Foreign, Commonwealth & Development Office

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RANA Implementation Assessment Katsina and Zamfara States

TECHNICAL REPORT December 2022

CONTENTS

ACRONYMS

AHNi	Achieving Health Nigeria Initiative
BESDA	Better Education Service Delivery for All
CBMCs	Centre Based Management Committees
CoE	College of Education
CTC	CHIP Training and Consulting
EGMA	Early Grade Mathematics Assessment
EGRA	Early Grade Reading Assessment
FCDO	Foreign, Commonwealth & Development Office
FHI 360	Family Health International
FME	Federal Ministry of Education
FOMWAN	Federation of Muslim Women Associations in Nigeria
GEP3	Girls Education Project Phase Three
IQS	Integrated Qur'anic Schools
NMEC	National Commission for Mass Literacy, Adult and Non-formal Education
RANA	Reading And Numeracy Activity
SaME	State Agencies for Mass Education
SBMCs	School Based Management Committees
SSO	School Support Officers
SMoE	State Ministry of Education
SUBEB	State Universal Basic Education Board
TDTs	Teacher Development Teams
Tfs	Teacher Facilitators
TRCN	Teachers Registration Council of Nigeria
TWG	Technical Working Group
UBEC	Universal Basic Education Commission
UNICEF	United Nations Children's Fund

Executive Summary

This report provides findings of the implementation assessment of the Reading and Numeracy Activity (RANA) programme covering both the pilot and expansion periods in Katsina and Zamfara states in Nigeria. RANA is a collaboration between United Nations Children's Fund (UNICEF) and Family Health International (FHI360), funded by the UK's Foreign, Commonwealth and Development Office (FCDO). It is implemented by FHI360 in collaboration with state governments and local partners. The primary objective of the programme is to improve literacy and numeracy among girls and boys in primary education for both public primary schools and Integrated Qur'anic Schools (IQS). The RANA programme model is built upon a theory of change that aims to:

i. improve the utility and availability of mother-tongue-based literacy and numeracy materials and exercises;

ii. provide high-quality professional development and mentoring opportunities for teachers;

iii. inform and increase the involvement of local communities in supporting early grade reading; and

iv. encourage governmental support for education policy reform.

This RANA implementation assessment focused on Katsina and Zamfara states through a multi-stage sampling process, applying both non-random and random sampling techniques and ensuring a statistically significant sampling. The overall sample size was calculated using a confidence level of 95 per cent with a margin of error of 15 per cent. It is important to note that a 15 per cent margin of error was taken because accessing all schools, based on random selection, proved difficult due to insecurity and banditry concerns along with repeated school closures or low attendance rates of pupils. Although the computed level of accuracy at 15 per cent is the largest margin of error, all the findings are within this computed margin of error (see Descriptive Statistics in Annex I). Furthermore, the schools were selected through non-random sampling, while random sampling was applied for the selection of pupils. For the assessment, 40 schools and 541 pupils (234 girls) from grades 1 to 6 were selected. To draw a counterfactual analysis, 20 per cent of the sampled schools were considered control schools (i.e., schools where RANA interventions had not taken place). The selection of control schools took into careful consideration that no RANA or similar intervention(s) were taking place in the schools. This was ensured by engaging the State Universal Basic Education Boards (SUBEBs), Local Government Education Authority (LGEAs) and UNICEF in the school selection process.

Key Findings

The trends in baseline, midline and RANA assessments in 2022 show incremental progress in basic Hausa literacy

The basic literacy trends provide the basis for gauging the impact of RANA interventions on learning outcomes. Based on the baseline and midline data reported in the GEP3 logframe, the percentage of girls who achieved basic literacy (Hausa) skills for Grade 2 was 2.78 per cent in 2014-2015 and 4 per cent in 2016-2017. This data shows that girls achieving this literacy level could demonstrate at least some knowledge and skills within the range expected by the Primary 2 curriculum. Additionally, girls achieving within this range were able to: (i) identify similar sounds, (ii) read high-frequency words, (iii) spell high-frequency words with accuracy, (iv) copy a sentence, (v) sound out letter sounds, and (vi) read a short passage. Building on this, the implementation assessment revealed that 22.8 per cent of girls achieved basic literacy (Hausa) skills for Grade 2 in 2022. Along with improvements in basic literacy, other achievements in literacy and numeracy by RANA are listed below:

Children from RANA schools outperformed their counterparts from non-RANA schools both in literacy and numeracy

Letter sound identification

- 79 per cent of pupils (girls and boys) from RANA schools across all grades were able to identify 11 and more letter sounds per minute compared to 57 per cent of pupils from non-RANA schools.
- 73 per cent of girls from RANA schools across all grades were able to identify 11 and more letter sounds per minute compared to 62 per cent of girls from non-RANA schools.
- 83 per cent of boys from RANA schools across all grades were able to identify 11 and more letter sounds per minute compared to 54 per cent of boys from non-RANA schools.

[1]The definition of 'basic Hausa literacy' in the RANA Implementation Assessment at the end of the Girls' Education Project Phase 3 is not exactly the same as the baseline and midline. The percentage of girls in Grade 2 who meet the following three criteria are considered 'achieving basic Hausa literacy': 1) 11 and more correct letter sounds per minute; 2) 31 and more correct words per minute; and 3) 100 per cent correct responses for listening comprehension (this subtask had four parts).

Oral reading fluency

- 47 per cent of pupils (boys and girls) from RANA schools across all grades achieved oral fluency[2] compared to 22 per cent of pupils from non-RANA schools.
- Oral fluency speed is higher in RANA schools at 50 words per minute compared to 32 words per minute in non-RANA schools.
- 49 per cent of girls from RANA schools across all grades achieved oral fluency compared to 26 per cent of girls from non-RANA schools.
- 47 per cent of boys from RANA schools across all grades achieved oral fluency compared to 20 per cent of boys from non-RANA schools.

Numeracy skills

- Pupils from RANA schools correctly responded to over 61-65 per cent of addition and subtraction problems compared to only 45-50 per cent of pupils in non-RANA schools.
- In RANA schools, 6 per cent and 5 per cent of pupils scored zero in addition and subtraction tasks, respectively compared to 10 per cent and 17 per cent of pupils in non-RANA schools, indicating better performance of pupils in RANA schools.
- 84 per cent of pupils from RANA schools solved the word problem correctly compared to 74 per cent of pupils from non-RANA schools.

Teachers from RANA schools outperformed their counterparts from non-RANA schools

Moreover, 700 public primary school teachers and head teachers were trained during the RANA pilot phase (2015-2018) whereas 2,918 public primary school teachers were trained during the RANA expansion. In addition to this, 40 Master Trainers and 17 School Support Officers (SSOs) were trained in the pilot phase while in the expansion phase, 200 Teacher Development Teams (TDTs) were trained. As a result of professional training, it was observed that 83 per cent of teachers from RANA schools were able to follow and complete all the activities in the lesson compared to only 40 per cent of teachers from non-RANA schools. In RANA schools, 100 per cent of teachers used a variety of activities to help pupils achieve learning outcomes, while 80 per cent of teachers in non-RANA schools used activities for this purpose. In addition, 100 per cent of IQS facilitators engaged pupils to perform tasks using learning resources, while only 67 per cent of facilitators from non-RANA IQS did the same.

RANA facilitated the development of teaching and learning materials specifically by providing materials in the local language. This was achieved through the support of the College of Education (CoE) representatives, education faculty at the State University, SUBEBs and other experts. This was in line with the National Policy on Education (2013), which states that basic literacy and numeracy for Primary 1 to Primary 3 should be taught in the language of the immediate environment.

[2]The 'oral reading fluency' is achieved when pupils can read 31 and more correct words read per minute.

1. Introduction

1.1 Background

Nigeria is the most populous country in Africa, with approximately 216.7 million people[3] in which around 43 per cent of this population is under 14 years of age[4]. For over a decade, the Boko Haram insurgency and other militant groups operating in northern Nigeria have perpetuated conflict, violence and mass displacement impacting the population at large. This has severely affected access to education with most pupils having disrupted schooling due to the insurgency. As a consequence, there are about 12.7 million out-of-school children in Nigeria, the highest in the world, out of the 20 million worldwide[5]. More concerning is that girls of school-going age constitute 60 per cent of the out-of-school children in Nigeria[6]. Regarding the quality of education, about 50 per cent of in-school children are not learning as expected and therefore are unable to read or write[7]. Approximately 63 per cent of children who live in rural areas and around 84 per cent of children in the lowest economic quartile cannot read at all[8].

1.2 Programme description

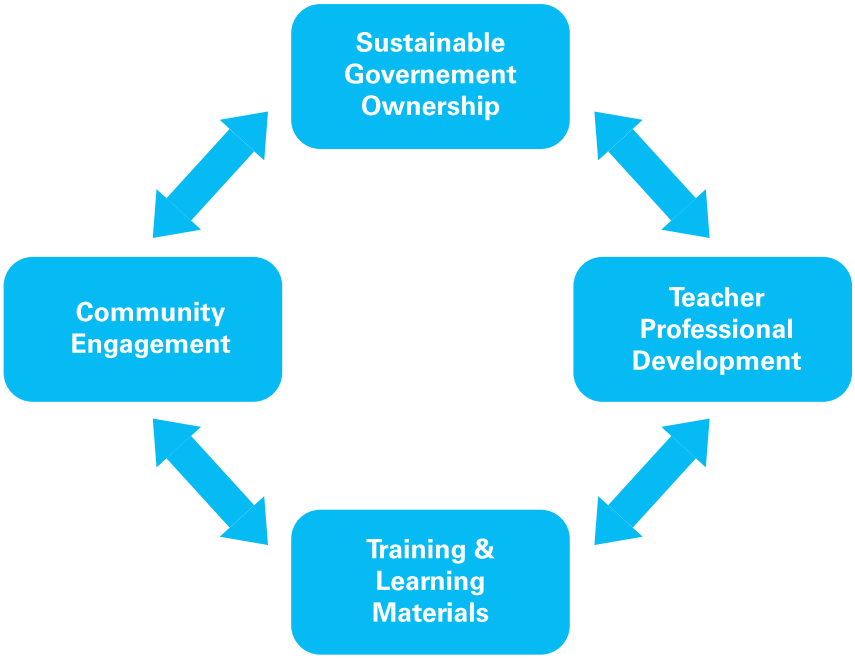
Funded by the UK's Foreign, Commonwealth & Development Office (FCDO) through UNICEF as part of Girls' Education Project Phase 3 (GEP3), FHI360 collaborated with the State Ministries of Education and affiliated agencies to implement the RANA pilot programme in Nigeria's northern states of Katsina and Zamfara. From 2015 to 2018, the programme was implemented in approximately 199 schools across these two states. The schools formed a subset of GEP3 and comprised of urban and rural public primary schools (60 per cent) and Integrated Qur'anic Schools (40 per cent). RANA aimed to improve the quality of reading and numeracy skills for girls and boys in primary grades 1-3. It enhanced the impact of GEP3 by using gender-sensitive methodologies in four major components of the education system including teacher professional development, teaching and learning materials, community involvement and sustainable government ownership (see Figure 1).

[3] https://www.unfpa.org/data/world-population/NG?msclkid=c488fb5bb4c111ecba1a80b13eb023d3
[4] https://www.unfpa.org/data/world-population/NG
[5] Education in Nigeria: Evaluation of the Effectiveness and Impact of SDG4.1 report, p. xvii.
[6] Education for Change: A Ministerial Strategic Plan (2018-2022), p. 10.
[7] Education in Nigeria: Evaluation of the Effectiveness and Impact of SDG4.1 report, p.4.
[8] Ibid.

Based on the success of the pilot programme in Katsina and Zamfara, the RANA Expansion Programme was implemented in 2018 by FHI 360 as part of GEP3 funded by FCDO and as part of More Out-of-School Children in School, Nigeria' project funded by Educate A Child (EAC) in collaboration with state governments. The programme has two major components: RANA Light and Haske[9] IQS Intervention.

