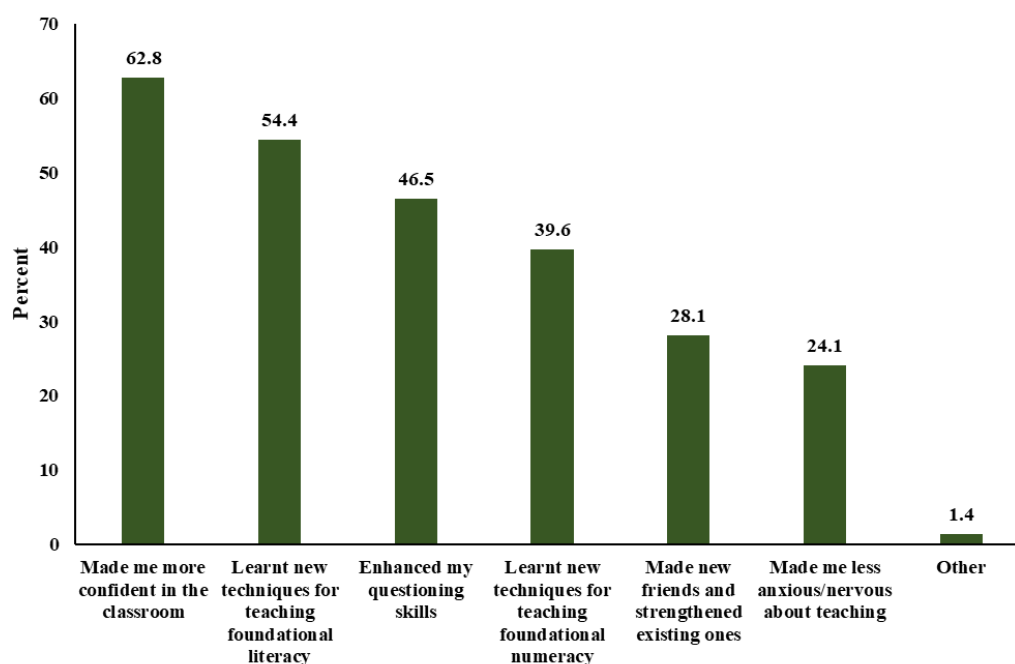


Figure 3: Benefits derived from team teaching among staff during STS

*Note: This was a multiple-response question; the total percentage may exceed 100%.*

#### 4.1.3 STS Mentorship

A large majority (95.2%) of student teachers were assigned mentors during their STS placements and most (96.4%) observed at least three of their mentor's teaching sessions. Nearly 9 in 10 (89.0%) were introduced to strategies for identifying children with special needs and just over 8 in 10 (81.5%) reported the presence of strategic plans for engaging such children. About 78% of student teachers had direct opportunities to work with children with special needs and 84.6% learned strategies for managing diverse learning needs.

The findings indicate that the STS mentorship structure is robust and effective in preparing student teachers for inclusive teaching in foundational literacy and numeracy.

#### 4.1.4 STS Supervision

More than half (55.0%) of student teachers reported feeling anxious or nervous when observed by supervisors, mainly due to concerns about impressing mentors (62.5%) and the likely impact on assessment marks (40.9%). As is further evident from Figure 4, one-quarter of student teachers cited anxiety from being told their lesson was being assessed for grading purposes. Clearly, assessment pressures and the desire to impress mentors are major sources of stress, potentially hindering performance and professional development.

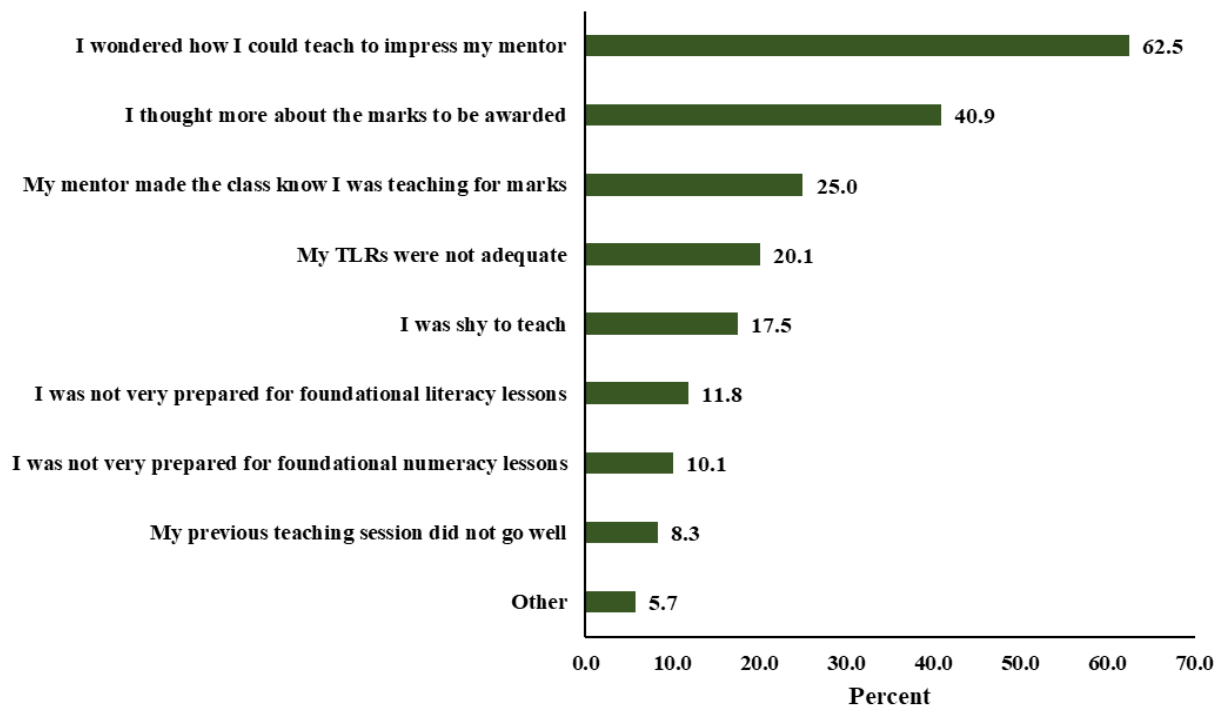


Figure 4: Reasons for anxiety/nervousness when a supervisor visited to observe teaching

*Note: This was a multiple-response question; the total percentage may exceed 100%.*

Of the 45.0% of student teachers who were neither anxious nor nervous when observed by supervisors, most attributed their composure to focusing on the learners (60.3%), preparing relevant TLRs (58.0%) and confidence in their teaching abilities (50.0%). Figure 5 further illustrates that less than one-third credited their calmness to their in-depth knowledge of techniques for teaching foundational literacy (28.0%) and numeracy (23.9%). Adequate preparation to teach and mentor support were also cited by some student teachers, but to a much lesser extent. Overall, general preparedness, focus on learners and self-confidence played a greater role in reducing anxiety of student teachers than by subject-specific pedagogical knowledge.

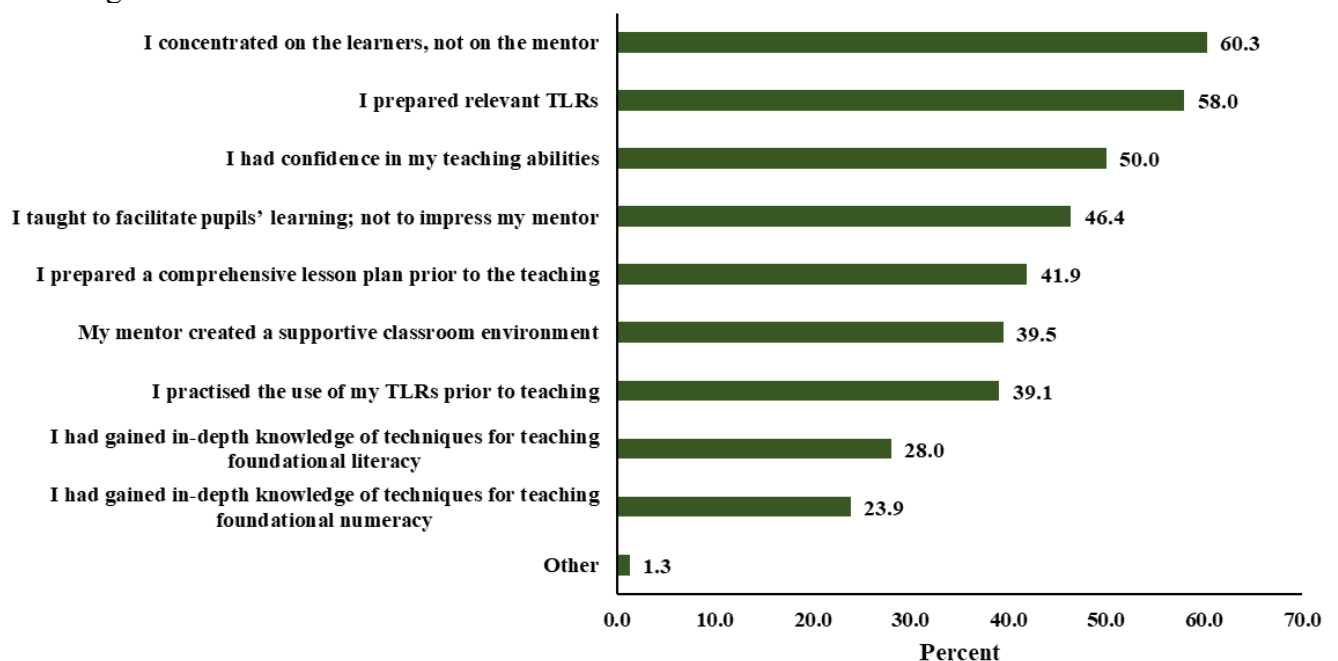


Figure 5: Reasons for not being anxious/nervous when a supervisor visited to observe teaching

Note: This was a multiple-response question; the total percentage may exceed 100%.

#### 4.1.5 Mentor Support

Most student teachers (90.2% for literacy and 86.0% for numeracy) reported that mentors actively supported their teaching in very specific ways. Almost 2 out of every 3 student teachers were supported by mentors in selecting appropriate TLRs (see Figure 6). However, less than one-third received guidance on classroom management, handling difficult topics, or addressing pupils' questions and deviant behaviour. This indicates that while mentors active in resource-related support, there is less emphasis on developing broader instructional and classroom management skills. Consequently, it is clear that mentoring practices may require strengthening in areas that build broader instructional and classroom management competence of student teachers.

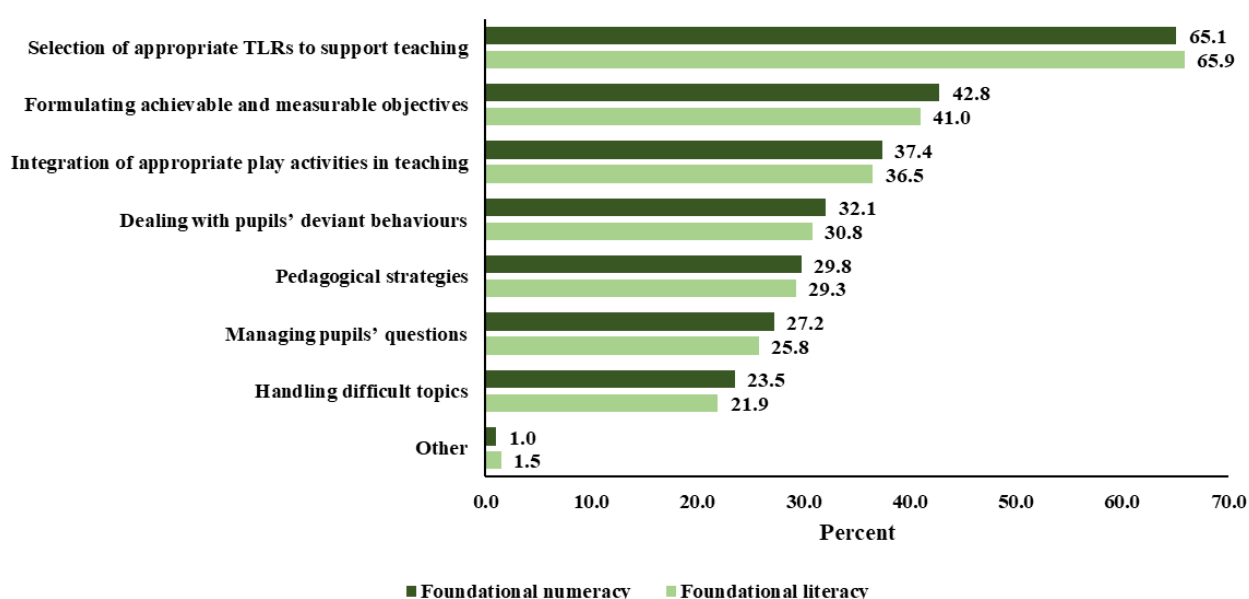


Figure 6: Specific activities mentors engaged in to enhance student teachers' teaching of foundational literacy and numeracy

Note: This was a multiple-response question; the total percentage may exceed 100%.

Nearly all student teachers (97.4%) reported receiving feedback on their teaching of foundational literacy and numeracy. Figure 7 shows how frequently student teachers received feedback from their mentors. Feedback was delivered in both written and verbal forms (38.5%), in verbal form only (53.3%) and in written form only (8.2%). The overwhelming majority (98.5%) of student teachers who received feedback from their mentors considered it as useful.

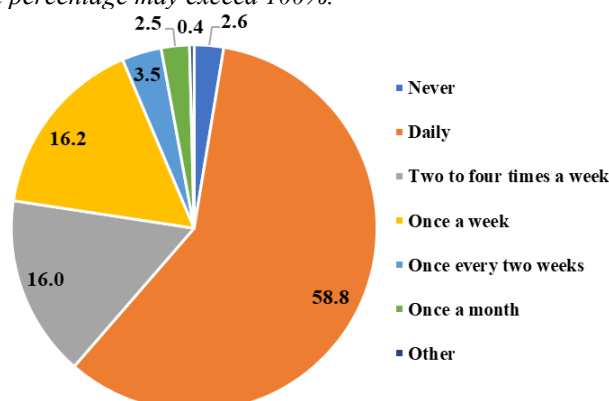


Figure 7: How often student teachers received feedback from their mentors during the STS

Figure 8 shows the percentage distribution of student teachers and the common areas they indicated mentors provided input on.

The more common issues on which student teachers received feedback were Lesson plan preparation (47.6%) and class control (41.2%). Nearly 2 out of 5 (39.2%) received feedback on lesson introduction and 36.0% on lesson content delivery. About one-third (32.4%) received feedback on class time management and almost one-fifth received feedback on asking questions that promote critical thinking, appropriately aligning teaching and learning activities to content, teaching difficult topics and managing deviant behaviour in class, among others (Figure 8).

The results show that feedback to student teachers focused on basic instructional skills, particularly lesson plan preparation and classroom management. More advanced areas, such as lesson introduction, content delivery and time management, were addressed less consistently, reaching only about one-third of student teachers. Significantly, complex pedagogical competencies, including promoting critical thinking, aligning activities with content, teaching challenging topics and managing deviant behaviour, were rarely addressed, with fewer than one-fifth receiving guidance on them. Clearly, mentors tended to focus on the basics of teaching, while giving much less attention to more complex skills. Providing more guidance in these advanced areas could help student teachers improve their teaching and support better learning in the classroom.



Figure 8: Issues on which mentors provided feedback

*Note: This was a multiple-response question; the total percentage may exceed 100%.*

The vast majority (93.7%) of student teachers reported adopting teaching strategies for foundational literacy and numeracy from their mentors during the STS. Most commonly, they used children's prior knowledge to introduce new lessons (63.4%) and captured pupils' interest at the start of lessons (56.6%) (see Figure 9). Fewer adopted interactive strategies such as peer learning (37.5%) and managing wrong answers constructively (32.9%). Less than one-third adopted creative strategies like role-play, using verbal rewards, or the see-show-say game method to help children to recognise alphabetical letters in literacy class and to differentiate between figures and numbers (Figure 9).

Most student teachers tended to adopt basic strategies from their mentors, particularly using children’s prior knowledge to introduce lessons and capturing pupils’ interest at the beginning of foundational literacy and numeracy sessions. These approaches reflect an emphasis on building initial engagement and linking new content to what children already understand. A moderate proportion of student teachers adopted more interactive strategies, such as encouraging peer learning and managing wrong answers constructively. These practices suggest some movement toward learner-centred instruction, but they are not widespread. More innovative or specialised strategies, including the use of role-play, verbal rewards and the see-show-say game method for foundational literacy and numeracy lessons, were adopted by less than one-third of student teachers. This indicates limited uptake of creative, child-centred pedagogies that can enhance motivation, reinforce concepts and support differentiated learning.

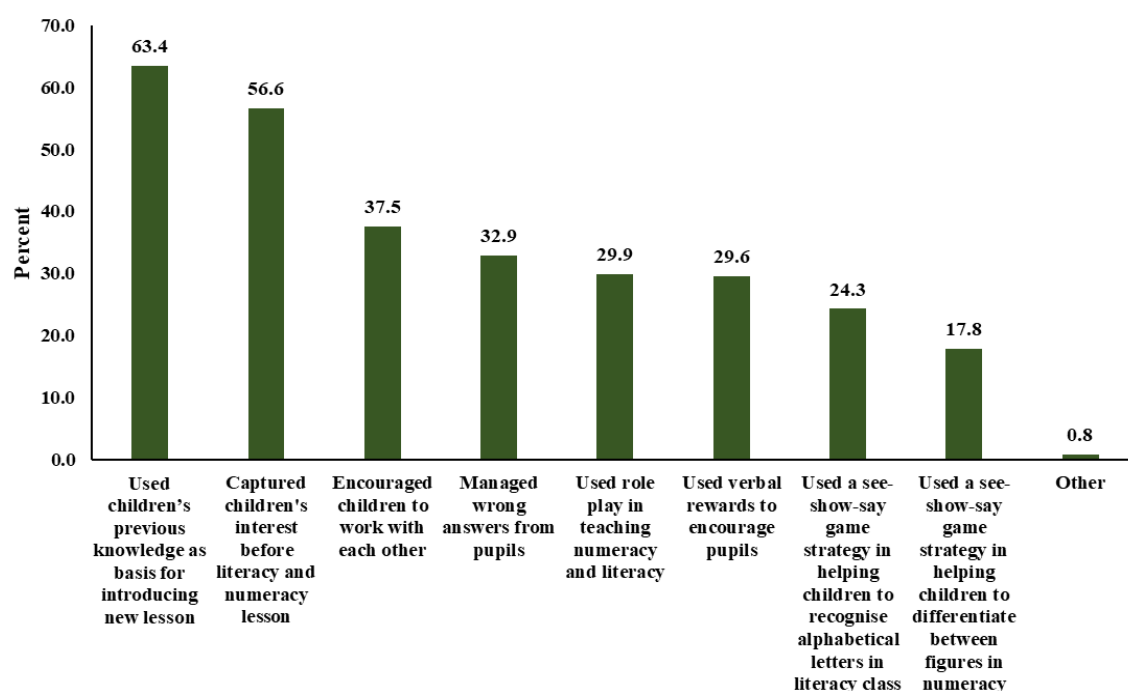


Figure 9: Teaching strategies student teachers adopted from their mentors for foundational literacy and numeracy instruction

*Note: This was a multiple-response question; the total percentage may exceed 100%.*

Student teachers reported on how the teaching strategies they adopted from their mentors helped with their teaching (Figure 10). About 70% of student teachers reported that the strategies adopted from mentors made children more active in class and about half (49.1%) reported that learning became more enjoyable through play-based activities. About one-third noted improvements in pupils' vocabulary, the use of varied teaching approaches and peer communication. Less than one-third of student teachers felt these strategies helped them to identify individual learner needs, promote critical thinking among learners or reflect on the pedagogical strategies (Figure 10).

Overall, most adopted strategies enhanced learner engagement, but fewer supported deeper pedagogical skills.

