

EVALUATION REPORT

ICT-EMPOWERED KINDERGARTEN PROJECT

The development and integration of Educational Information and Communication
Technologies into the Ghana Early Childhood Education System

2023

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INTRODUCTION & BACKGROUND

CODEUS is an education division of BSW International Limited executing and organising turn-key projects in the field of education technology integration and teacher capacity building from early childhood to higher education areas.

In December 2019, BSW International Limited (aka "CODEUS") and the Government of Ghana, represented by the Ministry of Education, entered into a Contract Agreement for the Development and Integration of Educational Information and Communication Technologies into Early Childhood Education.

The Contract Agreement provided for the establishment of ICT-supported play-based environments in KG1 and KG2 classes in 55 kindergartens across six regions of Ghana, namely: Greater Accra, Ashanti, Eastern, Volta, Western, and Central regions, including the delivery of teacher training aimed at the capacity building of kindergarten teachers.

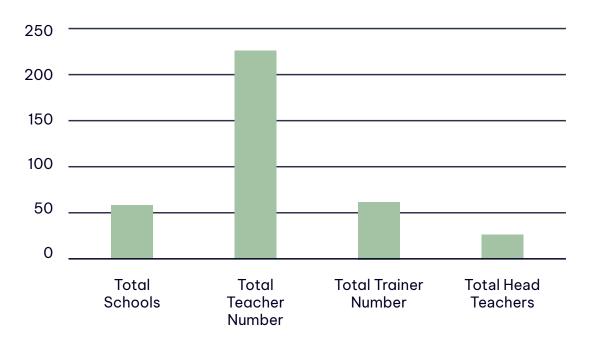
The project was and continues to be executed in close collaboration with the Ghana Education Service (GES) and the Ministry of Education (MoE).

To ensure the sustainability of the project, BSW International Limited ("CODEUS") developed a cascading training model for the local District Education Service coordinators and District Teacher Support Teams (DTST), who then delivered programs to practising kindergarten teachers under the close supervision and coaching by BSW International Limited ("CODEUS") international and local team.

The training content was aligned with the key objectives of the new play-based Kindergarten Curriculum and aimed to strengthen the skills of kindergarten teachers to maximise teaching and learning.

The implementation of the model was made in coordination with the Ghana Education Service represented by the Head of Basic Education, Education Directors of the six selected regions and districts, National, Regional and District Early Childhood Coordinators, and the District Teacher Support Teams.

PROGRESS ON ASSIGNMENT TO DATE - QUICK FOCUS GRAPH

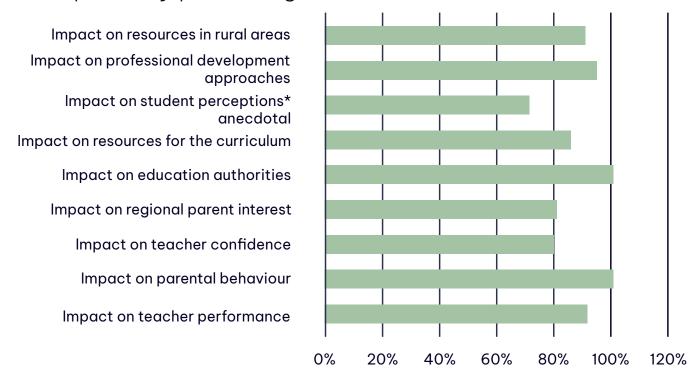


PROGRESS ON ASSIGNMENT TO DATE

Region	School	Trainers	Training for trainers by day	Training for teachers by module	Training for teachers by day	Teacher Impact numbers	New Participants	Classroom Support in hours	Project Requirement	Status
Regional Coordinators		24	4						Complete	
Greater Accra	10	6	12	7	8	14	0	100	Complete	
Eastern	10	5	12	7	8	48	10	94	Complete	
Oti	8	7	12	7	8	24	6	92	Complete	
Central	9	5	12	7	8	39	7	97	Complete	
Ashanti	10	5	12	7	8	43	3	94	Complete	
Western North	8	6	12	7	8	29	5	96	Complete	
TOTAL	55	58				197	31	573	Complete	

IMPACT SUMMARY

Pilot impacts by percentage



The ongoing impacts of the project were from key stakeholder feedback: participants, Ministry and GES officials, trainers and in-country CODEUS staff. (135 responses)

- Most teachers believed that their teaching and how their students learnt had changed because of their involvement in the program. Significant outcomes were identified as play-based, group work, hands-on activities, and a willingness to use technology. (125/135/93%)
- In-country team personnel identified teacher confidence and contemporary teaching knowledge as critical outcomes of the program. (2/2/100%)
- An increase in parental involvement was an identified outcome and impact of the project. Parents became more interested and more involved in their children's participation, with new technologies being one of their primary interests. (109/135/81%)
- Notably, parents from regional areas were identified as having an increasing interest in what was happening in classrooms. (49/60/82%)
- Members of the international team and the in-country team identified increased interest and participation from government authorities and people responsible for ECE. Feedback from these people was very positive. (4/4/100%)

- Parents, teachers, and officials all expressed thanks for providing the relevant resources. They were very aware of the selected resources, especially how all resources supported the new play-based curriculum. (117/135/87%)
- Student feedback was very focused on using the technology and the play-based activities. (Anecdotal: 97/135/72%)
- All interviewed, and most responders talked positively about the project work's positive changes and how these changes impacted other programs happening in the country. The train-the-train methodology and results received specific praise and support. (129/135/96%)
- It was noted by rural teachers that the resources and technology provided were appropriate and that they were very appreciative of the in-country team, their visits, and the time spent with them. (55/60/92%)

IMPACT SUMMARY

	Impact	Result	Information
1	Establishment of an early childhood centre of excellence, Kwabenya Atomic Kindergarten, consisting of two technology-rich model ECE classrooms. The centre of excellence was renovated, designed, and equipped at the cost of CODEUS.	\bigcirc	Launch video available at Presidential Launch Video Photos attached.
2	Trained and empowered in- country team to support CODEUS international team	✓	The CODEUS policy in each project is to work with local people. CODEUS selected and recruited local staff with ECE experience and background. The local staff underwent intensive training from the international team to ensure the quality of support. The availability of the local team allowed for quick responses to problems and to monitor all activities.