RANA Light introduced the core elements of the RANA interventions to public primary schools in Kebbi and Niger states while the Haske IQS Intervention introduced a new basic literacy and numeracy programme to IQS in Bauchi, Katsina, Kebbi, Niger, Sokoto and Zamfara states. A series of activities were also built around these two major activities and included experimental research on syllabic and alphabetic instruction; monitoring and evaluation and strengthening school support systems; the development of Hausa reading materials for upper grades (P4-P6); the training of Master Trainers on reading promotion and community engagement; and technical assistance to Kano, Kaduna and Jigawa states on scaling the RANA Literacy Package. During COVID-19, RANA Expansion introduced literacy through media by using radio lessons to overcome the challenges to education caused by the lockdown.

Figure 1: Key components of RANA Programme



1.3 Assessment objectives

This assessment aims to review the implementation of RANA interventions in Katsina and Zamfara states with the goal of providing evidence on this innovative strategy, its effectiveness, value for money, drivers and factors of success in learning outcomes and lessons learned. Strategic recommendations for evidence-based advocacy and programming are also included. The following sub-objectives inform this assessment:

- To generate evidence on the extent to which the RANA programme has achieved its objective of improving literacy and numeracy skills for pupils in grades P1-P6;
- To identify factors that enable or hinder success including the types of systems and processes built, the effectiveness of these systems, and critical and dispensable elements of the intervention(s); and
- To offer practical recommendations for improvement of the model, cost-reduction, sustainability and scaling of RANA in Nigeria in both development and humanitarian contexts.

After a brief discussion on the methodology used for data collection and analysis, the report delves into the overall summary of the achievements according to the programmatic interventions of RANA. This is followed

[9]Haske is a Hausa word signifying "light" that connotes hope and progress.

by the assessment of RANA through the Economic Co-operation and Development (OECD) Development Assistance Committee's (DAC) evaluation criteria. The report concludes by expounding on implementation challenges and a presentation of recommendations.

2. Methodology

2.1 Assessment design(s)

The assessment design relied on two approaches: (i) the principles of counterfactual analysis for quantitative data analysis of basic literacy and numeracy and (ii) qualitative thematic analysis. In the counterfactual analysis, the outcomes of the RANA intervention were compared in the treatment schools (i.e., schools where RANA interventions took place) and control schools (i.e., schools without RANA interventions). Both the public primary schools and IQS were considered treatment/target schools and control schools. The qualitative data was based on the insights from teachers and IQS facilitators, implementing and support organizations (e.g., FHI 360, UNICEF staff, SAME, SUBEB, COE), parents and guardians, and state and local government departments (see Annex II) to substantiate the impact and sustainability of RANA interventions.

2.1.1 Assessment questions

The assessment questions were selected considering the OECD DAC criteria for evaluating development assistance. Table 1 provides an overview of the key assessment questions.

Table 1: Assessment criteria and key questions

Assessment criteria	Key assessment question
Relevance	How relevant and valid is the RANA intervention in improving learning outcomes?
Coherence	How coherent are RANA interventions with the educational context of the target areas?
Effectiveness	To what extent are the RANA programme outcomes/objectives being achieved?
Impact	Did the interventions produce the intended outcomes?
Equity and gender	Does the programme reach the most disadvantaged pupils?
Efficiency	What is the minimum cost required to scale up the RANA programme to all schools across the country?
Sustainability and scalability	What mechanisms have been put in place to ensure continuity of the programme?

2.2 Data sources and types

To collect qualitative data, purposive sampling was applied to engage relevant stakeholders and community members to conduct interviews and discussions from both states. For this, a total of 23 interviews and six focus group discussions (FGDs) were conducted. The overview of tools for data collection and the respective respondents are outlined in Table 2.

Table 2: Overview of respondents and assessment tools

No.	Study sample(s)/respondents	Assessment tool
1.	Pupils (public primary school and IQS)	EGRA/EGMA
2.	Teachers and IQS facilitators	Lesson observation checklist Semi-structured interview
3.	Head teachers and IQS proprietors	Structured interview
4.	Implementing and support organizations (e.g., FHI 360, UNICEF staff, AHNi)	Expert and RANA ecosystem stakeholder interviews
5.	Education departments (e.g., LGEA, SUBEB, COE, SAME, SMoE, NMEC, TRCN)	Expert and RANA ecosystem stakeholder interviews
6.	Monitoring and oversight (e.g., TWG, TFs, TDT, Master Trainers, SSO)	FGDs
7.	Community (e.g., SBMC, CBMC, Mothers' Associations, Community Reading Champions)	FGDs
8.	Public primary schools/IQS buildings	School assessment checklist

2.3 Sampling

The RANA implementation assessment covered Katsina and Zamfara states through a multi-stage sampling process, applying both non-random and random sampling techniques, ensuring statistically significant sampling. The overall sample size was calculated using a confidence level of 95 per cent with a margin of error of 15 per cent, and with a sample proportion of 50 per cent. The 95 per cent confidence level depicts a measure of certainty regarding how accurately the sample reflects the population within the chosen confidence interval. The margin of error is used to illustrate the variation in the results from the real population value while the sample proportion serves as the point estimate for the true population proportion. It is important to note that a 15 per cent margin of error was taken since accessing all schools based on random selection proved to be difficult. This was due to the security and banditry concerns, along with repeated school closures and low attendance rates. Although the computed level of accuracy at 15 per cent is the largest margin of error, all the findings are within this computed margin of error.

2.3.1 Selection of RANA schools and non-RANA schools

Given the security concerns, RANA schools could not be randomly selected. Hence, SUBEB, LGEAs and UNICEF identified accessible local government areas (LGAs) with fewer security-related concerns. From within the selected and accessible LGAs, RANA schools were identified. Given the repeated closure of schools, the head teachers/IQS proprietors were contacted to ensure the selected schools were open and functioning. In addition to the RANA schools, the assessment also selected non-RANA schools to draw counterfactual analysis and determine the effectiveness of RANA.

It is important to note that non-RANA schools (i.e., 'control schools') were selected from Katsina and Zamfara states to ensure that they were similar in all aspects. In other words, the schools and pupils were embedded in the same socio-economic context. The control schools had to be taken from communities where Hausa was the 'mother' tongue otherwise the learning assessments could not be conducted. The involvement of SUBEB, LGEAs and UNICEF in the school selection process ensured that no control schools had previous or current RANA interventions. Given the context of northern Nigeria and the focus on education, primarily basic literacy, RANA or related interventions (EAC, BESDA, ECW) are being implemented in nearly all states; thus, rendering the possibility of finding a control group without any type of education-related intervention was challenging.

For Katsina and Zamfara, schools were selected from the total pool of RANA pilot and expansion schools (primary and IQS). In order to draw a counterfactual analysis, 20 per cent of the sampled schools were considered non-RANA schools. From a total of 40 schools from Katsina and Zamfara, 32 were RANA schools while eight were non-RANA schools. It was ensured that the selected schools were comprised of both IQS and public primary schools. Other considerations included schools from rural or urban areas, and schools with different timeframes of RANA interventions to measure pupil performance against the time duration of the intervention.

The study also takes into consideration the impact of confounding variables, which hold the potential to influence learning outcomes for RANA schools and non-RANA schools. These variables primarily include the education levels of teachers, years and experience of teaching and status of certification. These variables help to explain the learning outcomes of non-RANA schools where they are performing similarly to RANA schools. Thus, the assessment elucidates that certain variables have an impact on both RANA and non-RANA schools and may influence learning outcomes.

2.3.2 Selection of pupils

For the selection of pupils, it was decided to choose a minimum of 12 pupils per school with at least two pupils from each grade (P1-P6) and a gender balance. The data collection teams were instructed to select every tenth pupil in each grade to ensure random selection. However, given that some schools had only lower grades (P1-P3) or upper grades (P4-P6), the data collection teams could not select a uniform set of 12 pupils from each school. Thus, more or less than twelve pupils were selected from each school at times. Overall, this resulted in an average of 13 pupils per school (13.25 exact average), ensuring that both genders were selected (see Table 3).

Table 3: Summary of sampling/assessment categories and sample sizes

No.	Assessment sampling categories	Total sample	RANA schools	Non-RANA schools
1.	Schools	40	32	08
2.	Pupils	541	438	103
3.	Teachers and IQS facilitators	40	32	08
4.	Head teachers and IQS proprietors	40	32	08
5.	Experts and RANA ecosystem stakeholders (e.g., FHI 360, UNICEF staff, AHNi)	07	07	-
6. 7.	Community (e.g., SBMC, CBMC, Mothers' Associations, Community Reading Champions)	04	04	-
8.	Education departments (e.g., LGEA, SUBEB, COE, SAME, SMoE, NMEC, TRCN)	16	16	-
	Monitoring and oversight (e.g., TWG, TFs, TDT, Master Trainers, SSO)	02	02	-

2.4 Data analysis

The data analysis of the impact assessment relied on the principles of counterfactual analysis, especially for learning outcomes for pupils (i.e., EGMA/RA). The data was processed through a systematic approach, which was applied for cleaning and verification through Microsoft Excel Sheets per the variables defined for this assessment to draw trends. The processed data was interpreted through tabular and graphical presentation required for quantitative analysis. All numerical variables are statistically significant at 1 per cent level of significance as evident from the probability values mentioned in Annex I.

The qualitative data analysis relied on two complementary techniques: thematic analysis and content analysis. The thematic analysis was used to identify major themes and sub-themes emerging from the responses of key stakeholders of the RANA programme. To determine the weight various themes carried, a content analysis technique was adopted to quantify and analyse the 'mentions' (i.e., number of occurrences) of the themes and sub-themes. To do this, the theme-based responses from each set of interviews were separated and tabulated in a Microsoft Excel file. All the sub-themes were categorised around emerging themes.

2.5 Quality assurance mechanism

2.5.1 Training of enumerators

To ensure quality assurance, a two-day methodology workshop was organized to provide the enumerators and their supervisors with in-depth knowledge of the questionnaire administration process under the implementation assessment study. As an initial step, the enumerators were recruited and trained. It was ascertained that the enumerators, comprised of locals from Katsina and Zamfara, spoke the local language(s) and represented both genders. This ensured that data collection from female children and respondents could be performed. A total of 24 enumerators were engaged, 12 for each state. The enumerators were also sensitized on the data collection process and ethical guidelines.

2.5.2 Monitoring of questionnaire administration

Another aspect of the quality assurance process comprised of the timely review and rigorous monitoring system put in place to ensure there were no detractions. This included engagement of a full-time team dedicated to ensuring the timely submission of data, physical verification and data cleaning was carried out. The monitoring allowed for:

- Daily verification of data
- Supportive supervision and daily review of field performance and feedback
- Troubleshooting in case of problems
- Review of assessment forms to ensure that no information was missed, fake or contradictory

2.6 Limitations

The Assessment Team identified the following limitations that influenced the performance of the assessment:

2.6.1 Availability of data

- The baseline data covering the pilot and expansion phases existed in various documents and covered only some of the indicators used by the Assessment Team. For instance, the total trainings given to teachers and IQS facilitators and information on the contents of those trainings, including the number of school enrolment drives, sessions with Mothers' Associations, SBMCs/CBMCs and reading promotion activities, were not fully updated for the RANA Expansion Phase. This undermined the capability of the Assessment Team to analyse improvements in various indicators of assessment. To rectify this gap, the assessment team included non-RANA schools as part of the study design.

- The data available for state-level partners (i.e., SUBEB and SaME) provided overall data. However, it proved challenging to delineate the contribution and effects produced by RANA interventions in comparison to other interventions in the state.

- Training-related data was obtained from individual sources and sources besides SUBEB and SaME which put the reliability of the data at stake as it could not be triangulated or corroborated.

2.6.2 Security situation

- The security situation in the states limited the capability of the Assessment Team to visit schools where partners in the state government indicated possible closure of schools and potential security threats. This impacted the selection of schools as they could not be completely random because the assessment team was limited to 'safe' LGAs for the primary data collection.

2.6.3 Selection of non-RANA schools

- The selection of non-RANA schools also presented an issue as schools in Katsina and Zamfara were all undergoing some form of education-related intervention such as EAC and BESDA. Thus, finding a clean control group of schools was challenging. Nonetheless, it was ascertained that the non-RANA schools did not include any RANA schools.

2.6.4 Availability of key informants

- Obtaining appointments for interviews with key informants was challenging due to their busy schedules. This resulted in a loss of time for assessment and undermined the plan.