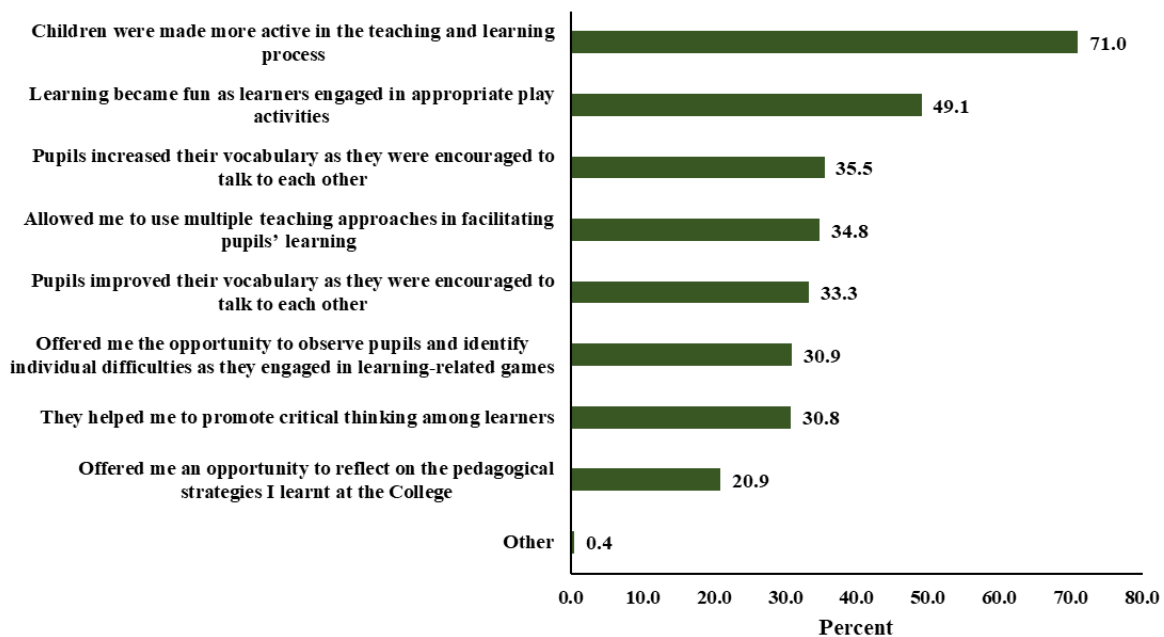


Figure 10: How the teaching strategies adopted from mentors for foundational literacy and numeracy helped student teachers with their teaching

*Note: This was a multiple-response question; the total percentage may exceed 100%.*

#### 4.1.6 Supervisor Support

Almost all student teachers (95.9%) reported receiving feedback from their supervisors during the STS period. However, the frequency of the feedback varied considerably. Figure 11 shows the frequency at which student teachers received feedback from their supervisors. More than three-quarters (76.4%) of student teachers reported receiving feedback from their supervisors on at least a weekly basis. About one-half (50.8%) of the student teachers reported receiving feedback from supervisors in both written and verbal formats, 36.5% in verbal format only and 12.7% in written format only.

The vast majority of student teachers (98.2%) found the feedback provided by their supervisors to be useful.

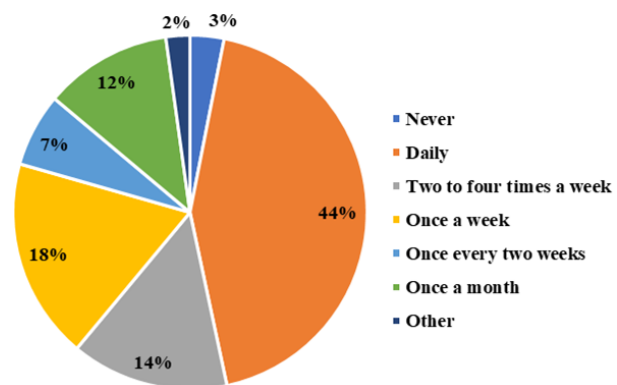


Figure 11: How often student teachers received feedback from their supervisors during the STS

Figure 12 shows that the highest proportion of student teachers (46.7%) received supervisor feedback on lesson plan preparation, class control (36.0%) and lesson introduction (34.9%). Feedback on class time management, use of teaching resources, assessment strategies, alignment of teaching and learning activities to content and lesson closure were less common (ranged between 20.7% and 29.1%). Fewer, than one-fifth of student teachers received

feedback on advanced practices such as promoting critical thinking, developing resources, sustaining learners' interest, teaching difficult topics or managing deviant behaviour.

The distribution of feedback indicates that supervisors prioritised core instructional competencies, particularly lesson planning, classroom control and lesson introduction. These three areas attracted the highest proportions of feedback, suggesting that supervisors viewed them as fundamental to student teachers' immediate classroom performance. Feedback on procedural and pedagogical practices, such as class time management, use of teaching and learning resources, assessment strategies and alignment of activities to lesson content, was less common, reflecting modest engagement on issues that require deeper pedagogical judgment and classroom strategy.

Notably, very few student teachers received feedback on more advanced instructional practices such as promoting critical thinking, developing appropriate learning resources, managing deviant behaviour, sustaining learner interest, or teaching difficult topics. These areas, which require higher levels of pedagogical expertise, appear to be largely overlooked in supervisory interactions. The feedback supervisors provided tended to focus on foundational aspects of teaching, while more complex pedagogical skills received limited attention. Although this emphasis may help student teachers build basic instructional competence, the lack of consistent feedback on higher-order teaching strategies may constrain their professional growth and limit their ability to foster deeper learning, critical thinking and classroom problem-solving among pupils.

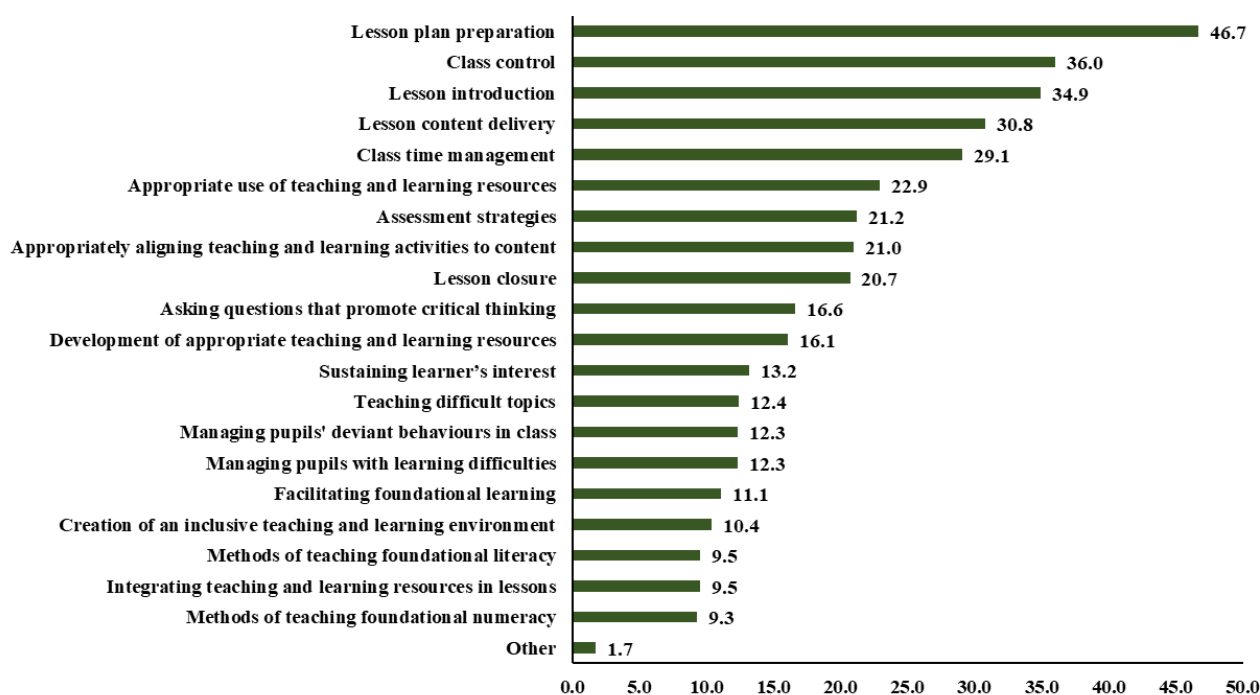


Figure 12: Issues on which supervisors provided feedback

*Note: This was a multiple-response question; the total percentage may exceed 100%.*

Most student teachers (97.5%) were satisfied with supervisor feedback, citing motivation (66.7%) and improved teaching skills (54.9%) as key benefits (Figure 13). Nearly one-half (48.3%) felt the feedback was a fair assessment, while smaller proportions found it clear (35.4%) or adequate (22.1%). Almost all student teachers (97.4%) agreed the feedback supported their professional development in teaching foundational literacy. A similar proportion (96.3%) reported the same for teaching foundational numeracy.

The findings show that student teachers highly valued supervisory feedback, with nearly all expressing satisfaction. Motivational support and improved teaching skills were the

main benefits, while smaller proportions highlighted fairness, clarity and adequacy of feedback.

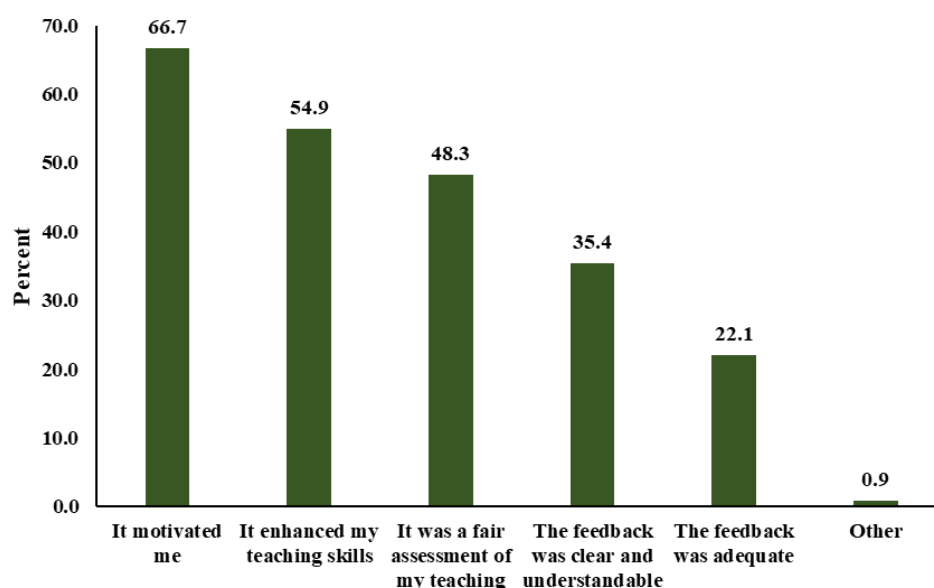


Figure 13: Reasons student teachers cited for their satisfaction with supervisors' feedback

Note: This was a multiple-response question; the total percentage may exceed 100%.

#### 4.2 *Impact of STS on Preparation Towards Teaching of Foundational Literacy and Numeracy*

A large majority of student teachers (more than 95%) reported that the STS programme effectively prepared them to teach foundational literacy and numeracy. Several reasons were provided for this assertion; the most common (cited by 63.6%) student teachers, was that the STS enabled them to have a clearer understanding of teaching methods (see Figure 14). Many student teachers also gained deeper insights into pupil characteristics, improved adherence to the NTS and developed techniques for sustaining pupils' interest.

Between one-fifth and one-third of student teachers reported being positively impacted in several areas. They indicated that they were able to use a wider range of foundational literacy teaching techniques (32.4%), had become more confident in teaching foundational literacy (31.8%) and had gained increased knowledge of diverse instructional approaches (31.4%). They also noted improved capacity to guide learners to demonstrate understanding through play-based literacy activities (26.4%) and to successfully support learners in completing tasks using literacy game approaches (23.2%). In addition, fewer than one-fifth of student teachers indicated that the STS experience had enabled them to effectively guide learners to demonstrate creativity during foundational literacy lessons (19.5%), respond to learners' questions (18.8%), manage pupils with learning difficulties (17.0%), address truant behaviours (16.8%) and to support pupils in completing difficult tasks (16.0%) among others.

Overall, the findings suggest that STS strengthened student teachers' core foundational literacy teaching competencies, particularly in understanding instructional methods, knowing pupils' characteristics and applying the National Teaching Standards in practice. However, further support is needed for advanced classroom skills, such as managing learner difficulties, addressing behavioural challenges and fostering creativity.

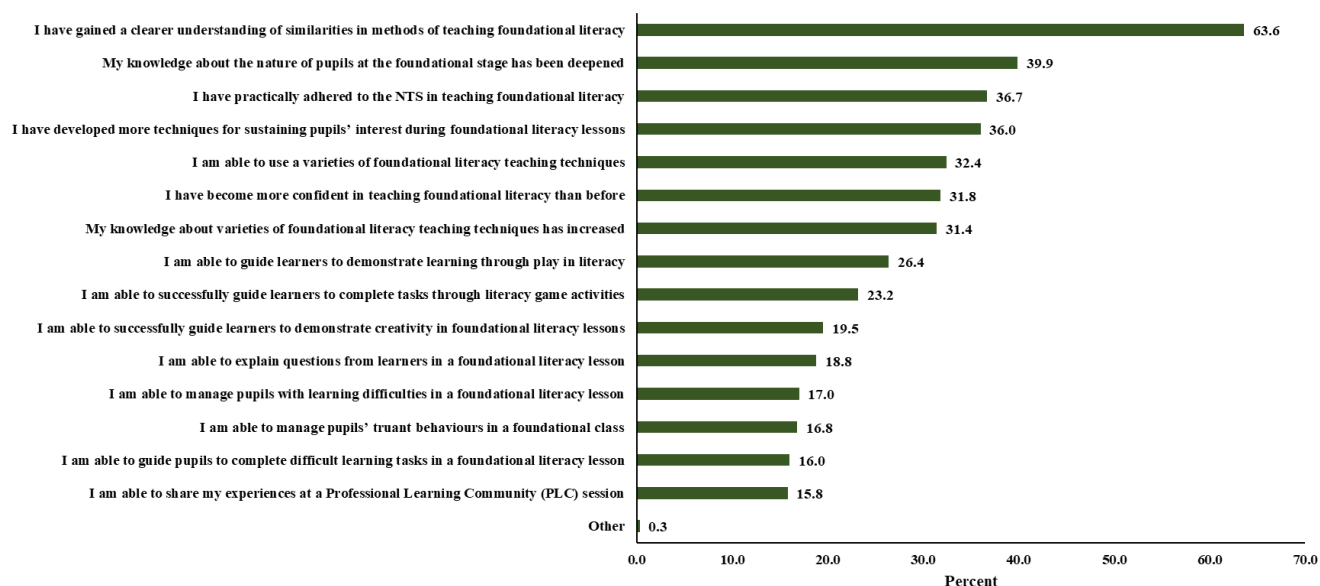


Figure 14: Student teachers' reported reasons for why STS prepared them for effective teaching of foundational literacy

*Note: This was a multiple-response question; the total percentage may exceed 100%.*

Figure 15 shows student teachers' self-reported impact of STS on their preparation towards teaching of foundational numeracy. Like foundational literacy, about 60% of student teachers reported that the STS experience improved their understanding of foundational numeracy teaching methods, with 36.8% indicating that they gained deeper insight into pupil characteristics. Approximately one-third said the STS experience helped them to apply a wider range of instructional techniques (34.9%), adhere better to the National Teachers Standards (34.3%) and develop additional strategies to sustain pupil interest (33.4%).

Smaller proportions of student teachers reported increased confidence in teaching foundational numeracy (30.7%), improved ability to use play-based and game-based activities (28.2%; 22.4%) and greater capacity to foster creativity (20.4%). Fewer than one-fifth of student teachers felt better prepared to address learners' questions, manage learning difficulties, manage learning difficulties, handle challenging tasks or behaviours and participate in Professional Learning Community (PLC) sessions.

The findings indicate that while the STS experience substantially strengthened student teachers' core foundational numeracy teaching skills, more complex areas such as managing learner difficulties, addressing behavioural issues and responding to challenging classroom situations received less benefit and may require targeted support.

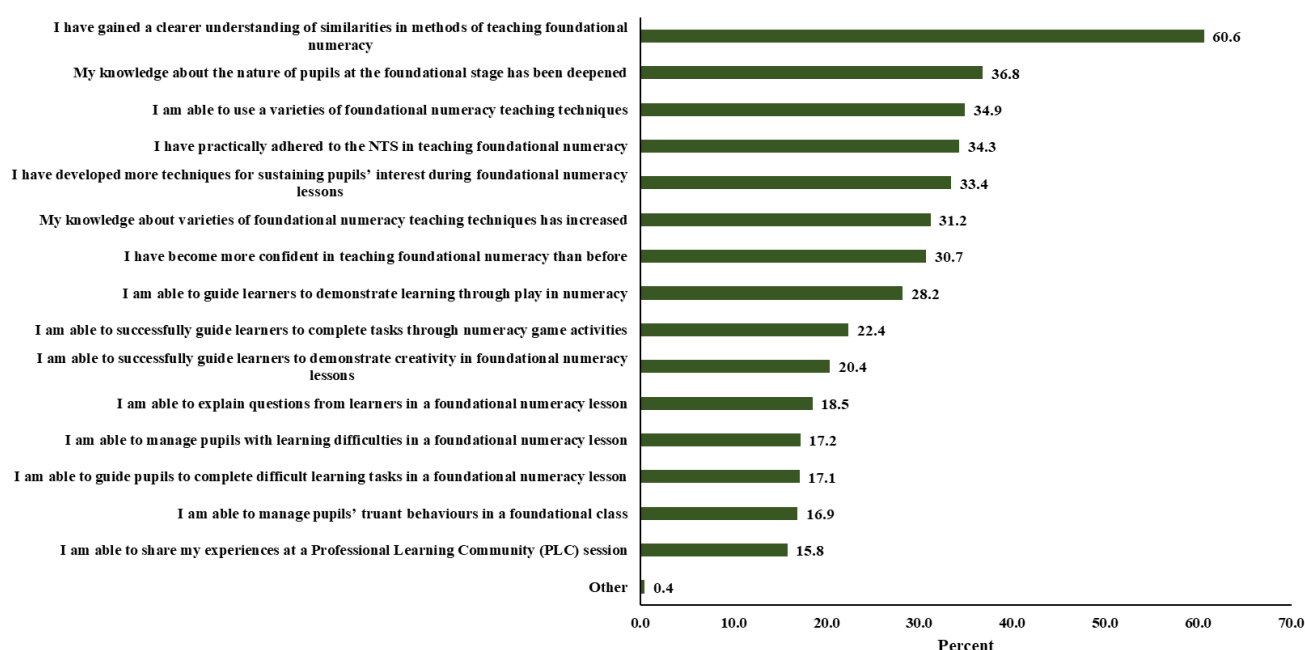


Figure 15: Student teachers' reported reasons for why STS prepared them for effective teaching of foundational numeracy

Note: This was a multiple-response question; the total percentage may exceed 100%.

### 4.3 Competencies Development in Foundational Literacy and Numeracy

#### 4.3.1 Competencies in lesson planning, lesson delivery and instructional practice

More than 80% of student teachers self-reported high or very high competency across all the indicators of foundational literacy and numeracy (Figure 16). The competency rates were similar across self-confidence in teaching, preparation of lesson plan and lesson presentation for foundational literacy and numeracy. Student teachers expressed strong confidence in lesson planning, lesson delivery and instructional practice for both subject, indicating a positive perception of their professional readiness.