2.6.5 Analysis of efficiency

- A significant number of questions under the Assessment Matrix were related to the monitoring of the programme, including financial data. However, obtaining access to this data proved to be a challenge. The absence of financial data meant that the Assessment Team was unable to objectively analyse the value for money (i.e., 'Efficiency') aspect of RANA.

3. Findings of RANA Impact Assessment

The findings in this section provide an overview of RANA programme accomplishments by using OECD DAC criteria to evaluate development assistance.

3.1 Relevance and coherence

3.1.1 Relevance of RANA with the local context

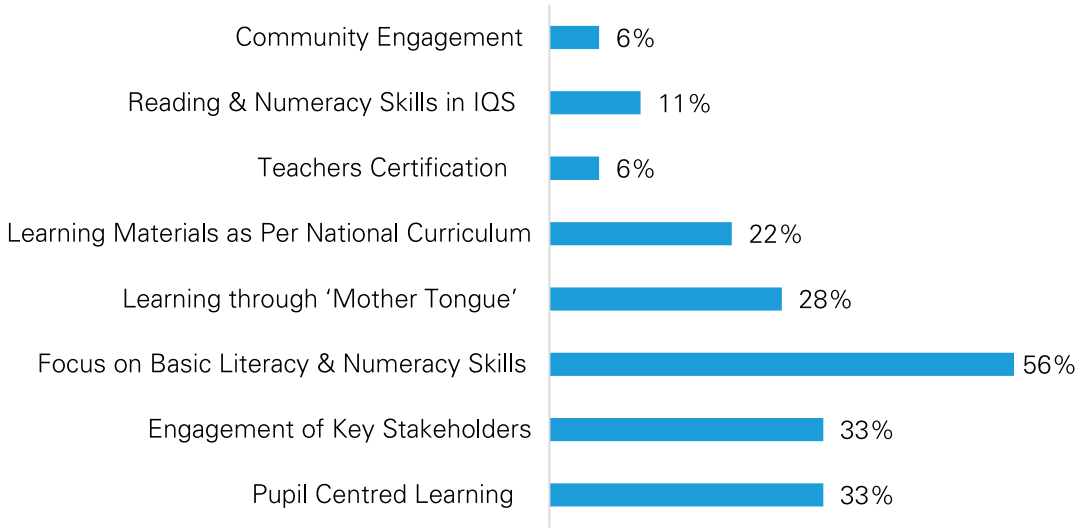
Nigeria has the highest number of out-of-school children (12.7 million)[10] with more out-of-school girls. Around 9.5 million out-of-school children concentrated in the north are reported to be enrolled in Quranic Schools[11]. One of the major barriers regarding access to education is the poverty of parents that pushes every family member, including children, to help with farming, tending livestock and other income earning measures[12]. Around 83 million Nigerians live below the poverty line[13]. In this context, RANA has focused on improving the access for out-of-school children to free basic education and enrolling out-of-school children, especially girls, in school.

3.1.2 Alignment between RANA and national education policies and systems[14]

The stakeholders affirmed the alignment between the RANA programme and national standards and policies and provided different aspects elucidating the alignment. The most recurring response was noted by 56 per cent of respondents who stated that 'RANA programme's focus on basic literacy and numeracy is aligned with the National Policy on Education (2013)'. Thirty-three (33) per cent of the respondents asserted that the alignment with national policies and standards was consistent because 'RANA programme involves key government stakeholders' such as MoE, UBE, SAME, SUBEB and SaME. Another 33 per cent shared that 'RANA programme and national learning standards are aligned through pupil-oriented learning'.

Another point of alignment, noted by 28 per cent of stakeholders, suggested that 'RANA programme interventions focus on learning through 'mother tongue'', (i.e., the language of the immediate environment). In this case, the learning materials and workbooks were developed in the Hausa language which helped improve learning outcomes in participating states (see Figure 2).

Figure 2: Alignment between RANA and national education policies and systems



[10] Federal Ministry of Education 2017, p.10

[11] http://www.creativeassociatesinternational.com/wp-content/uploads/2003/01/Integrated_Ed-Nigeria.pdf

[12] ECW Multi-Year Resilience Programme Nigeria, P.4

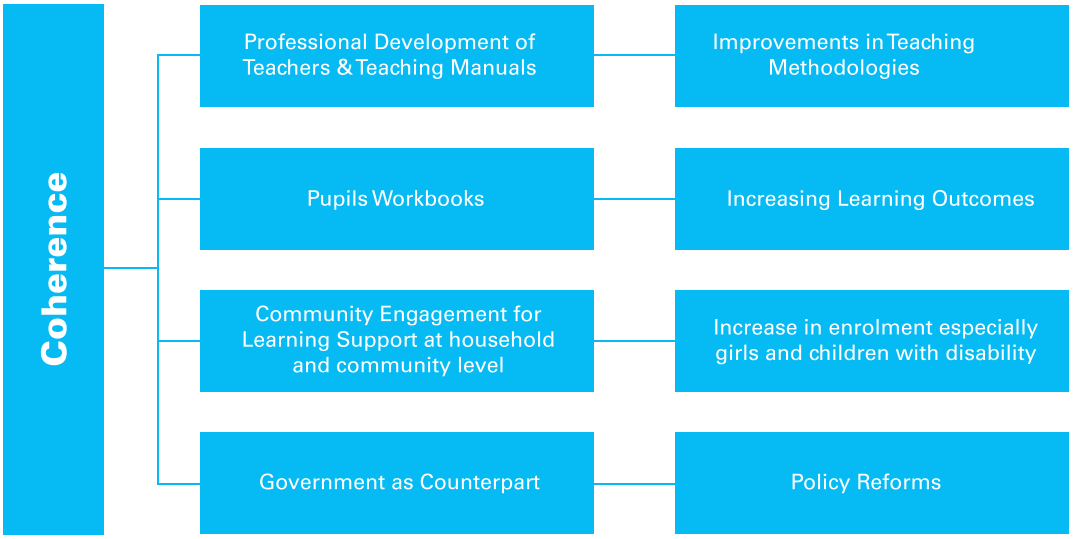
[13] https://www.worldbank.org/en/country/nigeria/overview

[14] The 2013 National Policy on Education provides broad-based guidelines on standards, procedures, strategies and the coordination roles necessary to ensure and sustain the delivery of quality education at all levels of government within Nigeria. This coordination is very important given that, by constitutional provision, education functions are shared between the federal, state and local governments.

3.1.3 Contribution of RANA in various aspects of education

The overall design of RANA offered support in the strategic focus areas of the Ministry of Education. The interviewed stakeholders confirmed that different key components of RANA are complementary to each other and contribute to various aspects of the education programme, as explained in Figure 3.

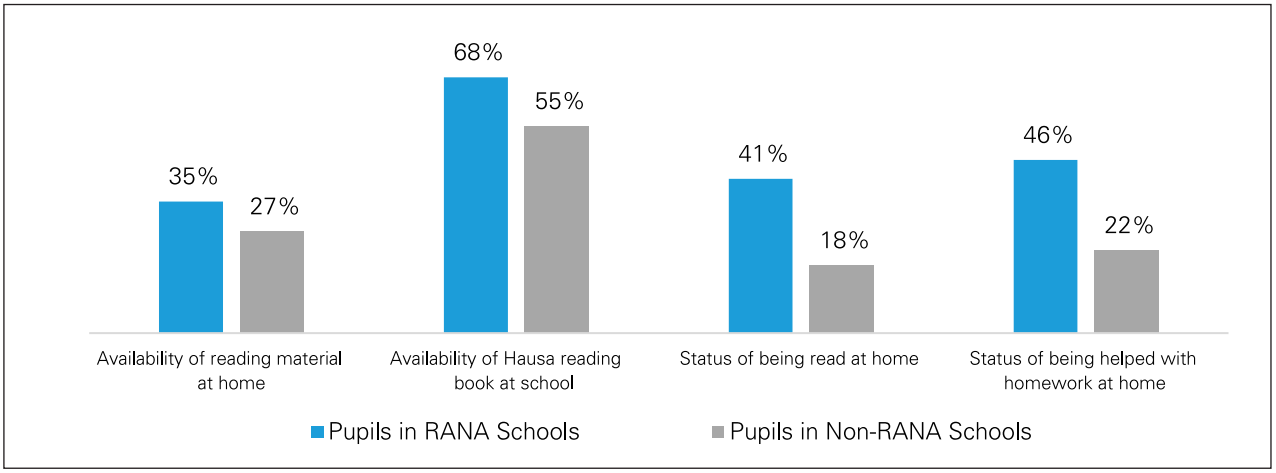
Figure 3: Contribution of RANA in various aspects of education



3.1.4 Availability of reading materials and help at home

In RANA schools, 68 per cent of pupils confirmed that they had Hausa reading books at school(s) compared to 55 per cent of pupils in non-RANA schools. In assessing the availability of reading material at home, RANA schools responded more positively (35 per cent) as compared to pupils from non-RANA schools (27 per cent). Additionally, 46 per cent of pupils from RANA schools shared that they received help at home with their studies while non-RANA schools indicated that pupils did not receive much help (22 per cent) at home (see Figure 4).

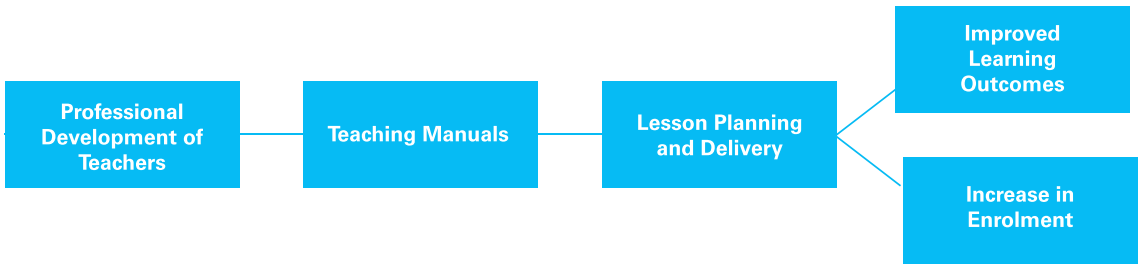
Figure 4: Contextual aspects influencing learning outcomes



3.2 Effectiveness

The effectiveness of the RANA programme is detailed in the interlinking of learning outcomes with effective teaching methodologies. Here, the teaching experiences of teachers and facilitators combined with the professional development trainings influence the delivery of lessons that consequently impact learning outcomes (see Figure 5).

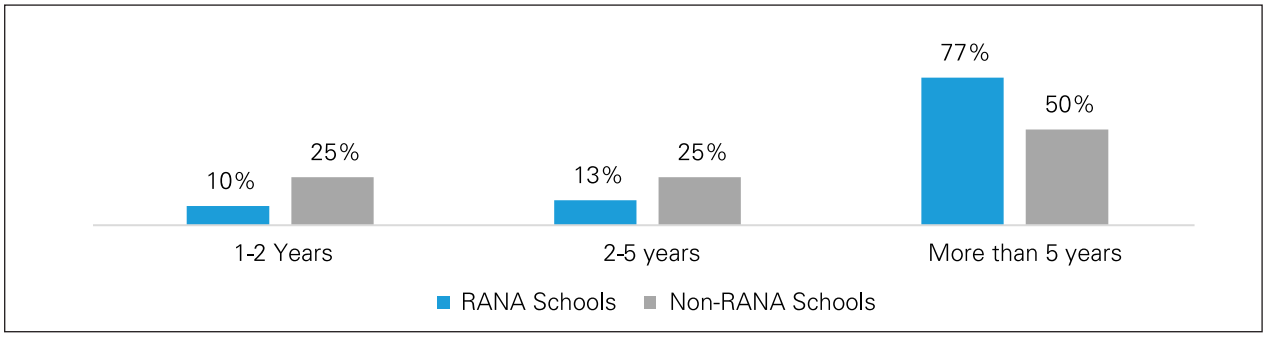
Figure 5: Factors impacting the effectiveness of learning outcomes



3.2.1 Teaching experiences and education of teachers and facilitators

Seventy-seven per cent of teachers and facilitators from RANA schools have more than five years of teaching experience while only 50 per cent of teachers and facilitators from non-RANA schools possess the same experience. The number of teachers and facilitators with 1-2 years or 2-5 years of experience is higher in non-RANA schools (see Figure 6).

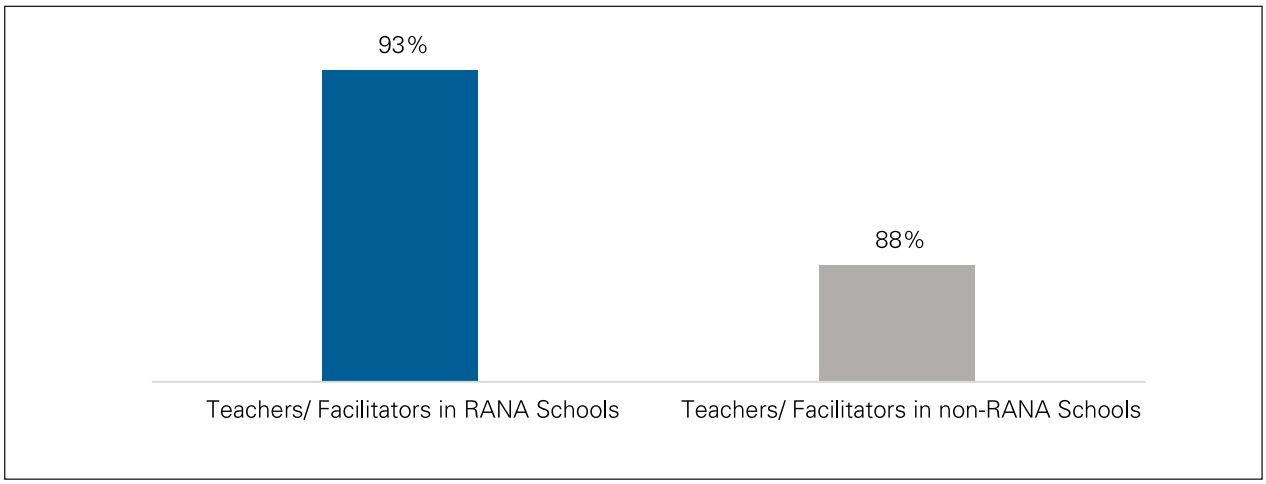
Fgure 6: Teaching experience and education of teachers and facilitators



3.2.2 Professional development trainings and certification of teachers and facilitators

In RANA schools, 93 per cent of teachers are certified while non-RANA schools have only 88 per cent of teachers certified. It was reported in interview discussions with key stakeholders that in the RANA pilot phase (2015-2018), 79 IQS facilitators were trained in Katsina and Zamfara. In the expansion phase, RANA trained 5,372 IQS facilitators and 2,686 proprietors (see Figure 7).

Figure 7: Professional pevelopment trainings and certification of teachers and facilitators

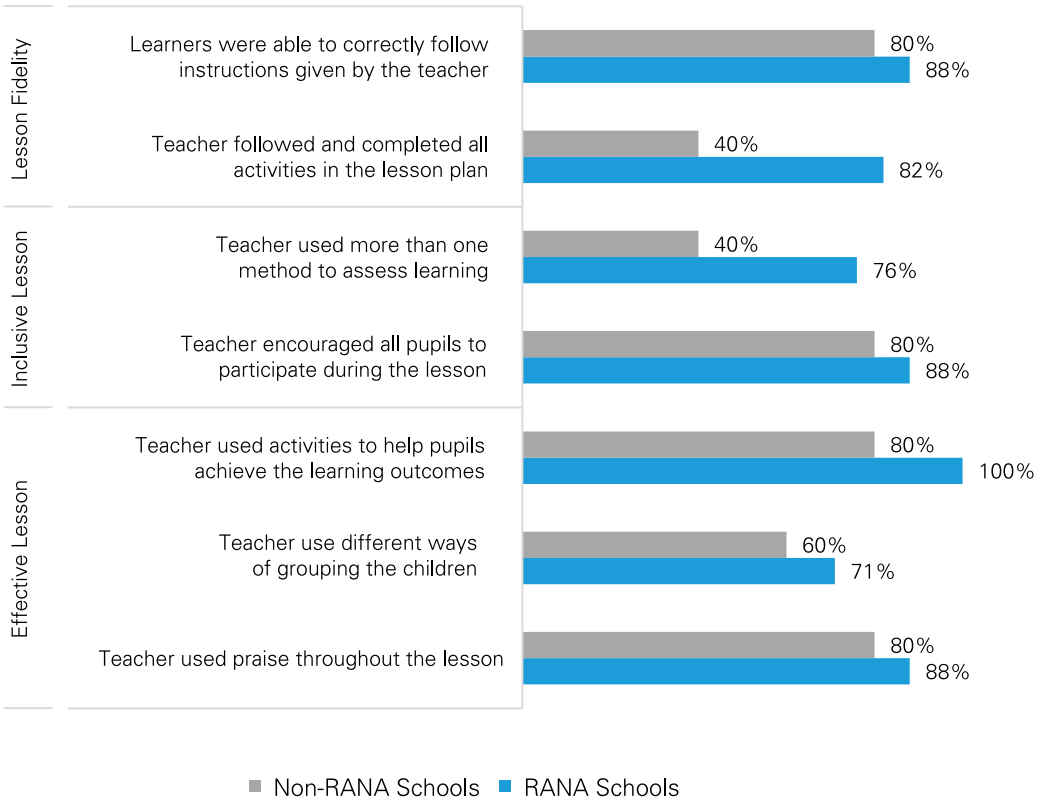


3.2.3 Lesson observations in public primary schools

Lesson observations in RANA schools were assessed on three main indicators: (i) effective lesson, (ii) inclusive lesson, and (iii) lesson fidelity. The findings, displayed in Figure 8, revealed that teachers in RANA schools performed better. For instance, under 'effective lesson', teachers used praise more than in non-RANA schools (88 per cent and 80 per cent respectively). Seventy-one per cent of teachers in RANA schools used different ways of grouping children compared to 60 per cent of teachers using this technique in non-RANA schools. In addition, 100 per cent of teachers in RANA schools used activities to help pupils achieve learning outcomes compared to 80 per cent in non-RANA schools.

Similarly, under 'inclusive lesson', in RANA schools, 76 per cent of teachers used more than one method to assess learning while only 40 per cent of teachers from non-RANA schools used different methods of assessment. In 'lesson fidelity', it was observed that 82 per cent of teachers from RANA schools were able to follow and complete all the activities in the lesson as compared to only 40 per cent of teachers from non-RANA schools.

Figure 8: Lesson observations in public primary schools

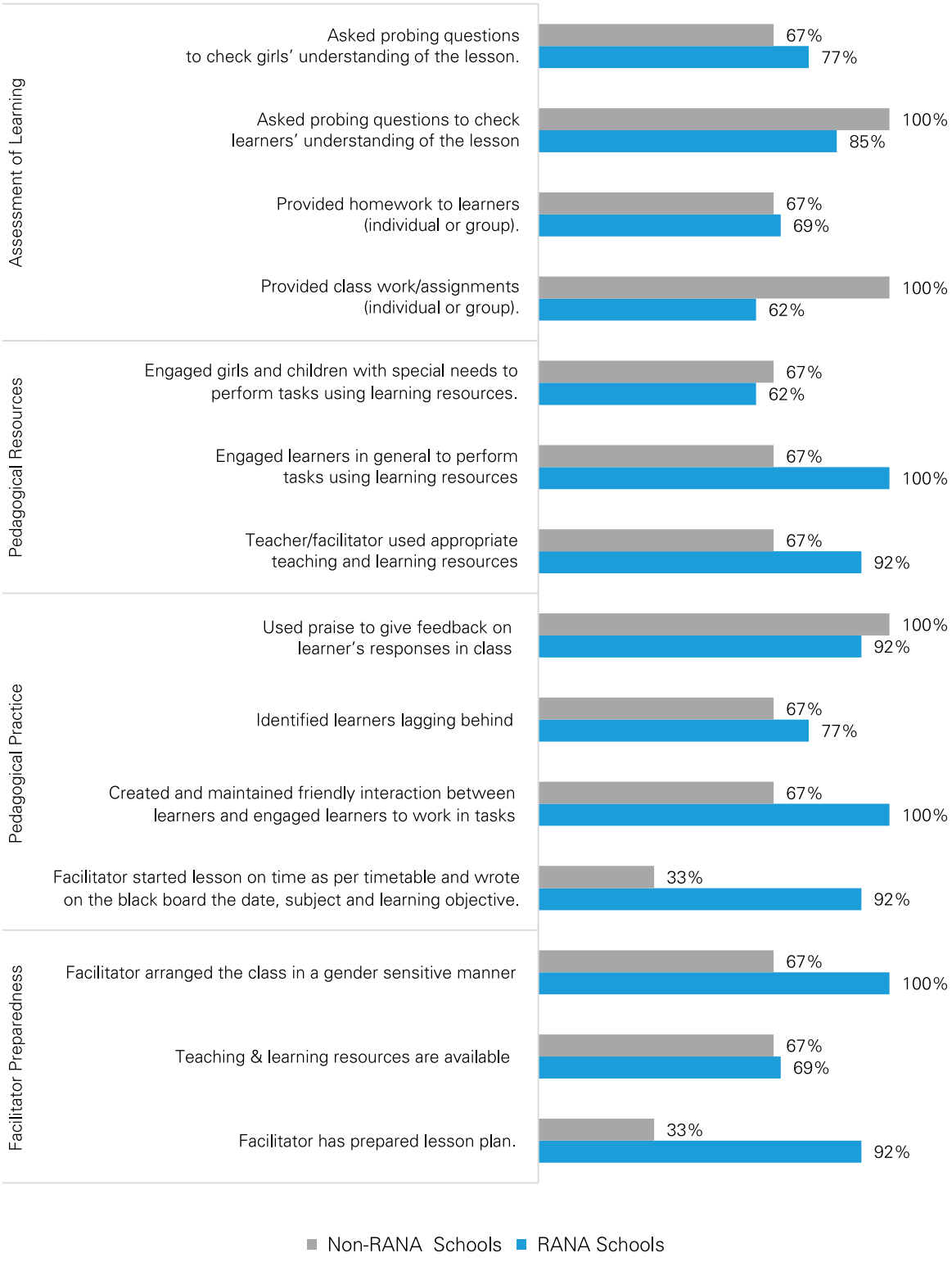


3.2.4 Lesson observations in IQS

The lesson observations in IQS assessed (i) facilitator preparedness, (ii) pedagogical practice, (iii) pedagogical resources, and (iv) assessment of learning. The data in Figure 9 shows that 92 per cent of RANA IQS facilitators prepared the lesson plan before coming to class as compared to 33 per cent of non-RANA IQS facilitators. Moreover, 100 per cent of RANA IQS facilitators arranged the class in a gender sensitive manner[15] as compared to 67 per cent of non-RANA IQS facilitators.

[15] RANA interventions in IQS focused on gender sensitization during lessons. For instance, before RANA interventions, the male pupils in IQS sat in the front while the female pupils sat in the back. This class arrangement did not ensure the full and active participation of female pupils. Through RANA interventions, IQS facilitators were sensitized to arrange the pupils in a manner that gave male and female pupils the chance to sit at the front of class with segregation ensuring gender sensitivity to the context and values.

Figure 9: Lesson observations in IQS

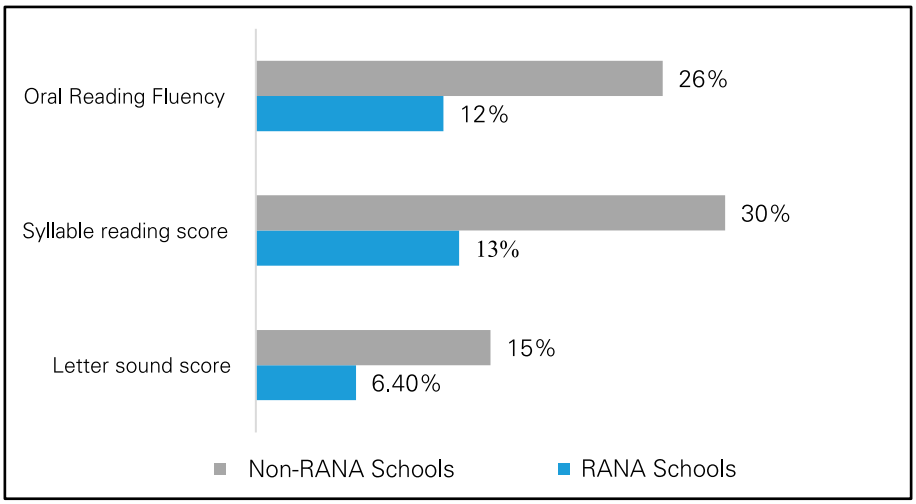


Additionally, 100 per cent of RANA IQS facilitators created friendly interaction(s) among pupils and engaged pupils to work in class as compared to 67 per cent in non-RANA IQS. The facilitators in RANA IQS also used teaching and learning resources (at 92 per cent) as compared to 67 per cent of non-RANA IQS facilitators.