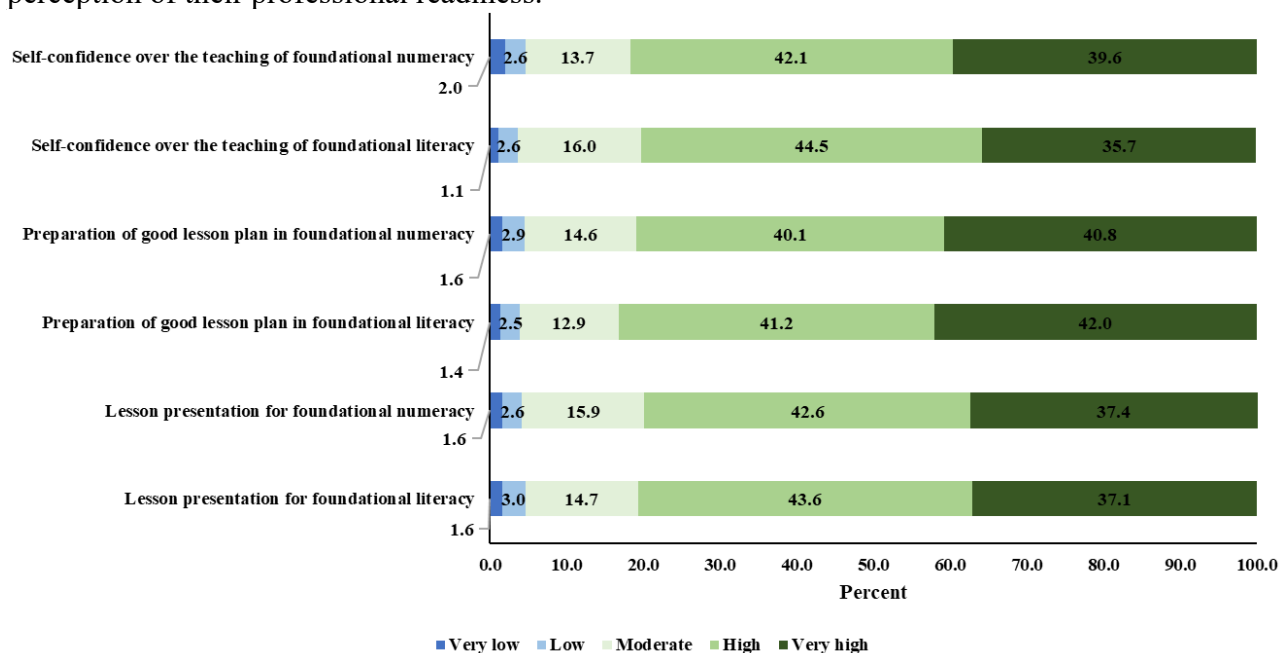


Figure 16: Student teachers' self-rated competencies

#### 4.3.2 Competency in selecting appropriate teaching strategies for foundational literacy

Figure 17 shows student teachers' self-reported competency in selecting appropriate teaching strategies for foundational literacy. Reported competence in selecting the various foundational literacy teaching strategies for lessons was modest, with no single strategy exceeding 60.0% self-reporting. Slightly more than half of the student teachers reported competency in selecting strategies for teaching listening (phonemic awareness) and writing and reading (concept of print), but slightly less proportions were comfortable with strategies for listening and reading (alphabetic knowledge and phonics), reading (vocabulary), reading (comprehension) and especially reading (fluency).

Confidence declined as instructional demands become more complex, indicating a need for more targeted training and support in advanced literacy strategies.

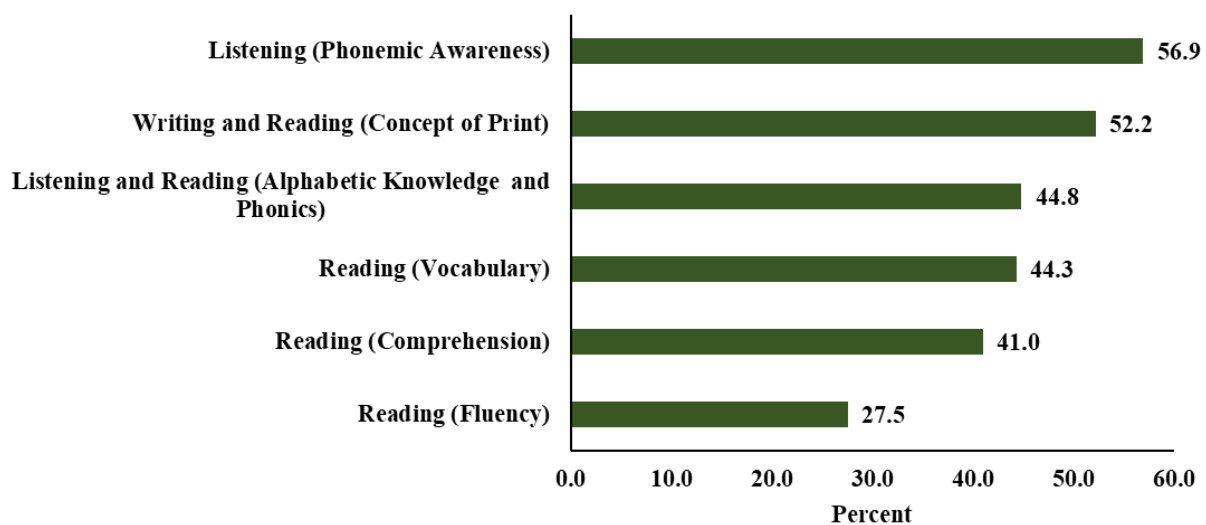


Figure 17: Self-reported competency in selecting appropriate teaching strategies for foundational literacy

*Note: This was a multiple-response question; the total percentage may exceed 100%.*

A multinomial logistic regression technique was used to identify the factors that significantly influenced student teachers' self-reported competence in selecting appropriate teaching strategies for foundational literacy. The results, presented in Table 5, show that the sex of the student teacher, their programme of study, the sex composition of the college and mentoring university were significantly associated with competence in selecting appropriate teaching strategies for foundational literacy. Male student teachers generally felt more competent than females, but females in all-female colleges reported higher competence than those in mixed colleges. Student teachers studying Early Grade or Early Childhood Education and those mentored by the University of Ghana, had significantly higher odds of selecting teaching strategies for foundational literacy (much higher competence) compared to their peers in other programmes or universities. There was, however, no significant difference between student teachers mentored by UoG and KNUST.

Table 5: Predictors of self-reported competence in selecting appropriate teaching strategies for content in foundational literacy. Competent in selecting:

| <b>Predictors</b>                     | <b>3 to 5 strategies vs. 2 or fewer strategies<br/>OR [95% CI]</b> | <b>All strategies vs. 2 or fewer strategies<br/>OR [95% CI]</b> |
|---------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------|
| <b>Sex of respondent</b>              |                                                                    |                                                                 |
| Female                                | 0.61 [0.49, 0.77]**                                                | 0.43 [0.31, 0.58]**                                             |
| Male                                  | 1.00                                                               | 1.00                                                            |
| <b>Programme of study</b>             |                                                                    |                                                                 |
| B. ED Early Grade Education           | 1.22 [0.86, 1.74]                                                  | 1.64 [1.04, 2.61]*                                              |
| B. ED Early Childhood Education       | 1.05 [0.81, 1.37]                                                  | 1.48 [1.06, 2.08]*                                              |
| B. ED Primary Education               | 1.00                                                               | 1.00                                                            |
| <b>Sex composition of the college</b> |                                                                    |                                                                 |
| Female                                | 1.31 [1.03, 1.67]*                                                 | 2.84 [2.03, 3.97]**                                             |
| Mixed                                 | 1.00                                                               | 1.00                                                            |
| <b>Mentoring university</b>           |                                                                    |                                                                 |
| UCC                                   | 0.61 [0.41, 0.91]*                                                 | 0.65 [0.38, 1.11]                                               |
| UoG                                   | 1.15 [0.69, 1.91]                                                  | 2.22 [1.21, 4.09]**                                             |
| UEW                                   | 0.70 [0.48, 1.02]                                                  | 0.63 [0.38, 1.06]                                               |
| KNUST                                 | 1.16 [0.76, 1.77]                                                  | 1.74 [0.99, 3.06]                                               |
| UDS                                   | 1.00                                                               | 1.00                                                            |

\*\*  $p < 0.01$ ; \*  $p < 0.05$ . CI – Confidence Interval

#### 4.3.3 Competency in selecting appropriate teaching strategies for foundational numeracy

Figure 18 shows student teachers' self-reported competency in selecting the appropriate teaching strategies in foundational numeracy. Most student teachers (70.5%) reported competency and confidence in selecting strategies for basic number concepts like counting, representation and cardinality, but confidence dropped for more advanced topics: 46.9% for operations and relationships between numbers and 41.8% for fractions and relationships between numbers. Less than one-third of student teachers indicated competence in selecting appropriate teaching strategies for algebra (non-numerical patterns and relationships), geometry and measurement (lines and shapes), geometry and measurement (telling positions of objects in space), data handling and geometry and measurement (measurements-length, mass, capacity).

Thus, student teachers were most confident in selecting instructional strategies for basic number concepts, but their competence declines as numeracy concepts become more complex. While moderate levels of confidence were observed for number operations and fractions, substantially fewer student teachers felt capable of selecting appropriate strategies for algebra, geometry, measurement and data handling, indicating the need for stronger instructional support in these areas.

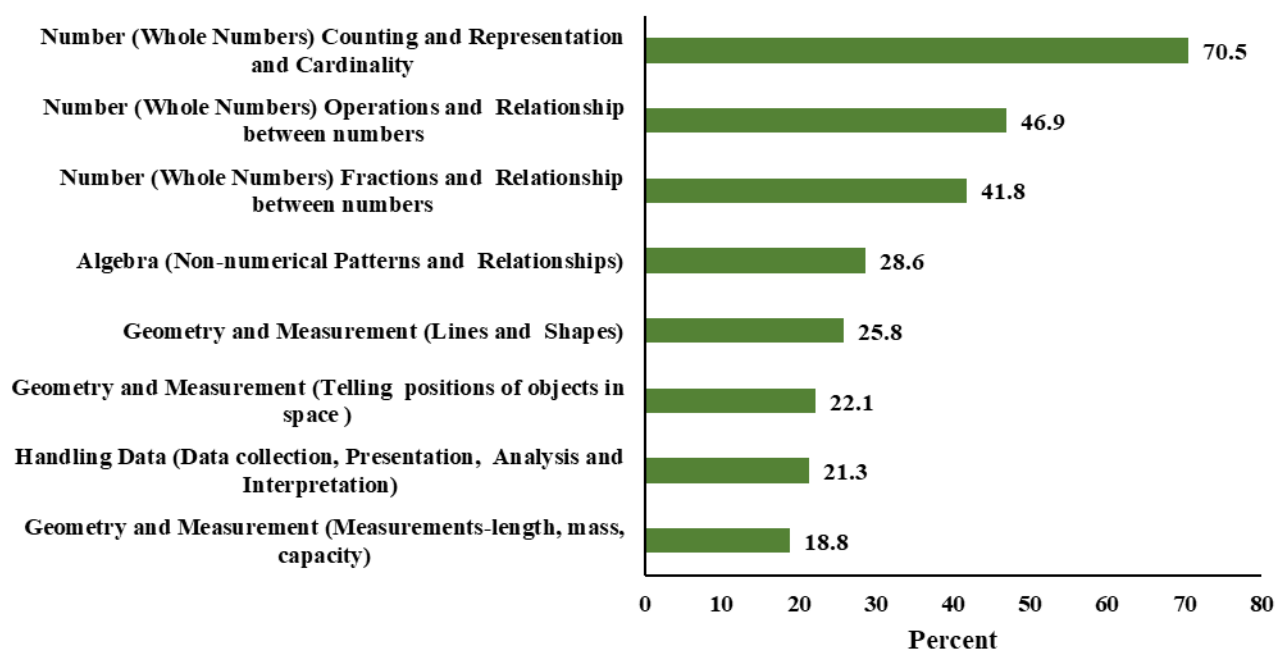


Figure 18: Competency in selecting the appropriate teaching strategies in foundational numeracy

*Note: This was a multiple-response question; the total percentage may exceed 100%.*

Table 6 shows the predictors of self-reported competence in selecting appropriate teaching strategies for content in foundational numeracy. It shows that student teachers' confidence in selecting foundational numeracy strategies was influenced by their sex, college type (sex composition of the college), mentoring university and region. Females were generally less confident than males, but those all-female colleges reported higher confidence. Student teachers mentored by UCC and UEW were less likely to feel highly competent compared to those mentored by UDS. No significant differences in competence were found among student teachers in colleges mentored by UDS, KNUST and UoG.

Altogether, these findings suggest that supportive environments and institutional context played key roles in shaping student teachers' competence in foundational numeracy.

Table 6: Predictors of self-reported competence in selecting appropriate teaching strategies for content in foundational numeracy. Competent in selecting:

| <b>Predictors</b>                     | <b>4 to 7 strategies vs. 3 or fewer strategies<br/>OR [95% CI]</b> | <b>All strategies vs. 3 or fewer strategies<br/>OR [95% CI]</b> |
|---------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------|
| <b>Sex of respondent</b>              |                                                                    |                                                                 |
| Female                                | 0.46 [0.36, 0.59]**                                                | 0.34 [0.24, 0.50]**                                             |
| Male                                  | 1.00                                                               | 1.00                                                            |
| <b>Mentoring university</b>           |                                                                    |                                                                 |
| UCC                                   | 0.35 [0.21, 0.59]**                                                | 0.38 [0.18, 0.80]*                                              |
| UoG                                   | 0.49 [0.23, 1.04]                                                  | 1.34 [0.46, 3.91]                                               |
| UEW                                   | 0.55 [0.33, 0.92]*                                                 | 0.70 [0.34, 1.43]                                               |
| KNUST                                 | 0.82 [0.50, 1.37]                                                  | 0.87 [0.42, 1.79]                                               |
| UDS                                   | 1.00                                                               | 1.00                                                            |
| <b>Sex composition of the college</b> |                                                                    |                                                                 |
| Female                                | 1.42 [1.05, 1.91]*                                                 | 2.63 [1.65, 4.19]*                                              |
| Mixed                                 | 1.00                                                               | 1.00                                                            |
| <b>Ecological zone</b>                |                                                                    |                                                                 |
| Coastal                               | 2.05 [1.20, 3.50]**                                                | 0.81 [0.36, 1.81]                                               |
| Forest                                | 1.41 [0.90, 2.20]                                                  | 0.81 [0.43, 1.52]                                               |
| Savannah                              | 1.00                                                               | 1.00                                                            |

\*\*  $p < 0.01$ ; \*  $p < 0.05$ . CI – Confidence Interval

#### 4.3.4 Self-reported competency in choosing the appropriate teaching and learning resources for different content in the foundational literacy and numeracy syllabus

Figure 19 shows the percentage distribution of student teachers and their self-reported competency in choosing the appropriate teaching and learning resources for different content in the foundational literacy and numeracy. A substantial proportion of student teachers reported high or very high competence in selecting the appropriate teaching and learning resources for various content areas within the foundational literacy (79.5%) and numeracy (76.8%) syllabi. Similarly, a higher proportion reported the same for effective foundational classroom management (79.2%), meeting the teaching and learning needs of foundational learners (79.6%) and actively engaging learners to sustain their interest in the foundational class (81.9%).

These self-reported levels of competence suggest that student teachers perceive themselves as well-prepared for key aspects of foundational classroom practice. Their confidence in selecting appropriate teaching and learning resources, managing classroom environments, responding to learners' needs and sustaining learner engagement indicates that they believe their training has equipped them with essential instructional skills. This perceived readiness may translate into positive teaching behaviours as they transition into practice. However, because these results are based on self-assessment, further observation or

performance-based evaluation would be necessary to verify whether the reported competence aligns with actual teaching effectiveness.

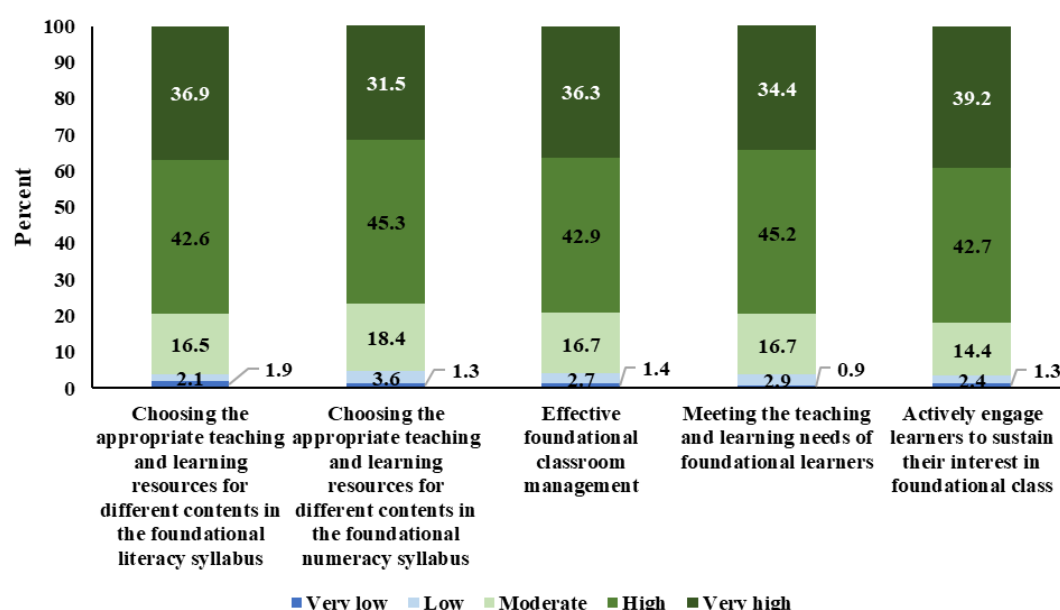


Figure 19: Self-reported competency in choosing the appropriate teaching and learning resources for different content in the foundational literacy and numeracy

## 4.4 National Teachers Standards (NTS)

### 4.4.1 Awareness of the NTS

Figure 20 shows that across all indicators used to assess awareness of the NTS, about 80% of student teachers reported a high or very high level of awareness. Thus, student teachers perceive themselves as highly aware of the NTS. However, because the results are based on self-reports and relate to awareness rather than comprehension or practical application, it cannot be taken for granted that they reflect actual deep understanding of the standards or the ability to implement them in practice. Further inquiry would be needed to determine how this reported awareness translates into actual teaching behaviour and competence.

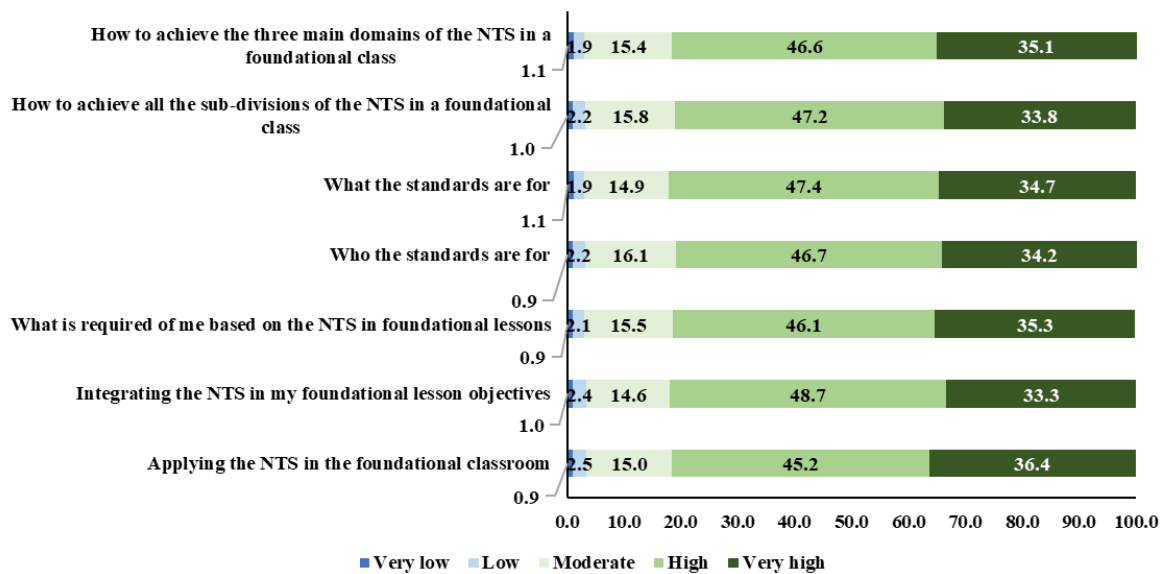


Figure 20: Student teachers' self-reported awareness of the NTS

#### 4.4.2 Understanding of NTS

Student teachers' self-reported understanding of the NTS is presented in Figure 21. Student teachers reported a very high level of understanding of the NTS, with more than 80% rating themselves as having a high or very high level of understanding across all the NTS indicators. It is apparent that student teachers perceived themselves as having deep understanding of the NTS. This suggests that the standards have been effectively introduced within their training programmes. However, because these results are self-reported, they may reflect confidence rather than demonstrated mastery and further evidence would be needed to confirm the depth and accuracy of this understanding.

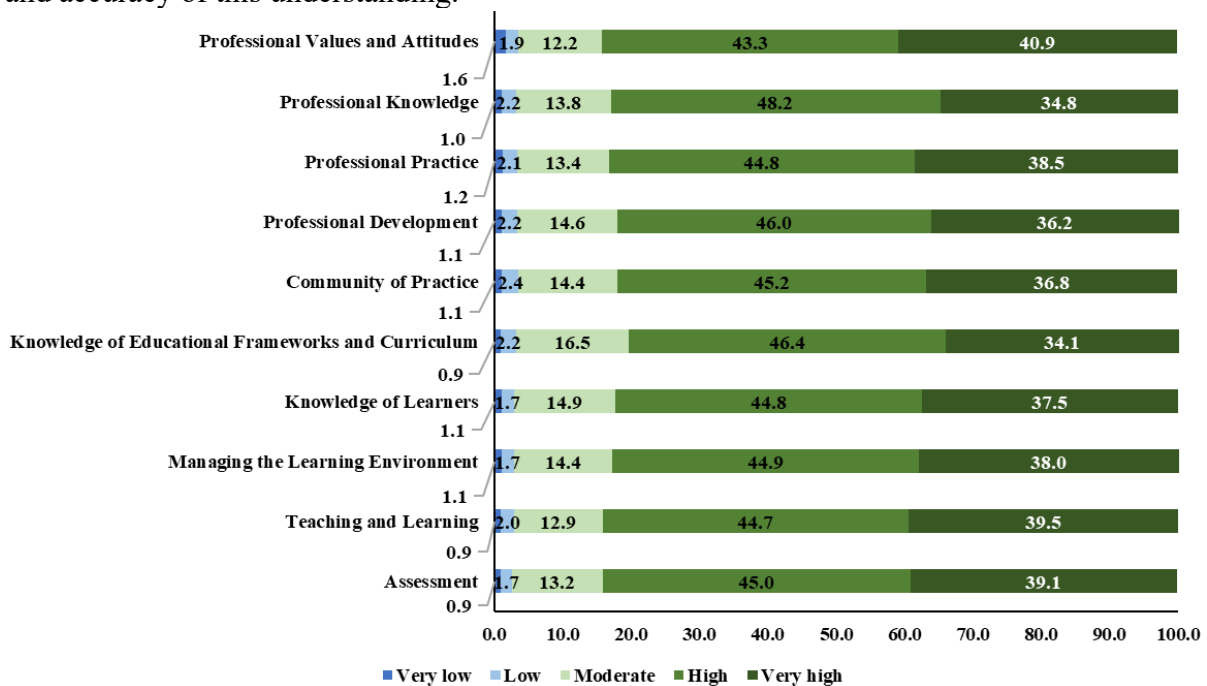


Figure 21: Student teachers' self-reported understanding of the NTS

#### 4.4.3 Adherence to NTS

Figure 22 presents the percentage distribution of student teachers by their self-reported adherence to the NTS during the STS. Over 80% of student teachers rated their adherence to all of the NTS indicators as high or very high. This suggests that student teachers are confident that they consistently apply the professional values, knowledge and practices expected of them during the STS. It clearly indicates a positive level of confidence and alignment with professional standards. Such perceived adherence may support smoother transitions into full classroom responsibilities and contribute to the development of professional identity and behaviour. However, separate studies would be required to validate this self-perception and confirm the extent to which these standards are demonstrated in real teaching contexts.

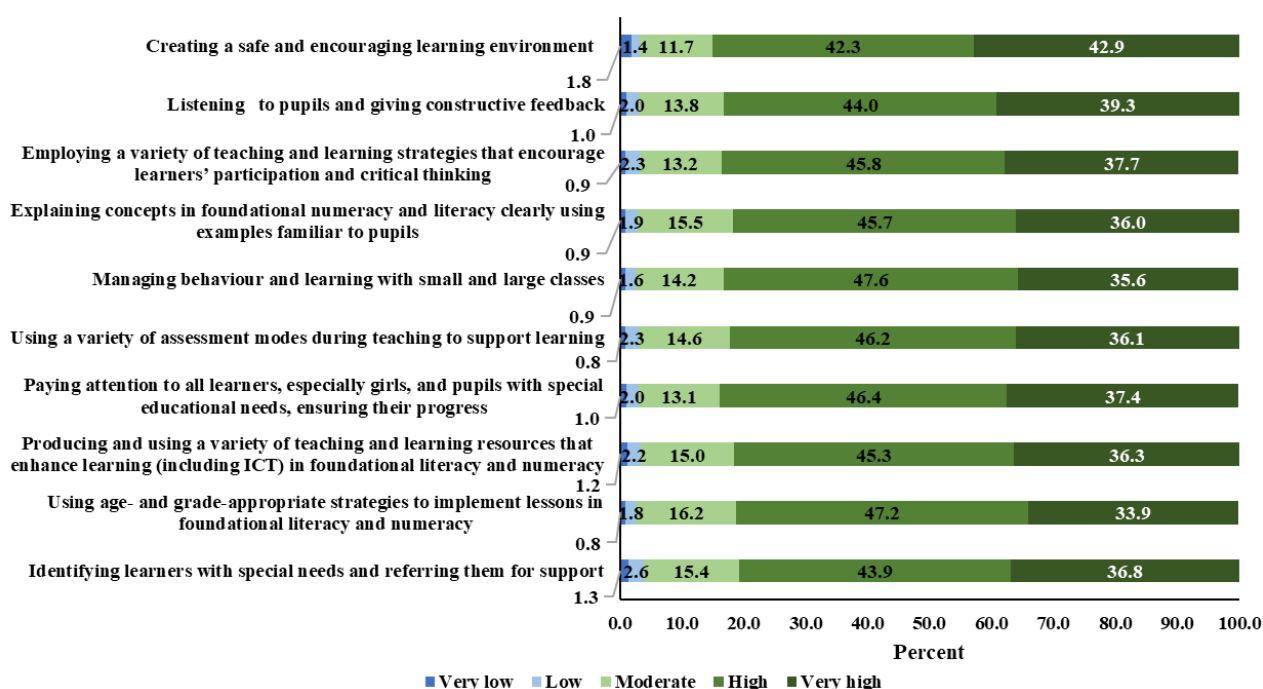


Figure 22: Student teachers' self-reported adherence to the NTS

#### 4.5 Impactful STS

Figure 23 presents the percentage distribution of student teachers by their self-rating of the impact of STS. More than 80% of student teachers self-reported that the STS impact in the five different ways interrogated was either high or very high. In other words, most student teachers believed that the STS offered them practical exposure to professional values, made them apply their professional knowledge, gave them practical experience with the FLN curriculum, the opportunity to learn more about foundational learners and the opportunity to build skills in various assessment strategies for FLN. It indicates that the STS is likely providing meaningful all-round opportunities for student teachers to apply theory in practice, develop confidence and engage with real classroom environments.

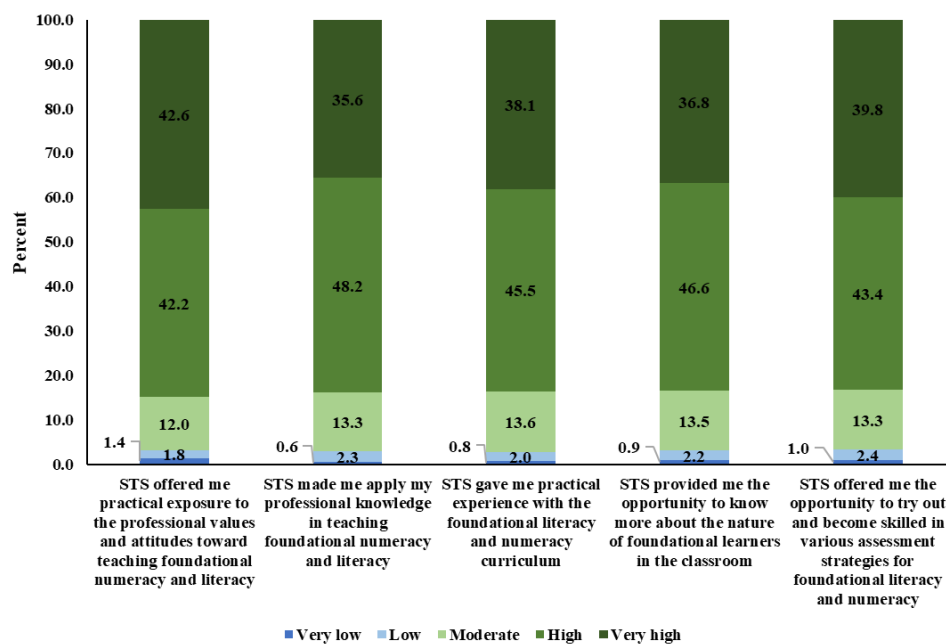


Figure 23: Student teachers' self-rating of the impact of STS

#### 4.6 Motivation Towards Professional FLN Teaching

The percentage distribution of student teachers by their reported motivation towards professional teaching is displayed in Figure 24. Generally, student teachers demonstrated a positive disposition toward the teaching profession. Across all the four reasons that motivate student teachers to pursue professional teaching, at least 85% reported a high or very high level of motivation. This reflects a very positive inclination or attachment by student teachers to the teaching profession even at this stage of their training. While this may bode well for the teaching profession, it will be important to investigate over time if this reported level of motivation translates into long-term commitment and devotion to the profession as they encounter the realities of classroom practice and other demands of the profession.

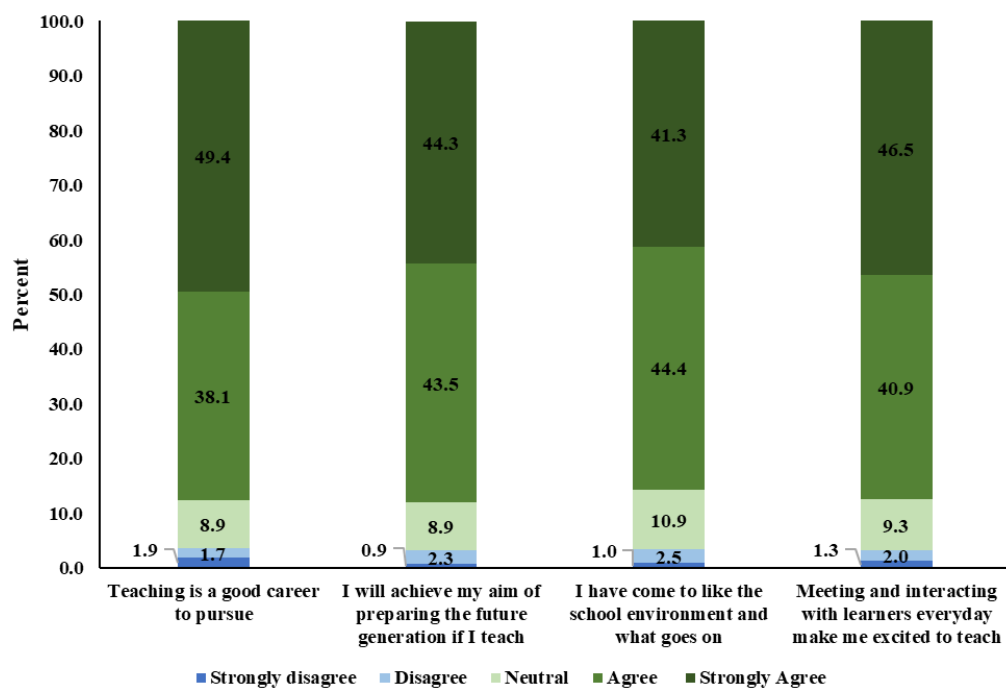


Figure 24: Student teachers' motivation towards professional teaching

#### 4.7 Professional Readiness to Teach FLN

Figure 25 shows a high level of self-reported preparedness and positivity towards the teaching profession. Over 80.0% of student teachers, across all indicators, reported that they were to a large or very large extent ready to teach foundational literacy and numeracy. This high proportion suggests a strong sense of confidence in their preparation and ability to handle classroom responsibilities at the foundational level. The perception may reflect the positive influence of their training, exposure to instructional strategies and mentoring experiences. However, because it is self-reported, it may indicate perceived confidence rather than demonstrated competence. Additional evidence from classroom performance, teaching observations, or learner outcomes would be needed to validate whether this perceived readiness translates into effective instructional practice.

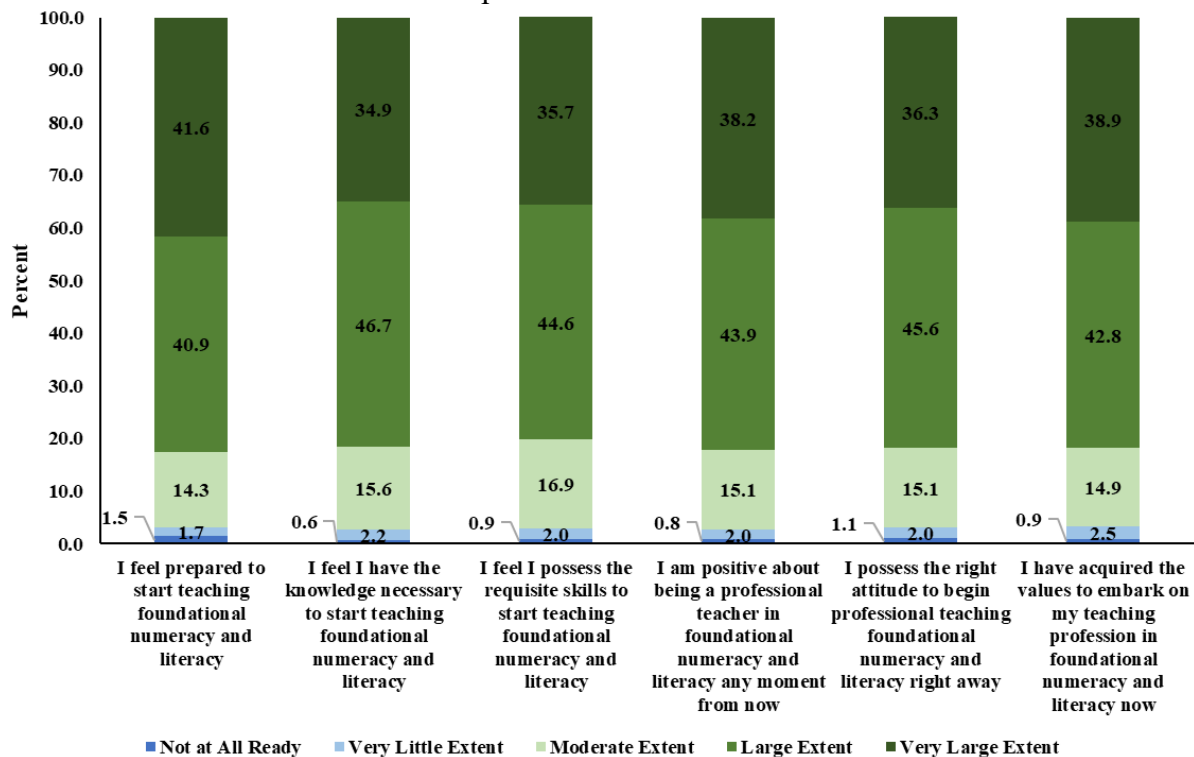


Figure 25: Student teacher's professional readiness to teach foundational literacy and numeracy

#### 4.8 Content Knowledge in FLN

Overall, student teachers rated their content knowledge in foundational literacy very highly. As illustrated in Figure 26, about 85.0% of student teachers rated their content knowledge in foundational literacy as high or very high. The finding indicates a generally strong level of self-perceived preparedness and reflects positively on their training as most student teachers feel confident in handling core literacy concepts. However, there is the need for objective measures of competence to verify if the perceived knowledge aligns with actual instructional capacity in classroom settings.

Similarly, between 80.0% and 85.0% of student teachers reported that their content knowledge in foundational numeracy was high or very high (Figure 27). The consistently high self-ratings indicate a strong level of confidence in their ability to teach basic mathematical concepts. This suggests that their training has effectively built a solid understanding of core numeracy content,

however, further validation through performance-based assessments or classroom observations would be necessary to confirm whether this confidence translates into effective instructional practice.

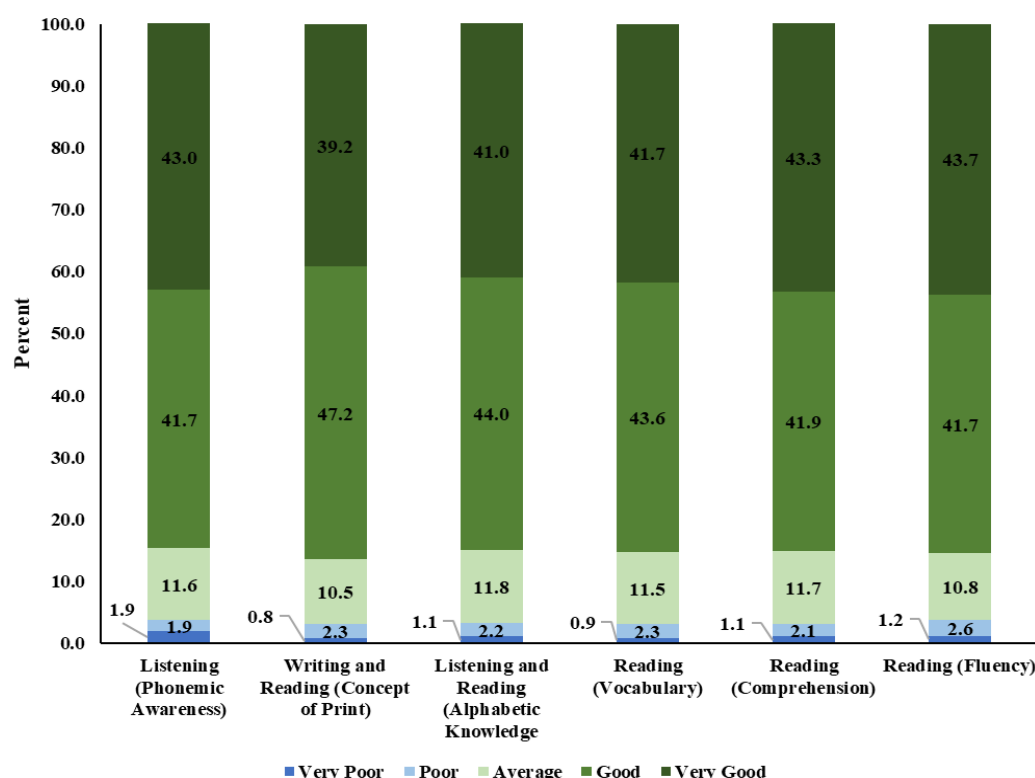


Figure 26: Student teacher's self-rated content knowledge in foundational literacy

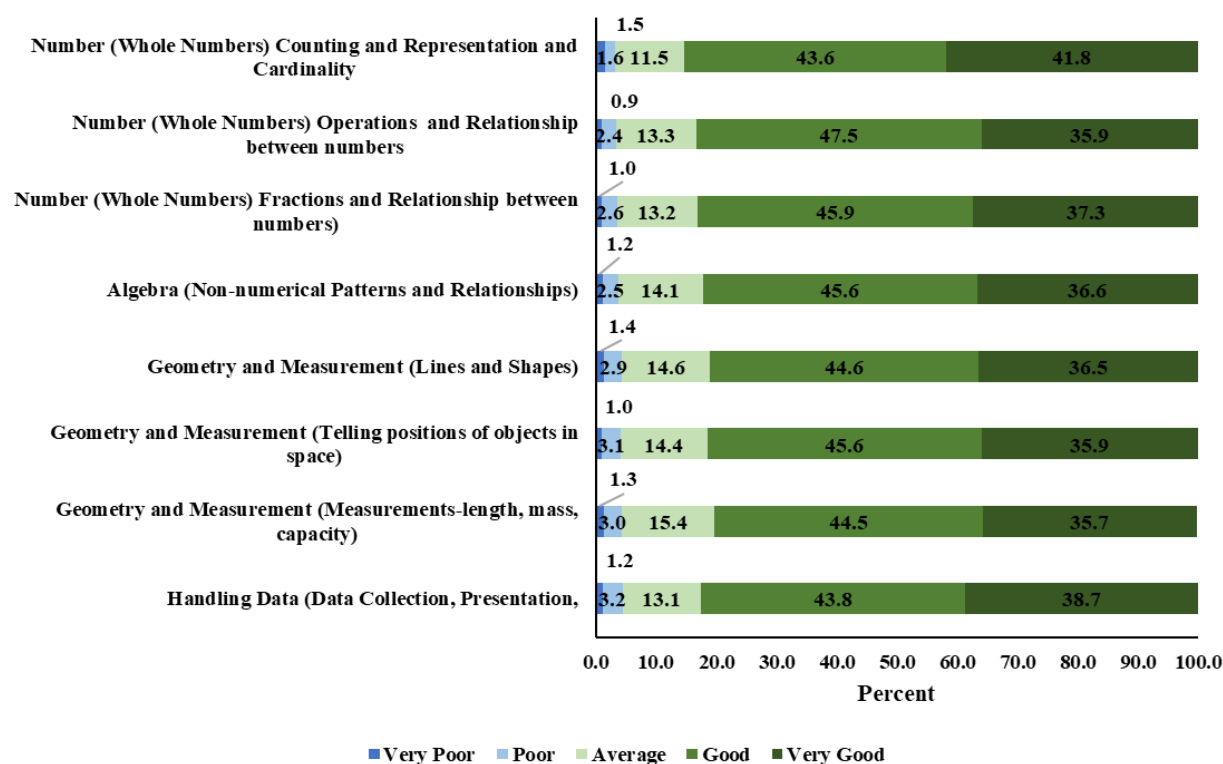


Figure 27: Student teacher's self-rated content knowledge in foundational numeracy

#### 4.9 Pedagogical Knowledge in FLN

Figure 28 presents the the self-rated pedagogical knowledge in foundational literacy and numeracy by student teachers. More than three-quarters of student teachers, across all the indicators of pedagogical knowledge, rated themselves high or very high. This, combined with the similarly strong ratings of student teachers' content knowledge, suggests that student teachers perceive themselves as well prepared both in what to teach and how to teach it. The apparent alignment between pedagogical competence and subject-matter understanding is encouraging, as effective foundational instruction requires the integration of both. However, objective measures and classroom-based evaluations would be required to confirm if the perceived strengths in content knowledge and pedagogy translate into actual instructional effectiveness.