3.2.5 Zero percent scores in literary and numeracy subtasks

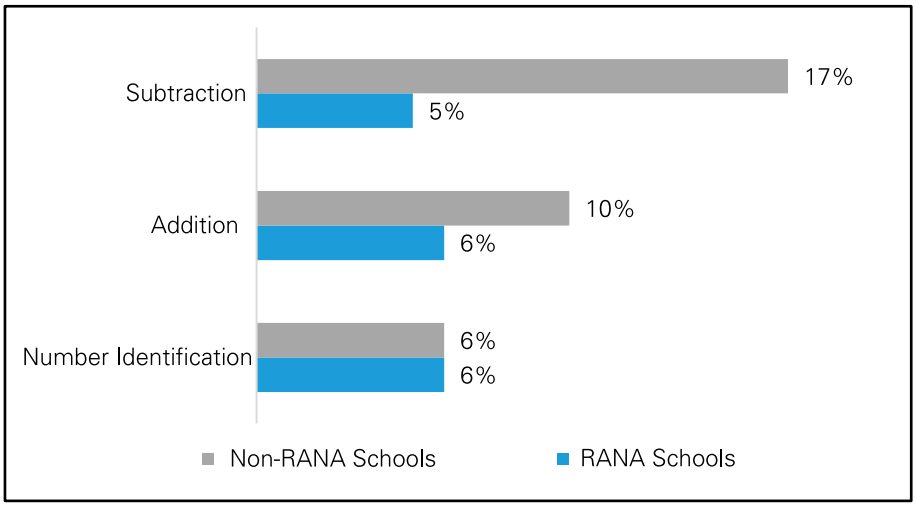
Non-RANA schools have higher zero percent scores in literacy subtasks compared to RANA schools. In oral reading fluency, 26 per cent of pupils from non-RANA schools scored zero compared to 12 per cent of pupils from RANA schools. Similarly, pupils in non-RANA schools attained higher zero percentage scores in syllable reading scores and letter sound scores (30 per cent and 15 per cent, respectively) (see Figure 10).

Figure 10: Zero percent score in literacy subtasks



For numeracy subtasks, Figure 11 shows that RANA schools have less zero scoring percentages in numeracy subtasks, especially in addition and subtraction, as compared to non-RANA schools. In number identification, scoring zero percentage of both RANA schools and non-RANA schools is the same.

Figure 11: Zero percent score in numeracy subtasks



3.2.6 Percent correct score in literary and numeracy subtasks

The comparison of correct scores between RANA schools (including both IQS and public primary schools) and non-RANA schools shows that overall, RANA schools performed better in literacy and numeracy subtasks (see Figure 12). In literacy, pupils from RANA schools can read 50 words per minute compared to pupils from non-RANA schools, who can only read 32 words per minute.

The findings in reading comprehension show that RANA schools have a higher percentage of correct reading comprehension (77 per cent) compared to non-RANA schools (76 per cent) (see Figure 13). In numeracy subtasks, 84 per cent of pupils from RANA schools solved the word problems correctly compared to 74 per cent of pupils from non-RANA schools. For subtraction numeracy subtasks, RANA schools performed at 62 per cent and 61 per cent respectively compared to non-RANA schools which performed at 50 per cent and 45 per cent, respectively (see Figure 14).

Figure 12: Literacy subtask correct scores

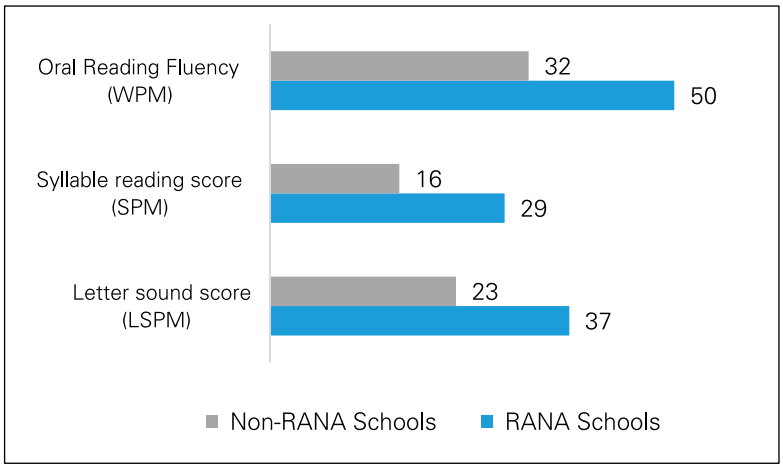


Figure 13: Reading comprehension percentage correct score

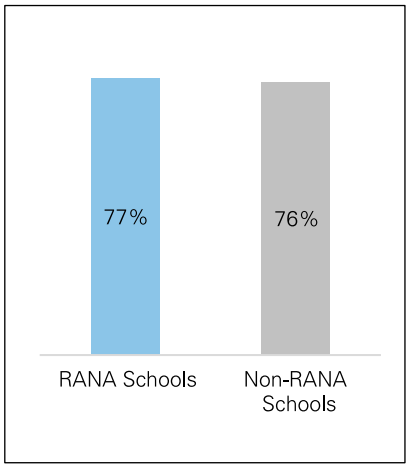
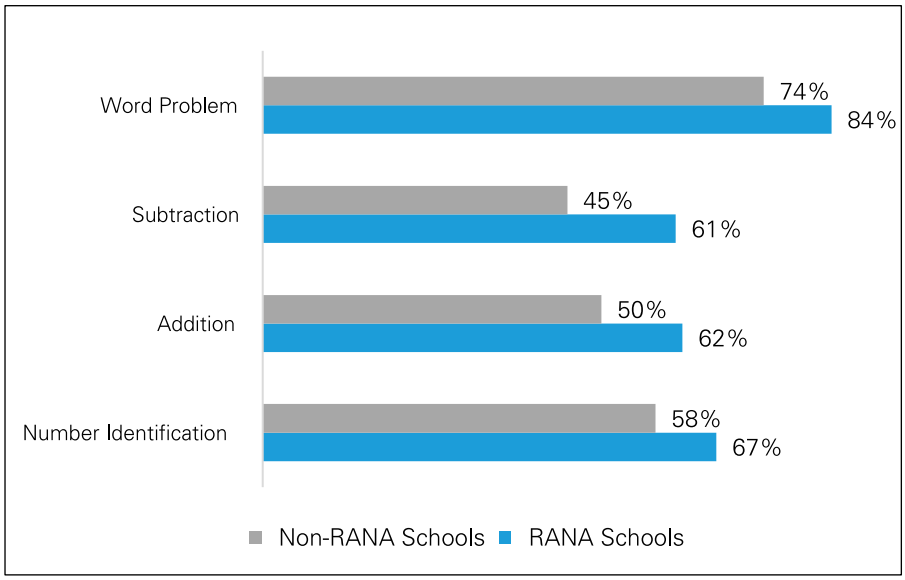


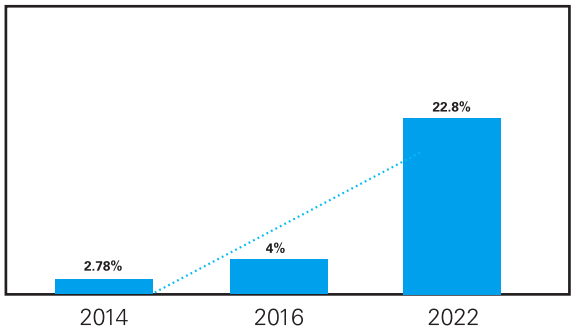
Figure 14: Numeracy subtask correct scores



3.2.7 Increase in basic literacy levels

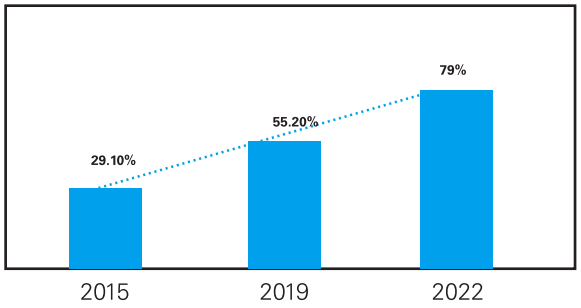
According to the baseline and midline data reported in the GEP3 logframe, the percentage of girls who achieved basic literacy (Hausa) skills for Grade 2 was noted at 2.78 per cent in 2014-2015, and 4 per cent in 2016-2017. The implementation assessment revealed that 22.8 per cent of girls achieved basic literacy (Hausa) skills for Grade 2 in 2022. The girls achieving within this range were able to identify similar sounds, read high-frequency words, sound out letter sounds and read a short passage. The trends in basic literacy are provided in Figure 15.

Figure 15: Percentage of girls who achieved basic Literacy (Hausa) skills for Grade 2



In addition, the RANA programme gauged literacy levels through two other primary indicators comprising of '11 and more correct letter sounds per minute' and '31 and more correct words read per minute'. In these indicators, the 2019 RANA report showed that 11 and more correct letter sounds increased from 29.1 per cent to 55.2 per cent[16]. The RANA implementation assessment reveals that the percentage of pupils who can correctly identify 11 and more letter sounds per minute increased from 55.2 per cent to 79 per cent (see Figure 16).

Figure 16: Percentage of pupils who can correctly identify 11 and more letter sounds per minute

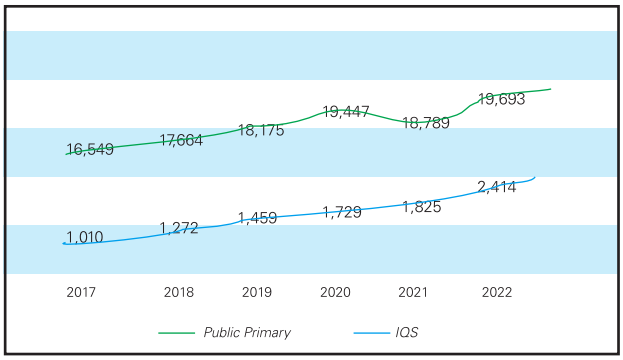


Additionally, percentage of girls who can read at a fluency of 31 words per minutes or higher (grade 2) increased from 14.7 in 2016 per cent to 45.6 per cent in 2022. Additionally, 47 per cent pupils (boys and girls) from RANA schools read 31 and more correct words per minute compared to 22 per cent pupils from non-RANA schools.

3.2.8 Trends in enrolment of pupils in RANA schools

Trends in the enrolment rates of pupils in RANA IQS and public primary schools show an overall increase from 2017 to 2022. While these findings are based on a select number of schools, they reinforce that the interventions by RANA are attracting pupils and their parents to invest in learning (see Figure 17).

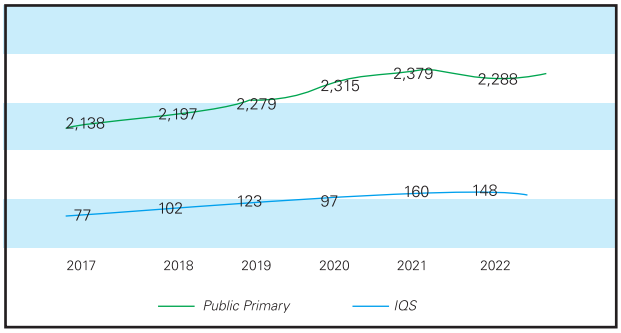
Figure 17: Trends in the enrolment of pupils (2017-2022)



3.2.9 Retention of pupils in RANA schools

The trends in retention reveal a modest increase, as shown in Figure 18. While the increase may not have been overwhelming, it has not declined, even during the COVID-19 lockdown.