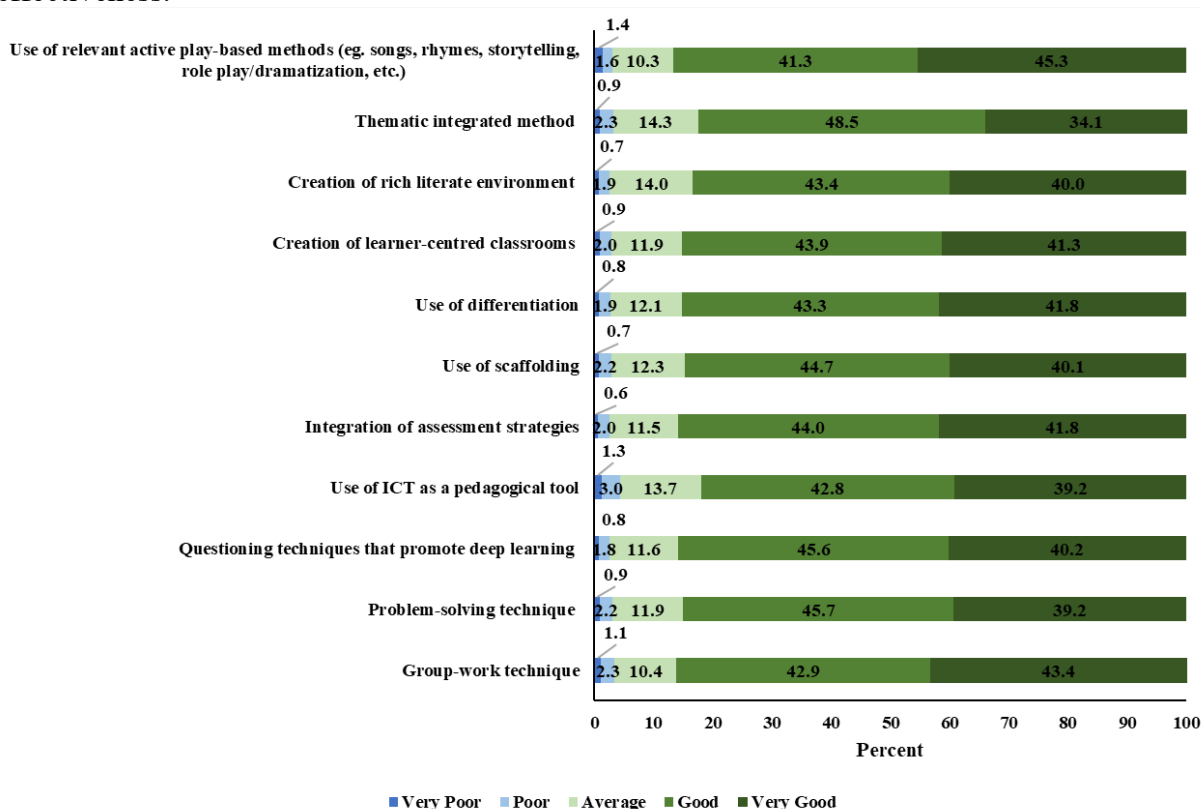


Figure 28: Student teacher's self-rated pedagogical knowledge in foundational literacy and numeracy

#### 4.10 Pedagogical Content Knowledge in FLN

The distribution of student teachers' self-rated level of pedagogical content knowledge in foundational literacy and numeracy is presented in Figure 29. It shows that more than 80.0% of student teachers, across all the indicators, rated themselves as high or very high. This implies that most student teachers feel adequately prepared to deliver foundational concepts and apply appropriate instructional strategies in the classroom. The convergence of high ratings in what they know and how to teach reflects perceived readiness to support early learners effectively. But, because these results are based on self-assessment, it is essential to verify through independent evaluations, practical teaching performance and ongoing mentorship to ensure that this confidence is matched by demonstrated competence in real teaching contexts.

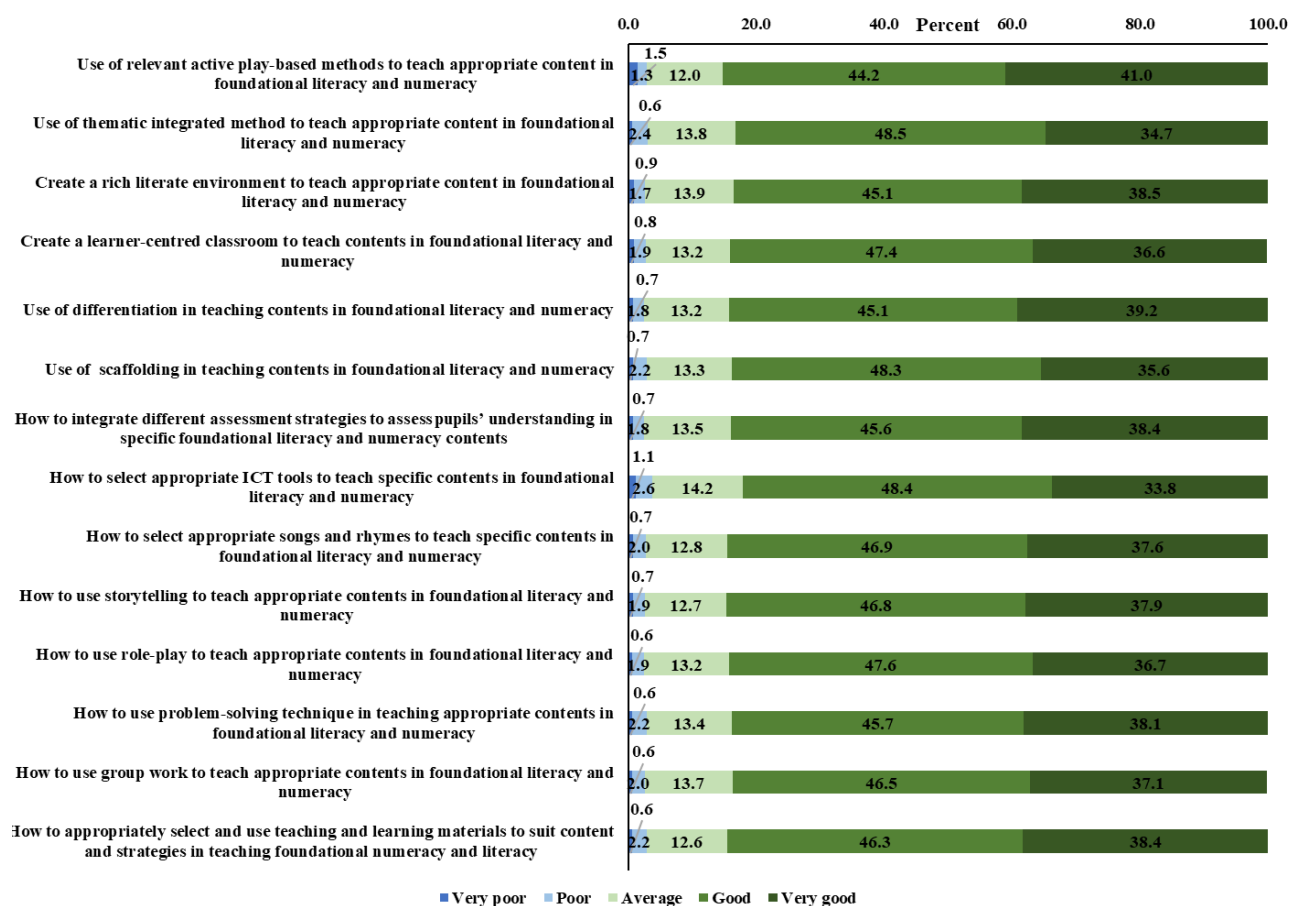


Figure 29: Student teacher's self-rated pedagogical content knowledge in foundational literacy and numeracy

#### 4.11 Mentors' Levels of Adherence and Understanding of the NTS and Student Teachers' Adherence to the NTS

To answer the research question on how mentors' levels of understanding and adherence to the NTS predict student teachers' level of adherence to the NTS, factor analysis was used to create a score for student-teachers' rating of their mentors' levels of understanding and adherence to the NTS. The first factor loading (Table AI in annex 1) captured 70.4% and 71.2% of the variation in overall understanding and adherence to the NTS, respectively. The direction of the first factor loadings also indicates that they capture overall levels of understanding and adherence to the NTS. The factor scores were categorised into quintiles.

Factor analysis was also used to generate a score for student teachers' self-rated level of adherence to the NTS. The factor scores from the first factor loadings (Table A2 in annex 1), which captured 70.2% of the total variation in student teachers' adherence, were categorised into tertiles to reflect low, moderate and high adherence.

Multinomial logistic regression was used to explore the associative effects of mentors' understanding and adherence to the NTS and student teachers' level of adherence to the NTS, while accounting for important background characteristics. Table 7 shows the estimated odds

ratios and their corresponding 95% confidence interval for the predictors of student teachers' level of adherence to the NTS.

The findings indicate that once the mentor's understanding and adherence to the NTS are considered, the background characteristics of student teachers no longer play a significant role in their adherence to the NTS. Student teachers who rated their mentors' understanding of the standards as very poor, poor, or average were less likely to report high adherence to the NTS than those who rated their mentors' understanding as high. A similar pattern was observed for adherence, where student teachers who perceived their mentors' adherence to the NTS as very poor, poor, or average were also significantly less likely to report high adherence compared to those who viewed their mentors as having high adherence.

The results reveal that mentors play a decisive role in shaping student teachers' adherence to the National Teachers Standards (NTS). When mentors demonstrate a strong understanding and consistent application of the standards, student teachers are more likely to internalise and apply them as well. Conversely, when mentors exhibit weak or moderate understanding or adherence, student teachers' adherence drops significantly, regardless of their personal background characteristics. This indicates that the quality of mentorship, rather than the student teachers' personal backgrounds, is the decisive influence on their professional practice and alignment with the NTS.

Table 7: Predictors of student teachers' level of adherence to NTS

| Predictors                                        | Moderate adherence vs. low adherence<br>OR [95% CI] | High adherence vs. low adherence<br>OR [95% CI] |
|---------------------------------------------------|-----------------------------------------------------|-------------------------------------------------|
| <b>Mentor's level of understanding of the NTS</b> |                                                     |                                                 |
| Very poor                                         | 0.13 [0.06, 0.25]**                                 | 0.02 [0.01, 0.04]**                             |
| Poor                                              | 0.69 [0.36, 1.33]                                   | 0.04 [0.02, 0.09]**                             |
| Average                                           | 0.86 [0.45, 1.66]                                   | 0.16 [0.09, 0.31]**                             |
| Good                                              | 1.46 [0.73, 2.90]                                   | 0.58 [0.30, 1.11]                               |
| Very good                                         | 1.00                                                | 1.00                                            |
| <b>Mentor's level of adherence to NTS</b>         |                                                     |                                                 |
| Very poor                                         | 0.20 [0.10, 0.37]**                                 | 0.06 [0.03, 0.13]**                             |
| Poor                                              | 0.71 [0.38, 1.31]                                   | 0.14 [0.07, 0.27]**                             |
| Average                                           | 0.76 [0.41, 1.41]                                   | 0.22 [0.12, 0.40]**                             |
| Good                                              | 0.94 [0.49, 1.79]                                   | 0.59 [0.32, 1.11]                               |
| Very good                                         | 1.00                                                | 1.00                                            |

#### 4.12 Effects of STS Practicum and STS Mentorship

##### 4.12.1 Effects of STS practicum on student teachers' professional development

Table 8 presents the reported effects of the STS practicum on various aspects of student teachers' professional development. The findings reflect student teachers' self-reported opinions of how the practicum has influenced their competencies, skills and knowledge areas after their on-field experiences.

The STS practicum had a strong positive impact on student teachers' professional development. It enabled them to apply and deepen their content, pedagogical and pedagogical content knowledge in real classroom settings. Through hands-on experience, student teachers developed essential skills and competencies for managing both curricular and extra-curricular activities, which cannot be fully acquired through college-based learning alone. The practicum provided opportunities to put theoretical knowledge into practice, thereby enhancing their readiness to teach foundational literacy and numeracy effectively.

The strong positive predictive relationship confirms that the practicum has enabled student teachers to demonstrate their understanding of the subject matter in foundational literacy and numeracy and the corresponding teaching approaches and strategies, which they may have already known in theory, but did not have the opportunity to practically implement them.

These findings augment those of the lesson observation phase, where student teachers were given the platform to demonstrate their content knowledge, pedagogical knowledge and pedagogical content knowledge in a real classroom.

Table 8 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% | CI 97.5% |
|------------------------------------------------|---------------------|-----------------|----------------------------|--------------------------|----------|---------|----------|
| STS_Practicum -> Content Knowledge             | 0.561               | 0.561           | 0.020                      | 27.958                   | 0.000*   | 0.521   | 0.599    |
| STS_Practicum -> Pedagogical Content Knowledge | 0.526               | 0.527           | 0.021                      | 25.179                   | 0.000*   | 0.486   | 0.568    |
| STS_Practicum -> Pedagogical Knowledge         | 0.518               | 0.518           | 0.021                      | 24.542                   | 0.000*   | 0.475   | 0.558    |
| STS_Practicum -> Competencies Development      | 0.648               | 0.648           | 0.020                      | 32.890                   | 0.000*   | 0.607   | 0.686    |
| STS_Practicum -> Skills Development            | 0.613               | 0.613           | 0.020                      | 31.053                   | 0.000*   | 0.574   | 0.650    |

\* $p \leq 0.01$

#### 4.12.2 Effects of STS mentorship on student teachers' professional development

Table 9 presents the analysis of the effect of STS mentorship on student teachers' professional development. The results indicate that STS mentorship had a strong positive influence on student teachers' professional development. It enhanced their competencies in lesson planning and notes preparation, selection of appropriate teaching and learning resources, teaching strategies, as well as key skills like classroom management, time management and remedial teaching.

The mentor interactions clearly enabled student teachers to apply their college learning in real classroom settings with support to enhance their content knowledge, pedagogical knowledge and pedagogical content knowledge, as well as deepen their effective teaching and learning strategies in FLN.

Table 9 Effect of STS mentorship on students' professional development

| Relationships                                   | Original sample (O) | Sample mean (M) | Standard deviation (STDEV) | T statistics ( O/STDEV ) | P values | CI 2.5% | CI 97.5% |
|-------------------------------------------------|---------------------|-----------------|----------------------------|--------------------------|----------|---------|----------|
| STS_Mentorship -> Content Knowledge             | 0.602               | 0.602           | 0.018                      | 34.080                   | 0.000*   | 0.568   | 0.636    |
| STS_Mentorship -> Pedagogical Content Knowledge | 0.554               | 0.554           | 0.018                      | 30.439                   | 0.000*   | 0.518   | 0.589    |
| STS_Mentorship -> Pedagogical Knowledge         | 0.569               | 0.569           | 0.018                      | 31.071                   | 0.000*   | 0.533   | 0.605    |
| STS_Mentorship -> Competencies Development      | 0.710               | 0.711           | 0.016                      | 44.597                   | 0.000*   | 0.679   | 0.742    |
| STS_Mentorship -> Skills Development            | 0.656               | 0.656           | 0.017                      | 39.320                   | 0.000*   | 0.624   | 0.688    |

\* $p \leq 0.01$

#### 4.12.3 Effects of STS Practicum on NTS understanding, NTS adherence and STS mentorship

Table 10 presents the results on student teachers' responses to the effects of the STS practicum on their understanding of the National Teachers Standards (NTS), adherence to the NTS and engagement in STS mentorship.

Based on the results, it is apparent that the STS practicum significantly strengthened student teachers' engagement with mentors, underscoring the role of mentorship as a core part their professional development. Participation in the practicum was closely linked to their engagement with mentors. The predictive results also demonstrate that the practicum influenced student teachers' understanding of the NTS, suggesting that practical teaching experiences enabled them to become more familiar with the expectations outlined in the standards and also aided in assessing their own understanding of the teaching standards.

Thus, the reported effect of the STS practicum on adherence to the NTS was also strongly positive. This suggests that student teachers perceived the practicum as a platform to gauge their understanding of the NTS as well as an opportunity to demonstrate the understanding by adhering to the NTS in their teaching practices in an FLN class.

These findings highlight the value of the STS practicum in supporting mentorship while increasing student teachers' familiarity with the NTS and their ability to demonstrate adherence to the standards.

Table 10 Effects of STS Practicum on NTS understanding, NTS adherence and STS mentorship

| Relationships                      | Original sample (O) | Sample mean (M) | Standard deviation (STDEV) | T statistics ( O/STDEV ) | P values | CI 2.5% | CI 97.5% |
|------------------------------------|---------------------|-----------------|----------------------------|--------------------------|----------|---------|----------|
| STS_Practicum -> NTS_Adherence     | 0.593               | 0.593           | 0.020                      | 29.604                   | 0.000*   | 0.553   | 0.631    |
| STS_Practicum -> NTS_Understanding | 0.602               | 0.602           | 0.019                      | 30.922                   | 0.000*   | 0.563   | 0.638    |
| STS_Practicum -> STS_Mentorship    | 0.735               | 0.735           | 0.016                      | 47.204                   | 0.000*   | 0.730   | 0.764    |

\* $p \leq 0.01$

#### 4.12.4 Effects of STS mentorship on student teachers' NTS understanding and NTS adherence

Table 11 presents the summary results of analysis of the effect of STS mentorship on student teachers' understanding and adherence to the NTS. The results show that STS mentorship played a key role in strengthening student teachers' understanding and adherence to the NTS. The responses of student teachers indicate that interactions with mentors helped them grasp better and apply these professional standards in FLN classrooms we, translating theory into practice. This is particularly important since the generic NTS have to be translated into actionable practices in the context of an FLN class. Student teachers were confident that the STS mentorship positively influenced their adherence to the NTS, affirming that mentorship played a key role in shaping their teaching practices while benchmarking them against the professional standards.