Figure 18: Trends in the retention of pupils (2017-2022)

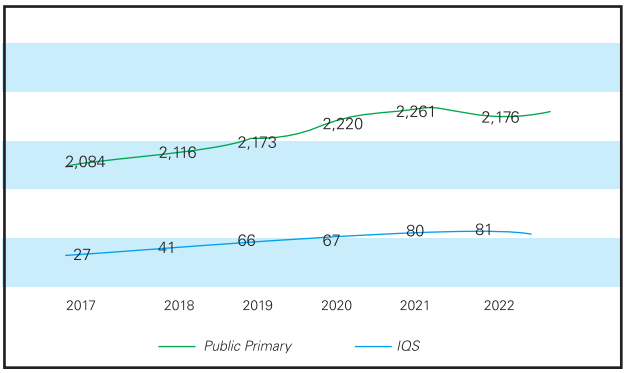


3.3 Equity and gender

3.3.1 Retention rate of female pupils

The focus on gender-related interventions was gauged through the retention rates of female pupils in IQS and public primary schools for a period covering 2017-2022. It was found that the overall enrolment and retention have been higher in public primary schools, but in both cases, it has been increasing or constant (see Figure 19).

Figure 19: Trends in the retention of female pupils (2017-2022)

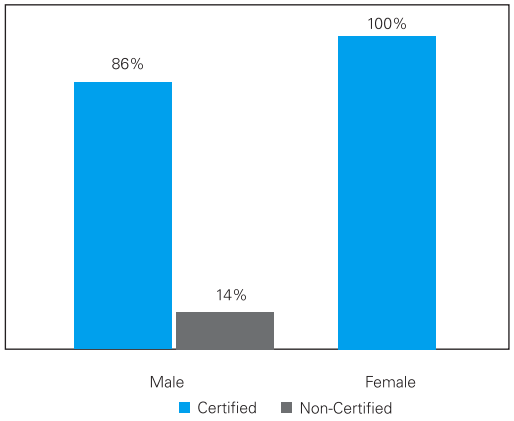


[16]These figures have also been mentioned in the RANA Expansion logframe.

3.3.2 Gender of certified teachers

The teachers and facilitators in RANA schools were found to be mostly certified. While all females (seven) were certified, some male teachers were not (4 out of 29) (see Figure 20).

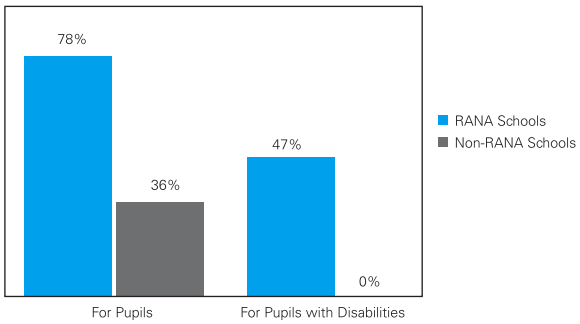
Figure 20: Gender breakdown of certified teachers and facilitators



3.3.3 Availability of learning materials for pupils with and without disabilities

The school assessment found that 78 per cent (of the assessed) RANA schools offered learning materials for pupils while only 36 per cent of non-RANA schools provided learning materials to pupils. Whereas 47 per cent of RANA schools also provided learning materials to pupils living with disabilities, none of the non-RANA schools did the same (see Figure 21).

Figure 21: Availability of learning materials for pupils with and without disabilities



3.4 Impact and sustainability

3.4.1 Policies and Reforms

Reforms in IQS teaching methodologies were introduced: A total of 67 per cent of respondents contended that 'RANA introduced reforms in IQS teaching methodologies'. The respondents elaborated that the system for lesson planning was introduced in IQS alongside the introduction of numeracy and literacy skills. The schedules in IQS were adjusted so there was more time to incorporate classes for numeracy and literacy. All these reforms in IQS were adopted because SaME adopted the approach of the RANA programme.

Minimum Standards of Primary Education were updated and National Reading Framework was drafted: Another significant reform, mentioned by 27 per cent of the respondents, was the drafting of the National Reading Framework and the revisit of the Minimum Standards of Primary Education by state government(s). The stakeholders elaborated that as an impact of RANA, the state government through the National Commission for Colleges of Education re-reviews the minimum standards of primary education. Similarly, the National Reading Framework aims to standardize reading requirements, measure the level of attainment in reading skills, and identify gaps where further concerted efforts would be required to improve reading.

Policy for teachers and facilitators was revisited: Another 20 per cent stated that the 'government revisited a policy for teachers and facilitators' which aims to investigate the terms of teacher recruitment, retention and deployment.

RANA programme interventions institutionalized by government agencies: Additionally, 14 per cent of respondents contended that state government(s) adopted RANA programme interventions institutionalizing the supervisory roles of government agencies (such as LGEAs and SUBEB).

SUBEB began participating in community engagement: In addition, 42 per cent of stakeholders responded that 'representatives of SUBEB began participating in community engagement activities' which was another indication of the engagement between state government(s) and communities. For instance, reading hubs, monthly data sharing at the LGEA level, weekly meetings and cluster meetings at schools were adopted to promote community engagement.

3.4.2 Professional development of teachers manuals and pupils workbooks re-produced

Planning and lesson delivery skills of IQS facilitators improved: In total, 40 per cent of key stakeholders shared that 'IQS facilitators have improved skills in planning and delivering lessons' as the result of professional development trainings.

Teachers' manuals and pupils' workbooks re-produced for non-RANA schools: Another 27 per cent of

stakeholders contended that reproducing and distributing 'teachers' manuals and pupils' workbooks in non-RANA schools' was another reform achieved. For instance, the interactive teaching and learning approach of the RANA programme was recommended by SAME to new and old IQS. Another 92 per cent of respondents conveyed that the adoption of these manuals and workbooks in Katsina and Zamfara is being scaled-up in all LGAs of northern Nigeria.

3.4.3 Community engagement

Role of community structures increased: Twenty per cent of stakeholders communicated that 'state government(s) increased the role and efforts of community structures such as SBMCs/CBMCs and Mothers' Associations.

Communities engaged in decision-making processes: The stakeholders were also crucial in outlining the engagement between state government(s) and communities in the promotion of literacy and numeracy. For this, 50 per cent of stakeholders asserted that community representatives including traditional leaders were engaged in some of the decision-making processes of RANA. This was further explicated through the role of SUBEB engaging communities in the planning, setting up, managing and monitoring of reading hubs. State government(s) also trained some of the community structures (e.g., SBMCs, CBMCs and CRHs) to enhance their productivity in supporting literacy and numeracy development.

Acceptance for enrolment, especially girls' education: Fourteen per cent of respondents believed the acceptance of the community towards girls' education improved. Signs of this include communities becoming more responsive and pupils taking active participation in learning song-based literacy and numeracy activities introduced through RANA lessons.

3.4.4 Learning outcomes

Pupils in IQS and public schools have equal literacy and numeracy skills: Fifty-three per cent of key stakeholders maintained that pupils in formal and non-formal schools have equal numeracy and reading skills. The stakeholders elaborated that because of RANA interventions, pupils from formal and non-formal schools understand letter sounds and blended words to form sentences. Additionally, pupils from RANA schools are able to support parents in trades and businesses with their numeracy abilities.

3.4.5 Integration of RANA in other projects

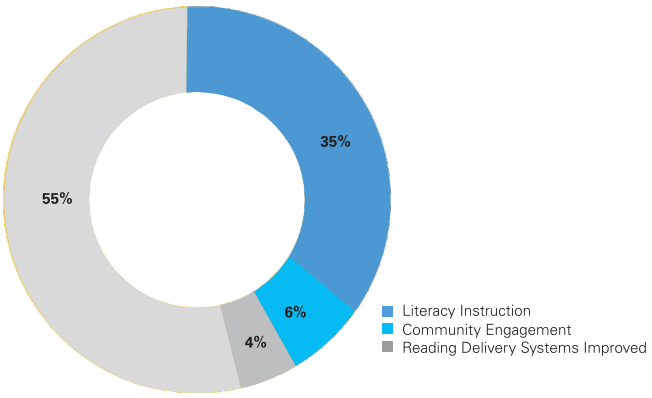
Fifty per cent of respondents conveyed that other educational projects such as Better Education Service Delivery for All (BESDA), Kanuri Arithmetic and Reading Intervention (KARI), Partnership for learning for All in Nigerian Education (PLANE) and Education Sector Support Programme in Nigeria (ESSPIN) have integrated teachers' and facilitators' manuals and pupils' workbooks in their design and are making sure that these are being utilized. They also communicated that SaME also institutionalized these manuals and workbooks.

Lastly, 8 per cent of stakeholders held the view that 'state government(s) engaged development partners to continue RANA strategies in non-RANA schools. This is another demonstration of the communities' role in improving literacy and numeracy. For instance, the SaME recommended the adoption of the RANA community-based engagement approach using TWG and CBMCs in support of IQS standards for the World Bank–BESDA project

3.5 Efficiency[17]

The efficiency of the RANA programme is analysed from two aspects: financials and focus on investments made in different key components of RANA[18]. The actual cost per key element of the RANA approach for the pilot phase (2015-2018) is detailed and explained in Figure 22. The highest investment appears in management (55 per cent) followed by literacy instructions (35 per cent). The other two key elements, community engagement (6 per cent) and reading delivery system (4 per cent), received the lowest budget investment. The total budget for the RANA pilot phase as reported by key stakeholders was ₦1,629,028,225. The stakeholders also confirmed that the pilot phase reached out to 50,000 children resulting in a cost per child of ₦814.

Figure 22: Budget distribution RANA pilot phase



[17]Data to assess efficiency and value for money proved to be difficult as reliable and updated data could not be obtained. The data acquired in interviews or from reports have been used to shed some light on the efficiency of the RANA programme.

[18]A similar breakdown for the RANA expansion phase could not be obtained, the overall total expenditure for the expansion was reported at around US$4,123,338.

The close engagement of government agencies as counterparts of the RANA programme helped in:

- securing policy reforms
- increasing the role of government and communities in monitoring school performance
- continuing a system for the professional development of teachers to improve learning outcomes
- integrating literacy and numeracy in IQS
- contributing to improved access of out-of-school children to reading and numeracy skills
- continuing the provision of teaching methodology manuals and pupil workbooks
- contributing to learning outcomes as explained in 3.2 *Effectiveness.*

Since the investments made in these costed elements have strengthened the system, it is likely that the scaling-up costs would be much lower than the initial investments.

4. Key Challenges

Responses from key informant interviews were analysed to assess the challenges encountered in improving literacy and enrolment in Katsina and Zamfara states (see Figure 23).

4.1 Shortage of qualified teacher(s)

The findings showed 56 per cent of respondents highlighted the 'shortage of qualified teacher(s)' as the most prominent challenge. The respondents further elaborated that teachers are not exposed to regular professional and capacity-building trainings that help improve and track their competence and teaching skills.

4.2 Insecurity

The findings show that 44 per cent of respondents identified 'insecurity' as an impediment to access to education in northern Nigeria. Respondents explained that insecurity persists due to the frequent attacks on communities and schools by bandits; hence, parents are reluctant about sending their children to schools where they may be unsafe.

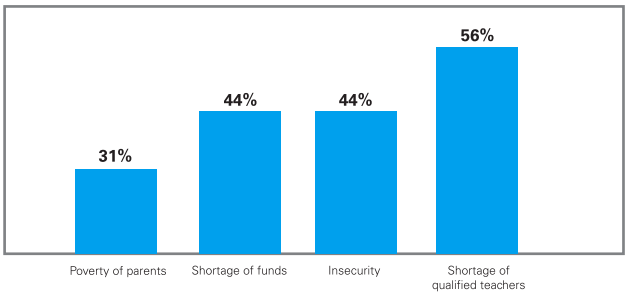
4.3 Shortage of funds

Another 44 per cent of key stakeholders identified the 'shortage of funds' as a challenge to improve the quality of education in northern Nigeria. The limited funds of state government(s) for education curtail state agencies from providing the required teaching and learning materials that would help improve the quality of education.