These findings highlight the importance of mentorship in strengthening awareness, understanding and application of the NTS and their translation into actual FLN classroom practice.

Table 11 Effects of STS mentorship on student teachers' NTS understanding and NTS adherence

| Relationships                          | Original<br>sample<br>(O) | Sample<br>mean<br>(M) | Standard<br>deviation<br>(STDEV) | T statistics<br>( O/STDEV ) | P<br>values | CI<br>2.5% | 97.5% |
|----------------------------------------|---------------------------|-----------------------|----------------------------------|-----------------------------|-------------|------------|-------|
| STS_Mentorship -><br>NTS_Adherence     | 0.138                     | 0.138                 | 0.016                            | 8.869                       | 0.000*      | 0.107      | 0.169 |
| STS_Mentorship -><br>NTS_Understanding | 0.641                     | 0.641                 | 0.017                            | 38.406                      | 0.000*      | 0.608      | 0.673 |

\* $p \leq 0.01$

#### 4.13 Determinants of Impactful STS

As presented in Table 12, multiple factors contributed to how student teachers rated the effectiveness of their STS practicum.

The analysis identified several key factors that contribute to an impactful STS experience. Notably, student teachers' NTS understanding and adherence had the strongest positive influence on how impactful they found the STS practicum. When student teachers aligned their teaching practices with the NTS, they perceived the STS experience as impactful.

Additionally, the development of skills, pedagogical knowledge, competencies and content knowledge in FLN were significant contributors to shaping the positive impact of the STS experience. Student teachers who had opportunities to exhibit and improve their teaching strategies and general classroom management skills during the practicum reported greater confidence and motivation to teach.

The affordance of STS towards the development of such school-based competencies encompassing both curricular and extra-curricular activities, lead to an innate appreciation by student teachers of what competencies are expected of them in a real school environment. This prepares them for what to expect in the teaching profession. Additionally, content knowledge has the propensity to influence the confidence of student teachers, because even professional teachers who possess good content knowledge, tend to be more confident before their learners and are able to provide them with the requisite knowledge. Thus, if STS provides the opportunity for student teachers to assess their own grasp of content knowledge by demonstrating it in FLN and possibly make up for their shortfalls through supervision and mentorship, they view STS practicum as impactful.

Conversely, pedagogical knowledge, pedagogical content knowledge and skills development alone did not significantly determine the overall impact of the STS practicum. Limited classroom exposure and opportunities for experimentation reported in the earlier observation phase and insufficient time allocated to student teachers to practice may have reduced the perceived value of these aspects, even though some marginal gains may have accrued. As a result, student teachers' appreciation of the impact of the STS on their skills acquisition was moderate when opportunities for hands-on practice were lacking.

Table 12 Determinants of impactful STS

| Relationships                                     | Original<br>sample<br>(O) | Sample<br>mean<br>(M) | Standard<br>deviation<br>(STDEV) | T statistics<br>( O/STDEV ) | P<br>values | CI<br>2.5% | 97.5% |
|---------------------------------------------------|---------------------------|-----------------------|----------------------------------|-----------------------------|-------------|------------|-------|
| Content Knowledge -<br>> STS_Impact               | 0.228                     | 0.227                 | 0.033                            | 6.926                       | 0.000*      | 0.163      | 0.291 |
| Pedagogical Content<br>Knowledge -><br>STS_Impact | 0.038                     | 0.039                 | 0.027                            | 1.415                       | 0.157       | -0.013     | 0.094 |
| Pedagogical<br>Knowledge -><br>STS_Impact         | 0.035                     | 0.035                 | 0.032                            | 1.103                       | 0.270       | -0.028     | 0.097 |
| Competencies<br>Development-><br>STS_Impact       | 0.066                     | 0.066                 | 0.021                            | 3.065                       | 0.002*      | 0.025      | 0.108 |
| Skills Development -<br>> STS_Impact              | 0.032                     | 0.033                 | 0.26                             | 1.246                       | 0.213       | -0.017     | 0.084 |
| NTS_Adherence -><br>STS_Impact                    | 0.442                     | 0.440                 | 0.031                            | 14.125                      | 0.000*      | 0.379      | 0.501 |
| NTS_Understanding -<br>> STS_Impact               | 0.107                     | 0.106                 | 0.030                            | 3.607                       | 0.000*      | 0.049      | 0.166 |

\* $p \leq 0.01$

#### 4.14 Effects of Impactful STS

Table 13 shows that an impactful STS experience significantly increases student teachers' motivation and readiness to teach FLN. The positive predictive effect suggests that student teachers who viewed the STS experience as impactful are highly motivated and more prepared for classroom realities and professional teaching in FLN.

The results also reveal a strong link between motivation toward FLN teaching and professional readiness to teach FLN. Motivation provides the inner drive and commitment needed to engage with the demanding nature of FLN instruction, while readiness encompasses the practical competence, confidence and pedagogical preparation required to deliver effective early-grade teaching. Highly motivated student teachers are more likely to invest in developing specialised skills and knowledge for FLN instruction. Motivated teachers demonstrate greater persistence even when working with struggling learners, show enthusiasm for learner-centred FLN strategies and actively seek professional learning opportunities that strengthen their capacity. This heightened engagement leads to greater confidence and competence to handle differentiated instruction, early literacy and numeracy diagnostics and remedial learning approaches, which are key determinants of success in foundational teaching and learning.

Table 13 Effects of impactful STS

| Variables                                                                                         | Original<br>sample<br>(O) | Sample<br>mean<br>(M) | Standard<br>deviation<br>(STDEV) | T statistics<br>( O/STDEV ) | P<br>values | CI<br>2.5% | 97.5% |
|---------------------------------------------------------------------------------------------------|---------------------------|-----------------------|----------------------------------|-----------------------------|-------------|------------|-------|
| STS_Impact -><br>Motivation<br>Towards<br>Professional<br>Teaching                                | 0.766                     | 0.766                 | 0.013                            | 57.035                      | 0.000*      | 0.739      | 0.792 |
| STS_Impact -><br>Professional<br>Readiness to<br>Teach FLN                                        | 0.545                     | 0.545                 | 0.023                            | 23.765                      | 0.000*      | 0.499      | 0.589 |
| Motivation<br>Towards<br>Professional<br>Teaching -><br>Professional<br>Readiness to<br>Teach FLN | 0.34 8                    | 0.348                 | 0.024                            | 14.746                      | 0.000*      | 0.302      | 0.395 |

\* $p \leq 0.01$

#### 4.15 Qualitative Results

This section presents the qualitative data analysis and results. It covers a deep dive into the various domains of the STS; perceptions and experiences about the STS, preparatory approaches from the CoEs before STS, teaching and learning resources (TLRs), National Teachers Standards (NTS), motivation and readiness to uptake teaching as a profession, benefits of the STS programme and challenges and suggestions to improve the STS. It also provides in-depth evidence to understand the quantitative component of the research.

##### 4.15.1 Theme 1: STS as a Pathway to Practical Competence

This theme highlights positive perceptions about the STS, emphasising its practical importance, but tempered by concerns around implementation quality and mentor capacity. The STS programme is widely valued for its practical significance. Rather than being a purely observational exercise, participants described the STS as the mechanism that enables student teachers to translate pedagogic theory into classroom routines, lesson planning and teaching practice. Participants consistently described STS as a critical stage where theory becomes practice rather than a purely observational exercise, as expressed in the extract below:

*It is a practical arena for us to go and experience the field work practically with the support of mentors and be able to develop specific skills and competencies expected from us in the curriculum. So, it is more like learning the theory here and doing the practical there [Female Student Teacher, 29 Years Old, North-East Region].*

The second sub-theme centres on authentic exposure to school realities. While colleges provide foundational theory, many practical aspects of the teaching profession such as classroom management, assessment and the daily teaching routines can only be fully understood through hands-on experience in schools. The transition from student to teacher was also described as both challenging and enlightening, especially due to the increased responsibilities and extended classroom hours. When explaining the authentic exposure to the school environment, some participants had these to say:

*There are certain things that, ideally, will not be taught in college. So, when we move out, when we go into the real phase, I mean, where we will be experiencing our profession, that is where we get to know the in-depth of what really the profession is, because things like classroom management, marking of register, continuous assessments and other stuff, here in the college, you wouldn't get that opportunity to know everything. But then, when you go out there, you get to know those who are in the profession and how they are doing things [Female Student Teacher, 25 Years Old, Central].*

*Being a learner from a teacher is somehow difficult. You see that when you are in the classroom as a student, you spend only three hours. But going there, you teach from morning to three o'clock and that is a bit challenging, but the STS exposes all those realities [Male Student Teacher, 31 Years Old, Volta Region].*

The presence or absence of supportive mentors during STS also significantly shapes student teachers' perceptions of the teaching profession and their commitment to it. Learning from practicing teachers in real school environments provides invaluable experience that cannot be replicated in college settings.

*Some people are out there teaching [STS]. So, when we go out there, we gain some experience from them. This wouldn't have been possible without the STS [Female Student Teacher, 25 Years Old, Central].*

#### 4.15.2 Theme 2: Practices of Colleges of Education (CoE) in Supported Teaching in Schools (STS)

The inductive analysis revealed multiple preparatory arrangements by the CoEs to operationalise STS, including orientation of student teachers, pedagogical training, supervision and monitoring and evaluation. These narratives were captured under two sub-themes: formal preparatory mechanisms and feedback and monitoring and evaluation.

##### 4.15.2.1 Formal CoEs Preparatory Mechanisms for Student Teachers

Participants described several measures that colleges employ to prepare student teachers for their STS. Orientation workshops and briefing sessions were commonly held before deployment, where students were introduced to objectives, reporting formats, assessment rubrics and strategies for adjusting to new school communities. These sessions were viewed as essential in equipping student teachers with both professional expectations and practical life skills, even though their duration was often brief. These views are expressed in the following extracts:

*Before they go, we organise orientation for them. Previously, we were doing the orientation also for the partner schools, but this hasn't been regular due to the lack of funds and other challenges...then we do the orientation for the students as to what is expected of them, what they are supposed to do and all that. [Male, 7 Years as STS Coordinator, Ashanti Region].*

*...we have our schedules and what we look at. We look at lesson notes preparation, we prepare them to be able to write very good lessons. We also take them through community relationship and how to live with community members. We have what we call household arrangement, rentals and payments of rent and the most important thing we give them when they are grouped is about how to live with other members of the community [Male, STS Coordinator for 3 Years, Northern Region].*

In addition to orientation, micro and macro teaching sessions were highlighted as essential avenues for skill development. These sessions helped student teachers practice lesson preparation, classroom delivery and subject-specific methods, though the depth and quality of feedback varied across institutions, as noted in the extract below:

*They taught us to prepare. Like gather this, gather that, prepare your lesson plan, etc. That way, you have something for your learners, but if you don't seek or search for something, you won't be a good teacher. So, it was based on their teaching, their encouragements and their guidelines that we were able also to take some of the subjects that were not even in our field in the practising schools. [Female Student Teacher, 29 Years Old, North-East Region].*

#### *4.15.2.2 Supervision, Monitoring and Feedback as Key Preparatory Approaches by the CoE to the Student Teachers*

Supervision, monitoring and feedback were also highlighted as central to the STS experience. Supervisors and mentors played an essential role in guiding student teachers, offering feedback on strengths and areas for improvement and keeping trainees accountable through both announced and unannounced visits. Although many student teachers valued the constructive feedback provided, others reported challenges such as inconsistent communication styles of mentors and the anxiety associated with supervisory visits. These views are represented in the following extracts:

*During the micro-tutoring, too, we go there for supervision. Mostly, it's the first, second and third supervision that we do for them. With my team, we go around to visit them and then talk with their lead mentors and then the students to know problems and then how they conduct themselves over there and what we can also do to help [Female, STS Coordinator for 2 years, Greater Accra Region].*

*I was excited because I was trying to practice what I had acquired and implement it well. And that time, our supervisors were there. So, when you go wrong, they will say you should have approached it this way, you should have approached it that way and there and then you learn. It was nice. [Female Student Teacher, 25 Years Old, Western North].*

*When something is wrong, she always corrects you that this is not supposed to be right and that what you have written is not what you have to write over*

*there. So, that one, she will correct you* [Female Student Teacher, 25 Years Old, Bono East Region]

The results revealed varied levels of dissatisfaction with the communication skills of the supervisors and mentors, leading to discouraging feedback for student teachers during their training and anxiety during supervised teaching and learning. When explaining the issue of dissatisfaction with supervision, this was what some student teachers had to say.

*When they come, looking at things that you've heard and other stuff, it scares us. Some of the supervisors, when they come, will stress you. Even seeing them alone, yeah. So, but then, we try to cope* [Female Student Teacher, 25 Years Old, Central].

*Hmm, with the communication skills, they must also be trained on that, on how they must communicate with us. Sometimes when you talk with them, their response and their feedback are not encouraging. If it's not taken, you will become angry, then you also respond to them* [Female Student Teacher, 24 Years Old, Ashanti Region].

#### 4.15.3 Theme 3: Teaching and Learning Resources for the STS

This theme focuses on teaching and learning resources (TLRs). The narratives not only highlight resource constraints but also point to adaptive practices that help to mitigate these challenges. The theme further highlights varying yet limited levels of institutional support and external partners.

##### 4.15.3.1 *Resource constraints and adaptive strategies*

Resource constraints concerned the shortage of physical resources, digital resources and poor infrastructure, among others. A recurrent issue was the shortage of physical resources, such as textbooks, ICT tools and science equipment, across many practising schools. These deficits limited the ability of student teachers to implement learner-centred pedagogies fully and forced them to improvise, often at their own expense.

*They were having literacy textbooks, but they were not adequate for my learners. We have to pair them in groups and other stuff* [Female Student teacher, 29 Years Old, North-East Region].

*...lots of ICT tools, like the computer, which was lacking. And then, sometimes, for me, getting those apparatus and other stuff was also a challenge for them* [Female Student Teacher, 25 Years Old, Central].

In response to these shortages, improvisation was a common strategy adopted by both student teachers and mentors. Student teachers often created low-cost local resources (charts, flashcards, concrete materials) that enabled active learning despite shortages. While these efforts enabled interactive and engaging lessons, improvisation often came at a financial cost to the student teachers, who were required to fund or develop the resources themselves. Some student teachers noted:

*I improvise by getting papers with different colours. I design a colour on the paper and then demonstrate it to the learners or show them how patterns look. And it was all a cost to me. There was a time I improvised, when our supervisor came, no one gave me money, let's say, to get a TLR* [Female Student Teacher, 25 Years Old, Northern Region].

*You design it like...It should look like a laptop so that you can use it. You can get a drying line, cables and other things. So, it was a lot of improvisation* [Female Student Teacher, 25 Years Old, Western North].

#### 4.15.3.2 *Role of institutional support and external partners*

Institutional and community support played an important role in mitigating non-pedagogical resource constraints. Some schools and communities pooled resources or offered accommodation incentives to attract and support student teachers. Likewise, where colleges provided resource kits, templates and exemplar teaching materials, student teachers reported greater confidence and preparedness. Nonetheless, accommodation and welfare issues remained significant concerns. In many cases, student teachers had to secure housing themselves, with short-term teaching practice placements clashing with the long-term rental arrangements common in local housing markets, thereby increasing financial burdens. In explaining this issue, this was what a coordinator had to say.

*Some of the communities also promised and delivered free accommodation. Usually, they bring a letter requesting student teachers and use the accommodation as an incentive to come to their schools [Male, STS Coordinator for 4 Years, Oti Region].*

#### 4.15.4 Theme 4: National Teaching Standards (NTS)

Many participants recognised the NTS as an essential policy anchor but thought it lacked practical translatability in many placements. The narratives suggest mixed levels of awareness of the NTS among student teachers, mentors and tutors. While colleges of education typically introduced student teachers to the NTS through handouts, reflective journals and orientation sessions, many student teachers admitted to having only superficial knowledge of the standards. In contrast, mentors in schools demonstrated varying levels of familiarity, with some emphasising codes of ethics and conduct rather than explicit alignment with the NTS framework. This discrepancy suggested that student teachers were more formally introduced to the NTS within their colleges than within their practising schools. This was what the student teachers had to say regarding knowledge of the NTS.

*We have a student-reflective journal, which is designed by our Coordinators. On the last page, we have the NTS. It is printed there. We have professional values and attitudes, professional knowledge and all that. We have all those aspects in the book. So, we were introduced to it. [Female Student Teacher, 25 Years Old, Western North].*

*For mentors? No, I didn't hear about it from them. We were taught in the school [CoE] by our supervisors before going out [STS]. However, in my class, my mentor has the code of ethics and code of conduct, which he introduced to us. I even have a copy. He printed it for me that, as a teacher, these are some of the codes of conduct and code of ethics which need to be followed [Female Student Teacher, 25 Years Old, Western North].*

Even where awareness existed, translating the standards into daily practice proved challenging. Student teachers noted difficulties in connecting the descriptors of professional values, knowledge and practices to lesson delivery, classroom management and learner engagement. This gap between theoretical awareness and practical application raised questions about the consistency of NTS adoption across placement sites.

*She didn't say anything about it when I got there, so I didn't really see her using anything of that. We weren't really taught how to inculcate them in our lesson delivery [Female Student Teacher, 23 Years Old, Eastern Region].*

*Sometimes you see a mentor who shouts at a learner, but then we were taught about the NTS in school, we were taught not to shout at learners and all those kinds of stuff. But I think it's part of society, so sometimes you get angry and it's normal [Male Student Teacher, 25 Years Old, Eastern Region].*

Further, tensions emerged between the NTS framework and school-based expectations of performance. Some mentors prioritised classroom control and exam-oriented teaching outcomes over learner-centred approaches, as emphasised in the NTS. Similarly, student teachers seemed to undervalue the NTS because it was not treated as a standalone examinable course. These differences in priorities, coupled with the absence of standardised assessment instruments aligned to the NTS, contributed to variability in how student teachers were evaluated across different schools and supervisors.

*Student teachers do not take things that they will not be examined on seriously. If the NTS were a course, student teachers would have taken it seriously compared to the other courses that they are taking, so that the NTS would have an impact on them [Male, STS Coordinator for 4 Years, Oti Region].*

#### 4.15.5 Theme 5: Motivation and Readiness Uptake Teaching as a Profession

The results on the motivation and readiness of student teachers to take up teaching as a profession were categorised into four sub-themes: STS shapes motivation through affirmation and disillusionment, personal and contextual determinants of readiness, exposure to the teaching profession and TLRs and the role of mentors as a source of motivation and readiness.

##### 4.15.5.1 STS shapes motivation through both affirmation and disillusionment

Many student teachers expressed strong motivation and passion for teaching, indicating that their experiences had reinforced their desire to pursue a career in teaching. The narratives suggest that student teachers' motivation was highly reinforced by an altruistic sense of imparting knowledge and skills to learners. Passion for working with children, commitment to nurturing future generations and the satisfaction derived from fostering literacy and numeracy skills were repeatedly cited as strong drivers of professional commitment.

When explaining their desire to impart knowledge to the learners, this was what was said.

*The kids are the future leaders to be and we need to give them care and attention. So, I've been motivated a lot to take care of the kids at that level and I'm very proud to be a student teacher to early grade learners. In fact, I'm fully prepared to teach the foundation level. I'm just waiting for my posting [Female Student Teacher, 25 Years Old, Northern Region].*

*Teaching numeracy is not only about algorithms, patterns and all that stuff. But then, how well you are informed to let the learners develop their critical thinking and then, apply those things, concepts that they are learning in the classroom, in real-world situations. So, that alone motivates me, trying to help people and inculcate certain abilities in them alone is a motivation. If you have the learners in your hearts, it will motivate you to try everything possible to help them so that they can be able to apply those skills and concepts that they need to learn [Female Student Teacher, 25 Years Old, Central].*

*It really hurts when you are teaching someone and the person is not capturing. However, for some of us, it's the love for children and the joy we gain from*

*teaching and learning from them* [Female Student Teacher, 29 Years Old, Ashanti Region].