4.4 Poverty of parents

Lastly, 31 per cent of key informants stated that the 'poverty of parents' was another leading factor hindering the improvement in literacy and enrolment in northern Nigeria. The respondents elaborated that despite the willingness of parents to enrol their children in schools, the prevailing cost of schooling, including school uniforms, basic learning materials and levies, constrained their ability to facilitate the education of their children.

Figure 23: Key challenges



5. Key Learnings of RANA

The state government(s) learned that if host communities are engaged in promoting educational activities such as reading and numeracy activities, the communities are likely to take ownership and support the education process (see Figure 24).

5.1 Community engagement improves school enrolment

Responses by 43 per cent of key stakeholders highlighted that community engagement improves school enrolment. For instance, direct house-to-house campaigns for school enrolment led by SBMC members gave more ownership to the communities and helped in mobilizing parents.

5.2 Monitoring costs reduced when community begins monitoring

Forty-three per cent of stakeholders reported that the state government(s) is saving costs due to the community effort(s) to improve learning. The government(s) realized that to reach to parents of pupils, they needed to work with community structures such as the SBMCs/CBMCs and Mothers' Associations. SBMCs in Katsina State, for example, were reportedly carrying out minor repairs and renovations using their own resources, and the government acknowledged these contributions.

5.3 Community monitoring creates consciousness in teachers to maintain standards

Fourteen per cent of respondents contended that community stakeholders, such as SBMCs/CBMCs, monitor the standards of teaching in the schools.

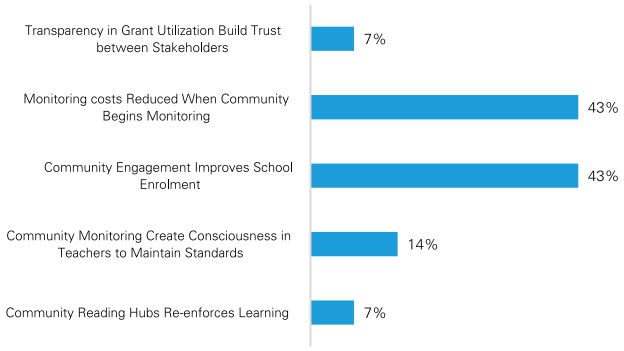
5.4 Transparency in funds utilization builds trust between stakeholders

Seven per cent of respondents maintained that 'transparency in grant utilization' was a result of community engagement. For instance, trainings on fund management and resource mobilization helped SBMCs to mobilize their communities to support schools in cash and kind.

5.5 Community reading hubs reinforces learning

Another 7 per cent of respondents asserted that community stakeholders reinforce learning at the community or household level. In Katsina State, community stakeholders reinforce learning at the community level through the management of learning hubs.

Figure 24: Key learnings of RANA



6. Recommendations

To address existing gaps and challenges, the following recommendations are suggested:

6.1 Trainings of teachers and community stakeholders on school safety and security

In the discussions with key stakeholders and communities, 44 per cent communicated that insecurity and banditry-related concerns hindered parents from sending their children to schools. The introduction of safety protocols and rescue trainings, along with emergency response preparedness measures for teachers and facilitators and community stakeholders, can quell the insecurity-related concerns of parents. Moreover, community-based security systems could also be designed and tested while RANA is scaled.

6.2 Primary research on out-of-school children to improve enrolment in schools

A particular focus of RANA community engagement was to encourage and improve enrolment of children by mobilising their parents. The trends in the enrolments of pupils in RANA schools show a modest increase overall (from 16,549 pupils in public primary schools in 2017 to 19,693 pupils in 2022). However, comprehensive primary research on out-of-school children in Katsina and Zamfara states would facilitate design strategies to improve enrolment trends.

6.3 Integrate cascade model to scale training of teachers

The professional development of teachers contributes to the learning outcomes of pupils. The assessment finds that 100 teachers in RANA schools used activities to help pupils achieve learning outcomes compared to 80 per cent in non-RANA schools. It is recommended that the cascade model be integrated into the RANA programme to scale-up professional trainings for teachers in non-RANA schools.

6.4 Increase the distribution of pupils' workbooks

It was contended by 83 stakeholders that having access to pupils' workbooks helped to improve learning. In this view, the broader dissemination of workbooks, with reduced costs such as recycling or reusing workbooks among pupils or using cost-effective printing materials, can improve access to learning materials in schools and communities and contribute positively to learning outcomes in pupils.

6.5 Establish targets for improving basic literacy

Although an increasing trend of learning outcomes in girls who achieved basic literacy skills for Grade 2 was noted (22.8 per cent), this is still one of the lowest rates compared to other countries. It is recommended that LGA targets be established to improve learning outcomes in schools and that incentives are offered to teachers to achieve these outcomes. Recognizing teachers' efforts through financial means might help in increasing the motivation and commitment of teachers.

6.6 Incentivize certification of teachers

The professional development of teachers is one of the important investments that directly contributes to improvements in the teaching methodology and learning outcomes. It is recommended that the certification developed with FME, Teachers' Registration Council of Nigeria (TRCN), NCCE, SUBEBs, and COEs is further expanded to provide opportunity for professional development and career growth for RANA teachers. In doing so, the state governments can offer increase in salary to in-service teachers who achieve certification in professional development trainings.

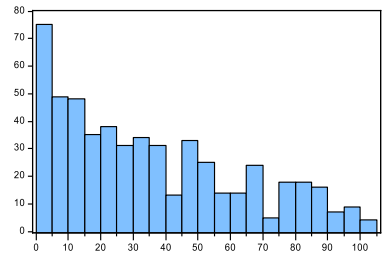
6.7 Introduce role model schools

The performance levels of different schools vary depending on the competence levels of teachers, the interest of community stakeholders and other external factors. It is recommended that a system be introduced for declaring 'role model schools' for those schools that perform better than others and achieve the agreed target for learning outcomes. Role model schools and schoolteachers may also be awarded additional financial support or incentives. This might help in creating an overall competitive environment and improving learning outcomes.

7. Annexes

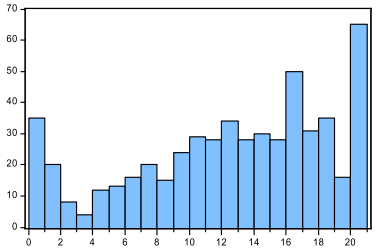
Annex I: Descriptive Statistics

1. EGRA/EGMA[19]



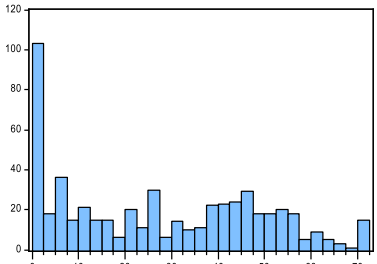
Series: LETTER_SOUND_IDENTIFICAT
Sample 1 541
Observations 541

Mean	34.49908
Median	28.00000
Maximum	100.0000
Minimum	0.000000
Std. Dev.	27.79546
Skewness	0.628373
Kurtosis	2.311238
Jarque-Bera	46.29621
Probability	0.000000



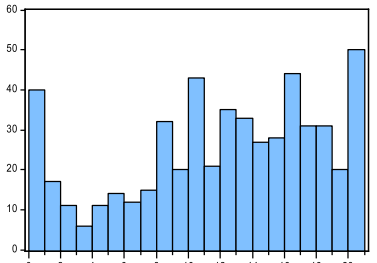
Series: ADDITION_NUMBER_OF_ITEMS
Sample 1 541
Observations 541

Mean	12.02218
Median	13.00000
Maximum	20.00000
Minimum	0.000000
Std. Dev.	6.061984
Skewness	-0.527008
Kurtosis	2.246617
Jarque-Bera	37.83702
Probability	0.000000



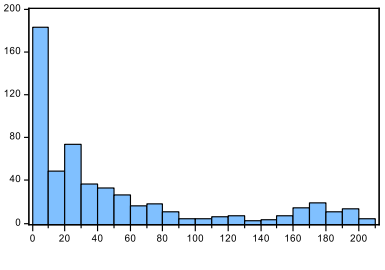
Series: SYLLABLE_IDENTIFICATION_
Sample 1 541
Observations 541

Mean	26.87061
Median	25.00000
Maximum	70.00000
Minimum	0.000000
Std. Dev.	21.36027
Skewness	0.219041
Kurtosis	1.752694
Jarque-Bera	39.39578
Probability	0.000000



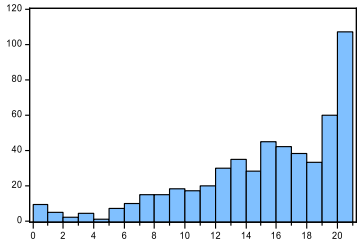
Series: SUBTRACTION_NUMBER_OF_IT
Sample 1 541
Observations 541

Mean	11.57301
Median	12.00000
Maximum	20.00000
Minimum	0.000000
Std. Dev.	6.017623
Skewness	-0.451102
Kurtosis	2.201792
Jarque-Bera	32.71044
Probability	0.000000



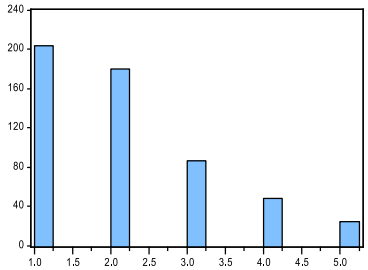
Series: ORAL_READING_FLUENCY_NUM
Sample 1 541
Observations 541

Mean	47.05915
Median	25.00000
Maximum	201.0000
Minimum	0.000000
Std. Dev.	57.96046
Skewness	1.411053
Kurtosis	3.741818
Jarque-Bera	191.9326
Probability	0.000000



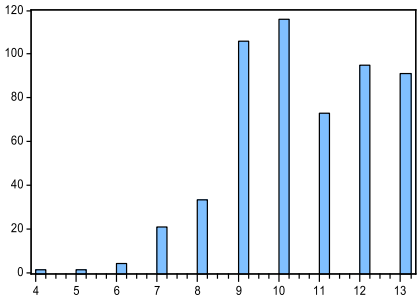
Series: MISSING_NUMBER_NUMBER_OF
Sample 1 541
Observations 541

Mean	14.73383
Median	16.00000
Maximum	20.00000
Minimum	0.000000
Std. Dev.	4.937324
Skewness	-0.974606
Kurtosis	3.403526
Jarque-Bera	89.31604
Probability	0.000000



Series: WHAT_GRADE_WERE_YOU_LAST
Sample 1 541
Observations 541

Mean	2.094270
Median	2.000000
Maximum	5.000000
Minimum	1.000000
Std. Dev.	1.132183
Skewness	0.918035
Kurtosis	3.040756
Jarque-Bera	76.02893
Probability	0.000000

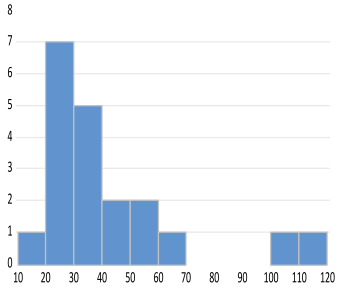


Series: AGE
Sample 1 541
Observations 541

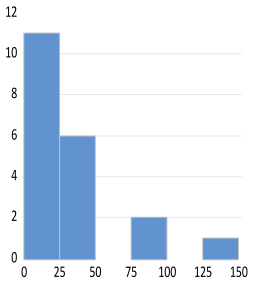
Mean	10.50647
Median	10.00000
Maximum	13.00000
Minimum	4.000000
Std. Dev.	1.766576
Skewness	-0.294128
Kurtosis	2.550142
Jarque-Bera	12.36222
Probability	0.002068

[19] All numerical variables are statistically significant at 1 per cent level of significance as evident from the probability values mentioned in the graphs in Annex I.

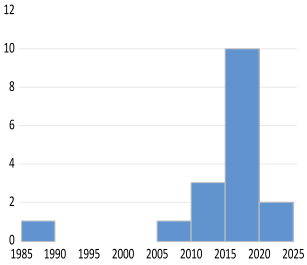
2. Lesson Observation[20]



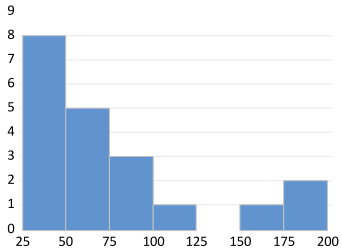
Series: CLASS_SIZE__MALES_	
Sample 1 20	
Observations 20	
Mean	40.25000
Median	30.00000
Maximum	115.0000
Minimum	16.00000
Std. Dev.	26.45726
Skewness	1.727743
Kurtosis	5.133309
Jarque-Bera	13.74282
Probability	0.001037



Series: CLASS_SIZE__FEMALES_	
Sample 1 20	
Observations 20	
Mean	33.10000
Median	22.00000
Maximum	132.0000
Minimum	0.000000
Std. Dev.	31.45741
Skewness	1.864699
Kurtosis	6.110477
Jarque-Bera	19.65290
Probability	0.000054

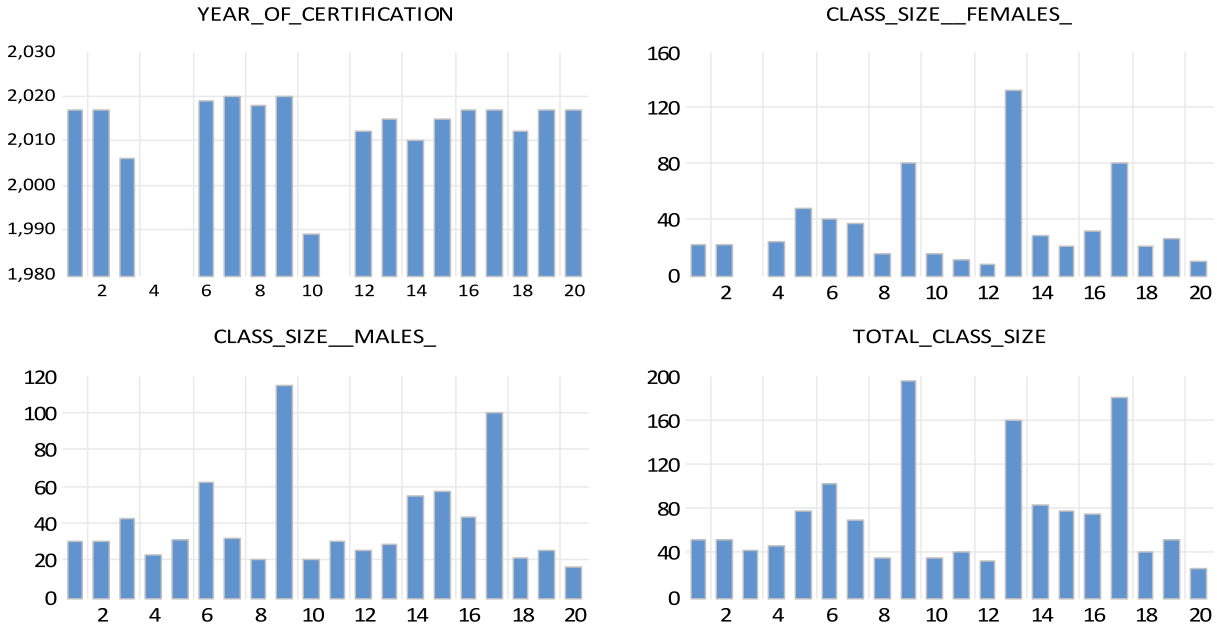


Series: YEAR_OF_CERTIFICATION	
Sample 1 20	
Observations 17	
Mean	2014.000
Median	2017.000
Maximum	2020.000
Minimum	1989.000
Std. Dev.	7.424621
Skewness	-2.429091
Kurtosis	8.718705
Jarque-Bera	39.88308
Probability	0.000000



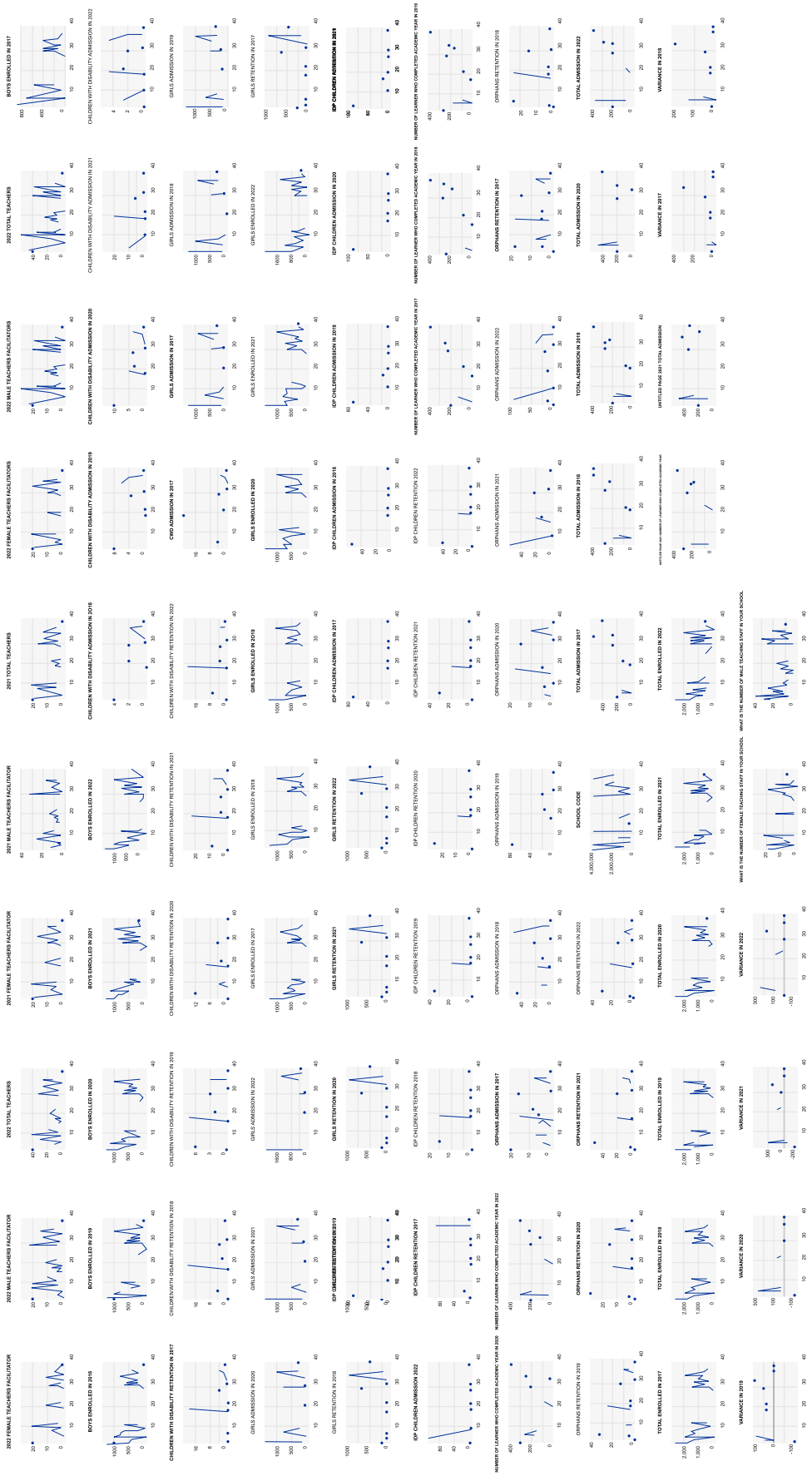
Series: TOTAL_CLASS_SIZE	
Sample 1 20	
Observations 20	
Mean	73.35000
Median	51.00000
Maximum	195.0000
Minimum	25.00000
Std. Dev.	49.75019
Skewness	1.419152
Kurtosis	3.823228
Jarque-Bera	7.278064
Probability	0.026278

3. Lesson Observation-PPS



[20] In Lesson Observation, total class size is significant at 5 per cent level of significance whereas all other variables are significant at 1 per cent level of significance

4. Structured Questionnaires with Head Teachers and IQS Proprietors



Annex II: Summary of Qualitative Data Collection

Tool	Katsina State	Zamfara State	...	Total
Tool 5: Semi-structured interview for Officials of Education Department(s)	6	6	4	16
Tool 6: Semi-structured interview for implementing and support organizations			7	7
Tool 7: Discussion guide for SBMCs/CBMCs	1	1	-	2
Tool 8: Discussion guide for Mothers' Associations	1	1	-	2
Tool 9: Focus group discussion guide for Monitoring and Oversight Teams (TDTs/MTs/TWG, SSOs)	1	1	-	2

No.	Tool	LGA/State	Date	Respondent(s)/Role/ Organization	Gender
1	Tool 5: Semi-structured interview for Officials of Education Department(s)	Kastina	08.08.22	Abdulbaki Lawal Lema, Assistant Director of Literacy, SAME	Male
2		Kastina	08.08.22	Bala Abdullahi, TWG RANA, Director of Literacy, SAME	Male
3		Kastina	10.08.22	Nura Garba Bakori, Lecturer, Teacher Educator and National Master Trainer (RANA), Technical Education Officer, CoE	Male
4		Kastina	10.08.22	Badara Ado, Deputy Director, SUBEB	Male
5		Kastina	11.08.22	Mansir Yaro Usman, Lecturer, Federal College of Education, Katsina	Male
6		Kanakara, Kastina	11.08.22	Jemila Ahmed, LEA Desk Officer, Kankara	Female
7		Zamfara	17.08.22	Luba Ibrahim, Deputy Executive Director, SAME	Female
8		Abuja	17.08.22	Marry, TRCN	Female
9		Abuja	18.08.22	Aleshin Olumayowa, Director Teacher Development, UBEC	Male
10		Zamfara	18.08.22	Abubakar Garba and Aminu Kanoma, Director Quality, SUBEB	Male
11		Zamfara	18.08.22	Abdurrahman Muhammad, UNICEF Focal Person, State Ministry of Education	Male

12		Zamfara	19.08.22	Dr. Salisu Dalhatu, UNICEF Focal Person, State CoE Maru	Male
13		Zamfara	19.08.22	Ibrahim Yahaya, RANA Coordinator, State CoE	Male
14		Abuja	19.08.22	Aisha Aminu Bamanga, Assistant Chief, UBEC	Female
15		Abuja	19.08.22	Dr Folake O. Olatunji-David, Director, Basic Education/National Programme Coordinator, GPE-TESS at Federal Ministry of Education Nigeria	Female
16		Shinkafi, Zamfara	20.08.22	Umaru Nomau, Education Secretary, LGEA	Male
17	Tool 6: Semi-structured interview for implementing and support organizations	Kastina	06.08.22	Saka Adebayo Ibrahim, Education Officer, UNICEF	Male
18		Abuja	08.08.22	Mika'ilu Ibrahim, Education Advisor, British High Commission Nigeria (formerly RANA Technical Advisor at FHI 360)	Male
19		Washington	11.08.22	Emily Koester, Technical Advisor, FHI 360	Female
20		Kaduna, Katsina	22.08.22	Salim Sadiq, Senior Technical Advisor, PLANE W1, AHNI	Male
21		Sokoto	23.08.22	Tukur Labbo-Yabo, Education Officer, UNICEF	Male
22		Katsina	24.08.22	Safiya Usman Nagago, State Amirah/Head, FOMWAN	Female
23		Borno	31.08.22	Mustapha Shehu, Education Officer, UNICEF	Male
24	Tool 7: Discussion guide for SBMCs/CBMCs	Rimi, Katsina	08.08.22	Members of SMBCs/CBMCs	8 Males, 1 Female
25		Bungudu, Zamfara	15.08.22	Members of SMBCs/CBMCs	11 Females
26	Tool 8: Discussion guide for Mothers' Associations	Kankia, Katsina	08.08.22	Members of Mas	12 Females
27		Bungudu, Zamfara	15.08.22	Members of Mas	12 Females
28	Tool 9: Focus group discussion guide for Monitoring and Oversight Teams (TDTs/MTs/TWG, SSOs)	Kankia, Rimi and Batsari, Katsina	09.08.22	Group representing Master Trainers, TDT, TWG, CRP, LGEA	3 Males, 2 Females
29		Gusau, Zamfara	19.08.22	Group representing SUBEB, SAME, LGEA, TDTs	3 Males, 1 Female

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