#### 4.15.5.2 *Personal and contextual determinants of readiness*

Personal histories and prior teaching exposure were identified as significant determinants of readiness. Student teachers with prior experience, such as informal teaching in private schools or church settings, demonstrated higher self-efficacy and quicker adjustment to classroom realities compared to those without such backgrounds. Also, socio-economic considerations, including financial pressures and the lure of alternative career paths, influenced participants' long-term professional commitment. In their revelations, the following was stated regarding personal determinants of motivation and readiness.

*Generally, I'm motivated that before any child leaves my class, they will know how to write their names. In doing so, they will know how to speak like, speak more sentences and communicate and hold. We plan, maybe we can give them dialogues. Agnes, come. You and Reginald, we want you to practice this style. And so, before we went, there were students who couldn't even write their names. Eight-year-old students who couldn't even write* [Female Student teacher, 23 Years Old, Eastern Region].

*Prior to college, I taught for 2 years here in Gambaga. Even before this, I started from my Sunday School and all that, so the passion for teaching is just in me* [Female Student Teacher, 29 Years Old, North-East Region].

*The STS really helps some of us, especially those of us who do not have any teaching background* [Female Student Teacher, 23 Years Old, Eastern Region].

For many student teachers, intrinsic motivation was strengthened through mastery experiences such as inspiration, positive mentoring relationships, the use of students' innovations, successful lesson enactments and observing learners' progress. Supportive mentors who modelled effective practices, shared resources and provided encouragement were seen as key motivators, while limited mentor involvement or lack of teaching resources in some placements hindered confidence, particularly in numeracy instruction. For instance, a student teacher reported that:

*I can teach literacy very well. But when it comes to numeracy, I find it difficult to teach it. Throughout my experience with my mentor, it's only once a week that she taught numeracy; sometimes not at all because she didn't have the materials to teach numeracy, so I think that is why I'm finding it difficult to teach that particular subject* [Male Student Teacher, 22 Years Old, Oti Region].

Access to teaching and learning resources (TLRs) were also closely tied to motivation and readiness, with student teachers noting that resource-rich environments enhanced lesson delivery, while resource-scarce contexts undermined enthusiasm. Concerning the availability of TLRs as a motivation to take up teaching as a profession, this was what was said.

*you know, at that level with the children, if the TLMs are there and you can plan your lesson well and come, you will enjoy what you do because the students will understand you. It was the TLMs that made me happy with what I was doing in the class. So, with the help of my TLMs, I will be ready to pursue teaching at the foundational level* [Female Student Teacher, 29 Years Old, North-East Region].

Some student teachers acknowledged the challenges of teaching in resource-constrained environments, with large class sizes, inadequate teaching materials and limited support systems

contributing to disillusionment. Exposure to the heavy workload, stressful conditions and low professional status associated with early grade teaching occasionally led to reduced enthusiasm and hesitation about pursuing long-term careers at the foundational level.

*... Some come to school and they can't even write their names. They can't write letters or the alphabet. ...because of the STS and the out program, I'm now used to the teaching field and the challenges it brings. Those same challenges that we will be facing when we take up teaching, so it makes it normal, I'm used to it* [Male Student teacher, 27 Years Old, Upper West Region].

#### 4.15.6 Theme 6: Benefits of STS to Student Teachers' Mentors

The narratives revealed that STS provided key benefits, such as pedagogical skills, classroom management, lesson planning and delivery, improved attitudes and professional conduct and improved grades for the student teachers. Among the mentors, the STS was reported to reduce workload through task-shifting/sharing and also provides the opportunity for reciprocal learning.

##### 4.15.6.1 Pedagogical Skills

The findings highlighted the development of a wide range of pedagogical skills during STS. They show the effectiveness of strategies such as play-based learning, group work and teaching from “known to unknown” using real-life examples. These approaches were reported to enhance lesson engagement, but also helped learners connect new concepts to their everyday experiences. Student teachers also emphasised the importance of adapting instruction to diverse learning needs, including students with developmental or varied learning styles, underscoring the role of differentiated teaching strategies in foundational literacy and numeracy. This is supported by the evidence below.

*we have been taught about most of the pedagogies or the teaching strategies each teacher must get to know. We have one student-centred strategy. That is where you allow the students to give out their minds. Maybe you allow them, let me see, you allow them 90, then you add your 10 to it. We have the grouping strategy also there* [Female Student Teacher, 24 Years Old, Ashanti Region].

*...she introduced the lesson note play so the children will think they are playing without knowing they are learning. So, when I saw that all the time, I realised that play-based learning would be good for the learners, so I learnt that from her* [Female Student Teacher, 29 Years Old, North-East Region].

##### 4.15.6.2 Classroom Management and Learner Backgrounds

The interview excerpts reveal that the Supported Teaching in Schools (STS) programme significantly enhanced student teachers' professional and pedagogical competence. Student teachers reported gaining skills in identifying children with special needs, improving their approaches to classroom management and deepening their understanding of literacy and numeracy instruction. They also emphasised the importance of knowing learners' backgrounds to ensure culturally sensitive and conflict-free lessons.

*The STS has really prepared me. I can identify children with special needs, including those whose developmental stages have been delayed. So, going out, these skills will be useful [Female Student Teacher, 29 Years Old, Ashanti Region].*

*...there were certain things that I was doing, which were wrong, but I didn't know. Like telling the learner that your answer is wrong. Sit down, etc [Male Student Teacher, 27 Years Old, Ashanti Region].*

*The STS introduces you to the learners' background. Before you introduce a lesson, when you don't get back to their backgrounds, some of the lessons, let me say, may cause a conflict, especially when you are teaching something like festivals in RME and some of the marriages [Female Student Teacher, 24 Years Old, Ashanti Region].*

#### *4.15.6.3 Lesson Planning and Delivery*

Lesson planning and delivery were identified as crucial competencies developed through the STS. Student teachers reported gaining a better understanding of structuring lessons, managing time effectively and integrating teaching and learning resources (TLRs) to accommodate auditory, visual and kinaesthetic learners. However, challenges were also noted, particularly with lesson note preparation, where reliance on copied or non-contextualised examples sometimes undermined the relevance of classroom activities.

*We used to think that it [lesson planning] was difficult, but through the STS, we have been taught how to approach it. Same with literacy, sometimes, how to approach the literacy language or how to teach it is very difficult, but through STS, they will guide you on how to approach certain subjects. When you take numeracy, we have a lot of activities. For instance, one of the best activities I like is when you are about to teach about numbers. [Female Student Teacher, 25 Years Old, Western North]*

*Some of the learners are auditory learners, some are visual learners, some are also kinaesthetic learners, i.e those who learn by doing it. At the foundational level, you know, if the TLRs are there and we can have pictures and even videos to garnish it up, it will be able to cover for those learners [Female Student Teacher, 29 Years Old, North-East Region].*

*My mentor normally said time on task. So, when we are preparing a lesson, you have to know how you are going to spend 45 minutes. You have to know that starters should take you maybe three minutes, the main body should take you maybe five minutes. So, it is about planning. So, it will help you to plan well and prepare adequately because you have to manage the time. You cannot use the whole two hours to teach one subject [Female Student Teacher, 25 Years Old, Western North]*

#### *4.15.6.4 Improved Attitudes and Professional Conduct*

Student teachers valued the close relationship with their mentor, highlighting the importance of guidance and support in their teaching journey. Beyond technical skills, the STS contributed

to professional growth in areas such as communication, patience and confidence. Student teachers described improvements in professional conduct, such as punctuality and ethical decision-making and credited their mentors with shaping their attitudes towards effective teaching practices. Many also reported increased confidence in standing before a class, managing learners and building constructive relationships with pupils.

*...I went to a certain school and the head teacher invited us to come and see two learners fighting. He separated them and asked, 'What are you going to do in this situation?' So we were, ah, I will cane them, I will do this, I will do that. And he said, oh, so you are going to cane them, but you know, it's against the code of ethics by the GES. So come, he sat us down. And then, the way he addressed the issue was amazing. And we saw that, oh, STS is not about what we are thinking, it's a lot, it's a lot on its own [Female Student Teacher, 25 Years Old, Western North].*

*Right now, let me say, I'm courageous. That anxiety is no more there. And then how I would interact with the children. I've gained knowledge. I've learned from my mentor how I will be with the children [Female Student Teacher, 23 Years Old, Ashanti Region].*

#### *4.15.6.5 Benefits of the Presence of Student Teachers to the Mentors*

The STS was also found to provide reciprocal benefits for mentors, who benefited from task-sharing and the introduction of updated content knowledge through the new curriculum. Instances of mutual learning were reported, where mentors adopted aspects of the new curriculum or innovative lesson delivery methods introduced by student teachers. Concerning task-shifting and task-sharing, this was what a student teacher had to say.

*she [mentor] used to call me her "saviour ". She was happy that I was there and I was not lazy; I marked the register and did the work. Anytime she comes and is teaching, she told me to be at the back and control the class, especially the KG [Female Student Teacher, 29 Years Old, North-East Region].*

*My mentor was very excited to see me around. At that level, most schools have two teachers that handle them but, in my case, I only had one Madam handling about sixty students. So, seeing me around to render my services, she was very happy and excited [Male Student Teacher, 22 Years Old, Oti Region].*

Also, it was identified that the student teachers come with new knowledge regarding the updated curriculum, which they introduce to the mentors. This was what the participants had to say concerning reciprocal learning.

*My mentor is a grown type, so most of these tutors or mentors lack the current knowledge. The new curriculum has recently come out, so most of the things are there that the teachers in the field are finding difficult. My mentor happened to be such a person, but she is ready to learn and unlearn, so there are always things I prompt her with when it is not in line [Male Student Teacher, 22 Years Old, Oti Region].*

#### 4.16 Theme 7: Challenges of the Supported Teaching in Schools (STS) Programme in Ghana

This theme highlights the challenges of the STS from the perspectives of student teachers. There were several multi-level yet interlinked challenges with the STS. Typically, these challenges were logistical, financial, institutional and human in nature. Financial and institutional constraints were systemic, which require policy-level and institutional responses to address them.

##### 4.16.1 Structural and systemic barriers

The findings highlighted persistent systemic barriers that undermine the effectiveness of the Supported Teaching in Schools (STS) programme. A major concern was the inadequacy of funding and infrastructure gaps, which directly affected allocation to practising schools, supervision and the overall quality of student teacher preparation. Transportation emerged as a recurring challenge, with limited and frequently malfunctioning college buses leading to delays, missed observations and additional financial burdens on students who often had to arrange their own transport.

*The only bus we have there, tutors will not even like to go with it again, but the unfortunate thing is, we cannot also allow tutors to go as individuals. So, schools that are outside Bimbilla, we have to plan a day. Let's say, Wednesday is supervision for Kpandai. What it means is that, if you are scheduled to go to Kpandai for supervision on that Wednesday, you have to go. Once you miss that, then you have to find your own way to go, which nobody will pay for. There are times when you come out, the bus will also have a challenge, so it is a serious challenge [Male Student Teacher, 24 Years Old, Northern].*

Accommodation difficulties also compounded these challenges, with student teachers frequently facing high costs, poor facilities, or limited availability of housing during their short placements. The short duration of the STS contributed to the situation where accommodation was sometimes an issue for some of the student teachers.

*Because before we got there, I went to see a certain woman for a room. And then, she charged 70 Cedis per month. But then, when I got there, she said she had given it to somebody else. The time was also close and I think that was Friday, so Monday we were starting, so I had to try to get one and that was 200 Cedis a month, so 70 Cedis to 200 Cedis a month. So, I had to force and then pay, so it was a very big challenge [Female Student Teacher, 25 Years Old, Central].*

*...they complain because four months and here when they are renting, they go for one year, so when I realised that the teaching practice was four months, some of the landlords and landladies they considered to give out their rooms only for six months (half a year) and some too if you know them, they can give it to you for the four months. But it wasn't easy for the four months, so some of them were complaining because they would pay six months and they would not stay up to that, or they would pay one year and they would not stay up to that, meaning they would spend money [Female Student Teacher, 29 Years Old, North-East Region].*

Another structural challenge was industrial strike actions. The impact of strike actions further disrupted the smooth running of the STS, resulting in missed supervision visits, inconsistent guidance and an inability to meet required observation standards.

*It was supposed to be 12 weeks. They went on strike and the STS coordinator said, right now, we are not under him. We are under the school...but the college is also on strike [Male Student Teacher, 23 Years Old, Eastern Region].*

*And because the strike also affected this year's supervision. I couldn't go either. Those times, even if we're here, you could not go with a school vehicle. Those around, sometimes, we could just break in and see them. But you know, going to monitoring when your colleagues are on strike is a deviant attitude, so it was a bit challenging for me at the time. It means that the required number of supervisions was not met [Female, STS Coordinator for 4 Years, Ashanti Region].*

As mentioned, some of the systemic challenges were infrastructural/facilities in nature. The results show that resources such as chairs, tables and decent classrooms were poor in some of the practising schools.

*For the first term, there were no chairs, so all the students were seated on the floor. In the second term, they brought the chairs. However, the doors and windows were not there and it is an old building that, if you are at KG, you can easily walk from KG to Basic 3; that is how they built it. So, it is just like these corners, you move to the next class and from there you can go. So, it was more or less distracting teaching and learning [Female Student Teacher, 29 Years Old, North-East Region].*

Beyond logistical constraints, poor coordination between Colleges of Education (CoEs) and practising schools was identified as a structural challenge. Unreliable information provided by the practising schools contributed to mismatches between the student teachers needed and the actual student teachers assigned to them. Moreover, gaps in curriculum alignment highlighted the need for stronger institutional collaboration.

*When you ask how many qualified teachers there are, because they want more student teachers to come, they will say, oh, we have about six. And if it's a basic school, like class one to class six and they tell you we have six, it means you, the coordinator, you know that, oh, that means all of them, all the teachers there are qualified to mentor. However, they will try to substitute the teachers with the student teachers [Male, 7 Years as STS Coordinator, Ashanti Region].*

*They should make sure that the College curriculum reflects what is in the Basic schools. Like literacy, we have listening and speaking, which are there, reading and writing, which are there, but there are other strands that are not directly covered, like reading, writing and others, like I mentioned at the College level [Male, STS Coordinator for 2 Years, Upper West Region].*

#### 4.16.2 Human resources and capacity issues

The findings reveal multiple contextual barriers that shape the effectiveness of teaching practice in schools. A key challenge relates to the heavy workloads placed on mentor teachers and coordinators, coupled with limited recognition and inadequate financial incentives. Coordinators described the responsibility as highly demanding, requiring them to manage training, supervision and administrative tasks with minimal compensation, leaving many feeling undervalued and overburdened.

*We are not able to give them allowances for the work they do, although they normally demand...The last time I discussed this with the principal and the FO, we actually agreed that we would give them something like chairs for the schools to serve as motivation for the school or probably add some kind of certificates. When we put it into writing, we didn't get a go-ahead because we cannot charge them directly. If the GTEC can charge or increase the amounts they pay [Male, STS Coordinator for 2 Years, Upper West Region].*

*If you look at the work of a Coordinator in every College, I will say it's one of the tedious jobs. Because like I said, you do a training workshop, you relate with mentors, the education office, students and staff. You do postings every year. You enter scores. The schools and lecturers will not bring it on time. And you have to be looking for calling people here and there. This, compared to how much coordinators are given, is inadequate. I would say that a coordinator is more than HOD and on top of this, you also teach [Female, STS Coordinator for 4 Years, Ashanti Region].*

#### 4.16.3 Contextual constraints within schools

At the school level, student teachers faced additional contextual constraints. Large class sizes and heavy teaching loads limited opportunities to implement learner-centred strategies, with student teachers often struggling to manage classes of sixty or more students. Such overcrowding not only strained classroom control but also reduced the effectiveness of individualised instruction.

*My class was a large one, there were sixty (60). So, controlling them was very, very difficult. And I have to make sure each of the learners would understand whatever I'm teaching, which was very tiring [Female Student Teacher, 23 Years Old, Eastern Region].*

*...for a class of sixty-one students, the classroom was not the best. I think a normal class should be thirty or so but having the sixty-plus students under one roof was a challenge [Male Student Teacher, 27 Years Old, Upper West Region].*

Some student teachers mentioned that in certain cases, mentors abandoned their teaching responsibilities, leaving students to manage entire classes independently, sometimes while attending to personal activities outside school. Although some student teachers enjoyed taking the class for themselves, they mentioned that the situation placed excessive responsibility on

them and undermined the collaborative intent of the mentorship model. In their revelations, this was what was said.

*They [student teachers] would tell us the class does not have a mentor, or the number of teachers in the school is not enough. They are therefore forced to become class teachers while the mentors mostly left their work, all their work on the student teachers. When they [student teachers] come, ei, moaba momb3 toa so erh, [you have come, come and continue], then they will leave the class, some of them will not even go to the school [Male, 7 Years as STS Coordinator, Ashanti Region].*

*Although I enjoyed it, I saw it as work overload for me. Because sometimes my mentor will call me that she won't be around and I'll be forced to take the subjects that they have in those days. I mean, on that very day. And although I enjoyed teaching those subjects, in fact, I enjoyed it. But the tedious nature of the work was a struggle [Female Student Teacher, 25 Years Old, Northern Region].*

Acknowledging that such practices were not appropriate, the STS Coordinators mentioned that the lead mentors denied such practices in the schools after asking them. In their revelations, this was what was said.

*It's not the best for a student teacher to come and then you leave your class for the person and it's like that time, it's a holiday, it's bad. We contact the lead mentors and some of them would not admit, I mean, like saying, oh you see, maybe my schoolteacher was on maternity leave, was on this and that and confirms what the students say [Female, STS Coordinator for 4 Years, Ashanti Region].*

#### 4.16.4 Gaps in Supervision and Administrative Preparation

Misalignments between college and basic school academic calendars often reduced the time available for lesson preparation and observation. These mismatches created stress for student teachers and undermined the continuity of practice. Further, discrepancies between lesson planning formats used in colleges and those required in schools sometimes left student teachers confused and reliant on mentors' improvised guidance.

*A big challenge that we are facing is that I think the way we prepare our lesson plan and the way they [practising schools] prepare their lesson plan, our students get confused. It's different from what we teach them in the classroom. At times, they have to listen to them because they are guiding them. [Female, STS Coordinator for 2 years, Greater Accra Region].*

*The changes in the school calendar affected their stay in the practising school. They will have to align the calendar with the basic school's calendar. As of now, the basic schools are writing their exams and when school reopened, I think we are in the 4<sup>th</sup> or so week so even the regular students the level 200 and 300s, we have to let them do their observation two weeks, two weeks so that they will be able to cover the six weeks that they are supposed to do the observation out. When we want them to go for the six weeks, we won't get the six weeks out because the basic schools will be vacating, I think the 5<sup>th</sup> of this July [Male, STS Coordinator for 2 Years, Upper West Region].*

#### 4.16.5 Limited Support for Mentor Preparation

In terms of mentor preparation, the study found limited training opportunities provided by CoEs. Workshops were not regular for several years, leaving mentors to depend on school-based practices rather than standardised professional development. This gap contributed to uneven support for student teachers and weakened collaboration between colleges and partner schools.

*...we used to organise workshops for the mentors, but for the past two to three years, it has not been easy. Because we have been looking at how to get funding for the number of mentors. We have over thirty schools and then we were looking at the number of teachers involved. It means if we are taking one from each class, it means every school has at least 5 teachers. So, if you multiply that by 31 schools, that is quite a lot [Male, STS Coordinator for 2 Years, Upper West Region].*

*...some are not going to the workshop. Since we came back, we've been sharing ideas and we've been talking about our experiences, whatever is happening. Some were saying... [Female Student Teacher, 29 Years Old, Ashanti Region]. It has been some years since we did a workshop; we are yet to do that again [Male, STS Coordinator for 4 Years, Oti Region].*

Poor remuneration further exacerbated the problem. Supervisors and coordinators described transport and allowance provisions as inadequate, with financial constraints limiting the frequency and quality of supervision. This challenge often discouraged staff participation and reduced oversight of student teacher activities in schools.

*The issue of remuneration for tutors is also a big challenge. A teacher will not understand why he should move from here to Kpandai and come and you will give him 10 Ghana cedis per head and sometimes, when you also talk to the principal, they will tell you that this is what we have. There are times when you will schedule your movement, but on the day of the movement, the tutor, looking at what he is going to get, will not want to go. So, most of the time you have to call for help to do the supervision. Movement is just the challenge of the tutors and if it is in town, like I am telling you, I have to move to about two to three schools in Bimbilla. Then I come and no fuel for my motorbike or car. So, you can imagine the next time you ask such an individual to come out. So, remuneration and transportation are a very big challenges we face when it comes to supervision. [Male, STS Coordinator for 3 Years, Northern Region].*

*...the amount of money paid for STS activities is woefully inadequate. Let me put it that way, it's woefully inadequate. And then monies, allowances paid to supervisors and STS coordinators are also not adequate. I am thinking that if they can increase their amount so that at least when the monies that are given to supervisors, then we can also give something to, I mean, the partner schools. That also motivates them to do the work well. You know, over the years, they complain, but there's nothing I can do. My hands are tied. We wish we could do something, but the fact is that the money we are getting from STS is not*

*enough. If they can at least increase it, because there are a number of things that go into STS. So, the money should be increased* [Female, STS Coordinator for 4 Years, Ashanti Region].

#### 4.16.6 Poor Student Teacher and Mentor Attitudes towards the STS

The narratives underscored concerns about the attitudes of both student teachers and mentors toward the STS programme. Some student teachers were reported to lack commitment, with absenteeism and distractions such as mobile phone use undermining their engagement. Conversely, instances of poor mentor conduct, including weak interpersonal support and negative interactions with student teachers, were also highlighted. Together, these issues suggest that while the STS framework is designed to integrate theory and practice, its impact is hindered by attitudinal constraints on both sides. Concerning student teacher attitudes, this was what was reported.

*You have to chase them [student teachers] there, make sure that they go. Some will go and run away. And when the time is up, they will come as if they went for the STS. And what the mentors complain about a lot is their phones. They will be fidgeting with their phones, not concentrating* [Female, STS Coordinator for 2 years, Greater Accra Region].

*The attitude of some students [student teachers] is quite worrisome. Some of them will go there and put-up bad behaviour* [Female, STS Coordinator for 4 Years, Ashanti Region].

Concerning the attitude of mentors, this was what a Coordinator had to say.

*... sometimes when you hear the way some of them communicate or interact with the student teachers, you know that the interpersonal relationship isn't the best. ... recently, there was a case, a theft case and we had to step in and the mentor accused the student of the phone being missing and for that reason, the students who came there at that time took it and we had to follow up. Unfortunately, later the phone was found and it happened that it wasn't our student* [Female, STS Coordinator for 4 Years, Ashanti Region].

### 4.17 THEME 8: Suggestions to Improve the Supported Teaching in Schools (STS) Programme in Ghana

The findings underscored a strong consensus among both student teachers and coordinators on the need to strengthen the STS programme through targeted reforms in mentor training, standardised assessment, supervision, increased duration and provision of TLRs and improved infrastructure.

#### 4.17.1 Strengthening preparation and resourcing for the STS programme

There was a recognised need for professional development training for mentors to improve their teaching capabilities and support for student teachers. A central recommendation was the enhancement of mentor preparation and incentives. Calls were made for systematic mentor training programmes, including certification

schemes, continuing professional development (CPD) and school-based workshops to build competence.

To complement training, respondents also advocated for modest stipends, recognition awards and CPD points to serve as motivation for mentors, alongside improved logistical support such as accommodation and transport for both mentors and student teachers.

*Nationally, we should train the mentors. It shouldn't just be the responsibility of the institution to train the mentors because the institution can only afford two people coming from the school. They are then expected to train those in their school as well. But some may not even share the knowledge. We need to start from KG to JHS and the whole school, from KG to JHS, just to train them.* [Female, STS Coordinator for 2 years, Greater Accra Region].

*Teachers in the basic school who also take part in mentorship should have some kind of CPD points awarded to them to serve as motivation. I think the quantum of money that is paid should be increased to appreciable amounts so that we can use this for the running of STS. And I think when lecturers are paid well, I think it will motivate them to also do the work and do it very well. And then some money should also be given to the partner schools* [Female, STS Coordinator for 4 Years, Ashanti Region].

#### 4.17.2 Standardised assessment tools aligned with STS and NTS

Another key recommendation focused on the development of standardised assessment tools that align with both the STS framework and the National Teacher Standards (NTS). Participants noted the inconsistencies between lesson preparation requirements at the colleges and those in schools, which caused confusion for student teachers. Practical rubrics and observable indicators were suggested as a way of ensuring fairness and consistency across placements, while also bridging the gap between theory and practice.

*...my recommendation is that when the basic school resumes, the final year students would come and be oriented and go to the field. They should go to the field, then they should have a full first term and possibly part of the second term, then they can end it there and go and be waiting for us to come and they will come and join us in the second semester. If we want the final year first semester to resume at the time the colleges are resuming, they will come and meet the basic schools at the time that they are almost preparing to go on first term break* [Male, STS Coordinator for 4 months, Oti Region].

*With the lesson preparation, we found a variation between what we were taught in college and what's practised in the basic schools. I would suggest that during orientation, the mentors are involved to have that intel of what the national expect...we need to bring them. The mentors are to be trained to tell us the things on the ground, so that when we move there, there wouldn't be any variation* [Female Student Teacher, 25 Years Old, Central].

#### 4.17.3 Increased STS duration

Many participants argued that the current three-to-four-month structure was inadequate for developing professional competence, advocating instead for an extended programme covering a full academic year or at least two terms. Concerning the call to extend the duration of the STS, this was what some participants had to say.

*... frankly speaking, previously I was of the view that the duration of the exercise was okay. But looking at how things are, I have changed my mind. If it is possible for the programme to be run for a whole year or the whole two semesters, I think it will help...Transferring theory into practice, including classroom management and how they ask questions and the things they do, you realise that they are not well trained, so they need to be given more time [Male, 7 Years as STS Coordinator, Ashanti Region].*

*It should have been a full year or a full term, but it was half. At least, when you begin with the learners in the term and end with them that way, you will be able to assess them in terms of their weaknesses and strengths and also judge the outcomes of your work. But coming in the middle and not closing with them or coming in the middle and closing with them is a little bit contradictory [Female Student Teacher, 29 Years Old, North-East Region].*

Others, however, cautioned against extending the duration without addressing resource gaps, noting that a well-resourced shorter placement might be more sustainable. To some student teachers, the longer the STS duration, the more burdensome it gets in terms of the finances to meet their needs. When explaining this issue, this was what a student teacher had to say

*The duration is enough, but what goes in is what's critical. Resources need to be available so that anytime we need something, we can just lay our hands on it and learn [Male Student Teacher, 22 Years Old, Oti Region].*

*If you look at the previous activities we went through concerning STS, we did micro teaching and observation and many more. So, the internship program shouldn't exceed four or five months. At least it should be three months. We've gotten some experience already. Looking at the cost involved for us, sometimes the so-called allowance that they have been giving us doesn't come on time and if you are to be using your own money throughout the STS, including the practicals, you will end up begging, which shouldn't be so as a professional. So, I think if they could reduce the weeks to twelve weeks, it would be okay. Or better still, if they want us to be going through it, let's say, 14 weeks, then they need to provide our needs [Female Student Teacher, 25 Years Old, Northern Region].*

#### 4.17.4 Provision of TLRs and Improved Infrastructure

Finally, the provision of teaching and learning resources (TLRs) was repeatedly emphasised as a prerequisite for effective teaching practice. Student teachers described difficulties in implementing learner-centred strategies in resource-poor environments, underscoring the importance of equipping schools with adequate materials to ensure that teaching practice serves its intended purpose of preparing reflective, competent and resourceful teachers.

*The government should intervene to ensure that early-grade classrooms are well-structured. Kids learn through watching, touching and many more. If the government can intervene to provide resources for every basic school classroom so that they will have enough resources to decorate the classroom, draw objects and animals and provide the necessary things, it will help the learners to learn well and become future leaders [Female Student Teacher, 25 Years Old, Northern Region].*

*...TLMs should be provided. Because there are some schools that don't have enough TLMs. TLMs should be provided to those schools [Male Student Teacher, 27 Years Old, Ashanti Region].*

## 5.0 Summary of Findings

### 1. Availability of TLRs

More than half (54.5%) of student teachers reported insufficient teaching and learning resources during their STS placements for teaching foundational literacy. While most had access to picture books, picture cards and flash cards, fewer than half could use alphabet charts, workbooks, storytelling props, worksheets, or letter blocks. For numeracy, counters (73.5%), shapes (54.9%) and number cards (51.5%) were the most available resources. Less than a quarter of student teachers had access to place value materials, sorting objects, pattern materials, or dice.

### 2. Team Teaching Practices

Approximately two-thirds (65.7%) of student teachers experienced team teaching in foundational literacy and numeracy during their STS. Of those, 95.4% found it beneficial, indicating that collaborative teaching is a valued and effective practice in these placements.

### 3. Mentorship and Support

A large majority (95.2%) of student teachers indicated that they were officially assigned a mentor during their STS. Among these, 96.4% observed at least three teaching sessions by their mentor in a foundational class. Nearly 78% engaged with children with special needs, 84.6% learned strategies for managing diverse learning needs in their classes.

### 4. Mentor Engagement and Teaching Strategies

Most student teachers (90.2% for literacy and 86.0% for numeracy) reported that mentors actively supported their teaching. More than 60% received help in selecting appropriate TLRs. However, less than one-third received guidance on handling pupils' deviant behaviour, advanced pedagogical strategies, managing pupils' questions, or teaching difficult topics. The vast majority (93.7%) of student teachers adopted teaching strategies from their mentors for both foundational literacy and numeracy.

### 5. Influence of Mentor Standards on Student Teachers

Student teachers who rated their mentors' understanding or adherence to the NTS as low (very poor, poor, or average) were significantly less likely to report high adherence themselves. This suggests that mentors' professional standards strongly influence student teachers' own professional conduct.

### 6. Supervision and Feedback

More than half (55.0%) of student teachers felt anxious when observed by supervisors, mainly due to concerns about impressing their mentors. Among those who were not anxious, included focusing on the learners (60.3%), preparing relevant TLRs (58.0%) and confidence in their teaching abilities (50.0%). Less than one-third attributed their calmness to their deep knowledge of teaching techniques. Almost all student teachers (95.9%) received supervisor feedback during STS, with 44% receiving it daily.

### 7. Self-Assessment of Knowledge and Competence

Overall, student teachers rated their content knowledge in foundational literacy highly, with about 85.0% reporting high or very high competence. Similarly, 80.0-85.0% rated their content knowledge in foundational numeracy as high or very high.

8. Pedagogical Knowledge and Competence

More than three-quarters of student teachers rated themselves highly across all indicators of pedagogical knowledge. Similarly, over 80.0% reported high or very high competence in foundational literacy and numeracy, including self-confidence in teaching, lesson planning and lesson presentation.

9. Competency in Teaching Strategies

Competence in selecting foundational literacy teaching strategies was moderate. No single strategy exceeded a 60.0% self-reported competence rate. Slightly more than half felt competent in teaching listening (phonemic awareness) and writing and reading (concept of print). Fewer reported competence in listening and reading (alphabetic knowledge and phonics), reading (vocabulary), reading (comprehension) and especially reading (fluency), where less than one-third felt competent.

For foundational numeracy, only counting, representation and cardinality saw more than half of student teachers self-reporting competence (70.5%). Competence dropped for number (whole numbers) operations and relationships between numbers (46.9%), fractions and relationships between numbers (41.8%) and lowest for algebra (non-numerical patterns and relationships), geometry, measurement and data handling (all below 30%).

10. Resource Selection and Classroom Management

A substantial proportion of student teachers reported high or very high competence in selecting the appropriate teaching and learning resources for foundational literacy (79.5%) and numeracy (76.8%). Similar high ratings were reported for classroom management (79.2%), meeting learners' needs (79.6%) and actively engaging learners (81.9%).

11. Awareness, Understanding and Adherence to Standards

Approximately 80% of student teachers reported high or very high awareness of the NTS. Over 80% also rated themselves as having a high or very high understanding and adherence to each NTS indicator.

12. Impact of STS on Preparation and Motivation

A high percentage (96.3% for literacy and 95.9% for numeracy) felt the STS prepared them adequately for effective teaching. More than 80% self-reported that the STS had a high or very high impact across all indicators. Key determinants of impactful STS included content knowledge, competency development and understanding and adherence to the NTS.

13. Professional Development and Readiness

The STS practicum strongly influenced the development of competencies and skills in foundational learning, as well as content knowledge. It was also significant in shaping student teachers' understanding and adherence to the NTS and their engagement with STS mentorship.

14. Motivation and Readiness for Teaching

Between 87.4% and 87.8% of student teachers reported high or very high level of motivation to pursue teaching. Over 80% felt well-prepared and positive about their

readiness to teach foundational literacy and numeracy. Impactful STS was a significant precursor to student teachers' motivation towards FLN teaching and their professional readiness to teach.

#### 15. Challenges

Key challenges of STS identified included shortages of resource, infrastructural weaknesses and weak institutional coordination. Systemic pressures such as workload, supervision quality and entrenched school cultures were also noted as hindrances to effective teaching practice.

## 6.0 Conclusion

The study found that, the Supported Teaching in Schools (STS) programme significantly improved student teachers' competencies in foundational literacy and numeracy (FLN), especially in content knowledge, pedagogical skills and the ability to select appropriate teaching strategies and resources. Student teachers also demonstrated greater familiarity with, understanding of and adherence to the National Teachers Standards (NTS). The STS practicum and mentorship fostered strong motivation and professional readiness among student teachers to teach FLN.

However, the effectiveness of the STS programme is undermined by persistent challenges, including shortages of resources, inadequate infrastructure and weak institutional coordination. Systemic issues such as high workloads, inconsistent supervision quality and entrenched school cultures further hinder the smooth implementation of teaching practice. Addressing these systemic barriers will require better incentives for mentors, enhanced supervisor training and reforms to reduce class sizes and create more supportive teaching environments, ensuring student teachers are well-prepared to deliver quality education during and after their training.

## 7.0 Recommendations

The following recommendations are made based on the Phase Three survey findings as reported in the preceding sections of this report:

1. CoEs, in collaboration with mentor universities, must strengthen student teacher training in content, teaching strategies and resource selection, with targeted workshops on geometry, measurement and effective resource use.
2. Ensure all student teachers receive both digital and physical copies of the NTS and integrate NTS content and periodic assessments into training curricula to reinforce understanding and adherence. The CoEs must take the lead in this, working in close collaboration with mentor universities, the NTC and the GTEC.
3. Improve STS practicum support and mentorship by providing regular mentor training and developing a standardized national mentorship framework to update them on current professional practices and enhance consistency in mentorship effectiveness. The findings also highlight the need to consider extending the Year Four STS practicum for more hands-on teaching experience for student teachers. These will take collaboration between the CoEs, mentor universities, the GES, NTC, GTEC and the Ministry of Education.
4. Address financial and logistical barriers by increasing funding for transport, teaching materials and mentor incentives and explore public-private partnerships or public-public partnerships to support STS implementation. This should be led by the Ministry of Education, acting on behalf of Government and in collaboration with CoEs, mentor universities, NTC, GES and GTEC.
5. Promote gender-sensitive approaches and awareness campaigns in teacher training to enhance the competencies of student teachers and counter stereotypes and negative perceptions toward foundational literacy and numeracy. This may require inter-ministerial collaboration between the Ministry of Education and Gender and Social Protection, working with and through the CoEs and mentor universities.
6. Expand access to teaching and learning resources by establishing a national repository of digital and physical resources to support FLN and creating enabling environment for innovative, cost-effective resource development by CoEs and mentoring universities.

## 8.0 Annex 1

Table A1: First factor loadings for mentor's NTS understanding and adherence to the NTS

| Mentor's NTS Understanding                                                                            |          | Mentor's NTS Adherence                                                                                                                               |          |
|-------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Indicators                                                                                            | Loadings | Indicators                                                                                                                                           | Loadings |
| My mentor understands the Professional Values and Attitudes standard in the NTS                       | 0.786    | My mentor created a safe and encouraging learning environment                                                                                        | 0.807    |
| My mentor understands the Professional Knowledge standard in the NTS                                  | 0.809    | My mentor listened to the pupils and gave them constructive feedback                                                                                 | 0.825    |
| My mentor understands the Professional Practice standard in the NTS                                   | 0.815    | My mentor employed a variety of teaching and learning strategies that encourage learners' participation and critical thinking                        | 0.852    |
| My mentor understands the Professional Development standard in the NTS                                | 0.837    | My mentor explained concepts in foundational numeracy and literacy clearly, using examples familiar to pupils                                        | 0.84     |
| My mentor understands the Community of Practice standard in the NTS                                   | 0.830    | My mentor managed behaviour and learning with small and large classes                                                                                | 0.843    |
| My mentor understands the Knowledge of the Educational Frameworks and Curriculum standards in the NTS | 0.840    | My mentor used a variety of assessment modes during teaching to support learning                                                                     | 0.848    |
| My mentor understands the Knowledge of Learners standard in the NTS                                   | 0.852    | My mentor paid attention to all learners, especially girls and pupils with special educational needs, ensuring their progress                        | 0.867    |
| My mentor understands the Managing the Learning Environment standard as indicated in the NTS          | 0.859    | My mentor produced and used a variety of teaching and learning resources that enhance learning (including ICT) in foundational literacy and numeracy | 0.854    |
| My mentor understands the Teaching and Learning standard in the NTS                                   | 0.851    | My mentor used age- and grade-appropriate strategies to implement lessons in foundational literacy and numeracy                                      | 0.852    |
| My mentor understands the Assessment standard in the NTS                                              | 0.845    | My mentor identified learners with special needs and referred them for support                                                                       | 0.853    |
| My mentor understands how to achieve the three main domains of the NTS in a foundational class        | 0.845    |                                                                                                                                                      |          |
| My mentor understands how to achieve all the subdivisions of the NTS in a foundational class          | 0.857    |                                                                                                                                                      |          |
| My mentor understands what the standards are for                                                      | 0.856    |                                                                                                                                                      |          |
| My mentor understands who the standards are for                                                       | 0.838    |                                                                                                                                                      |          |
| My mentor understands what is required of a teacher based on the NTS in foundational lessons          | 0.856    |                                                                                                                                                      |          |
| My mentor understands how to integrate the NTS in foundational lesson objectives                      | 0.840    |                                                                                                                                                      |          |
| My mentor understands how to apply the NTS in the foundational classroom                              | 0.838    |                                                                                                                                                      |          |

Table A2: First factor loadings for student teachers' adherence to the NTS

| Indicators                                                                                                                                   | Loadings |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Creating a safe and encouraging learning environment                                                                                         | 0.812    |
| Listening to pupils and giving constructive feedback                                                                                         | 0.817    |
| Employing a variety of teaching and learning strategies that encourage learners' participation and critical thinking                         | 0.842    |
| Explaining concepts in foundational numeracy and literacy clearly using examples familiar to pupils                                          | 0.834    |
| Managing behaviour and learning with small and large classes                                                                                 | 0.839    |
| Using a variety of assessment modes during teaching to support learning                                                                      | 0.854    |
| Paying attention to all learners, especially girls and pupils with special educational needs, ensuring their progress                        | 0.841    |
| Producing and using a variety of teaching and learning resources that enhance learning (including ICT) in foundational literacy and numeracy | 0.846    |
| Using age- and grade-appropriate strategies to implement lessons in foundational literacy and numeracy                                       | 0.847    |
| Identifying learners with special needs and referring them for support                                                                       | 0.847    |