	Impact	Result	Information
3	Design and development of a one- year Train-the- Trainer and Teacher Training program. Alignment of the programs with the local play-based curriculum.	\bigcirc	Refer to an example of a CODEUS module.
4	A contemporary one-year professional development program for 2 teachers and a headmaster from 55 pilot schools in 6 regions of Ghana. The program was fully aligned with the new play-based curriculum of Ghana.	\bigcirc	The initial professional development program consisted of 7 foundational modules delivered in the form of the Train-the-Trainer program. The 8th module was added upon completion of the program to strengthen the skills of teachers in using the resources provided. The 8th additional module will be fully delivered by the end of August 2023.
5	24 District Teacher Support Team members and regional coordinators completed a one-year professional development program and serve as local trainers in the country.		CODEUS focus is to empower the local people as much as possible and ensure the knowledge stays inside the country. As a result of the project, Ghana has a team of local trainers from 6 regions who can continue training teachers from other schools.
6	Response to requests for further training with the design of a complementary program to further support the development of ed-tech skills and the use of contemporary resources.	\odot	Module 8 – Hands-on Training
7	Leadership training program for employees of the Ministry of Education and Ghana Education Services.	\bigcirc	Briefings, school visits and documentation to continue the understandings of what was occurring in the project
8	The provision of learning and teaching classroom resources and ICT to complement the new teaching and learning models.	\bigcirc	Further resources were provided to help teachers and the in-country team.



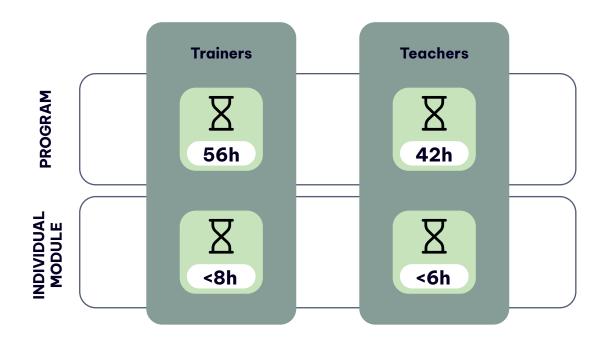


THE MODULES OF THE TRAINING

Module 1	Early childhood development. Brain Development, Development theories			
Module 2	The importance of play in child development and learning			
Module 3	ule 3 Early Childhood Curriculum models and Daily Planning			
Module 4	ICT for teaching and learning in ECE			
Module 5	Classroom management and organization. Inclusivity and Modifications to meet the needs of each learner			
Module 6	Assessment and reporting in early childhood			
Module 7	Module 7 Parent Involvement and effective teacher – parent communication			
Module 8	Classroom resources and activity planning. Practical skills.			

The program for trainers was 56 hours in length, with the teacher program 42 hours. The individual module length varied, though, <8 hours was the average for trainers, and <6 was the average for teachers.

Regional coordinators received a centralized, specific and purposely designed 4-day training that took place in Accra.



IMPACT - CODEUS GHANA TEAM

For the two years of the project, the CODEUS International team has supported and built the capacity of the Ghana team to deliver high-quality training to GES trainers and teachers across six regions in Ghana. Below is the feedback from the CODEUS in-country team.

"Training and developing district training teams will remain a sustainable approach to capacity building for districts. It's exciting to find how the skills of DTSTs have evolved and the level of control teachers have in managing their classrooms, incorporating ICT in daily lessons, and engaging with learners."

"As the lead trainer in Ghana, I found the training sessions very insightful as they did not just provide information on what teachers needed to deliver in the classrooms, they presented research findings for us to understand what early childhood education and development entailed, with specific training sessions on how children develop, how they learn best, the importance of play for children, how to manage behaviour in the classroom, and how to integrate ICT into daily lessons. This provided an adequate basis for the trainers and teachers to understand and adapt content to improve classroom practice and learners' experiences."

"The coaching sessions were critical as they provided us with the opportunity to understand specific needs and challenges teachers face in their classrooms, which, in turn, enabled us to provide hands-on support for teachers to address these challenges. This process also allows us to learn classroom best practices and share them with others."

"The impact of the resources supplied to schools to support teaching and learning needs to be more recognised. There is so much difference in how teachers manage and deliver lessons due to the presence of teaching and learning resources."

"Coordinating with multiple districts has improved my engagement with other key people at the district level and the headquarters of GES/MOE. In my current role, I have the opportunity from the lead trainer to engage with Education Directors and the National KG Director to share and receive information concerning the projects. It helps me build leadership, management, communication and collaboration skills as well as better understand the challenges of the education system."

"I have gained much more practical experience in the various modules I have delivered to teachers. As an early childhood educator, much of my initial experiences were theory-based, and it was genuinely fantastic to find modern ways to transfer the theory into practical hands-on activities. With the focus on daily practice from each module, I have gained more insight into the practical aspect of working with children. Content like observation tools for assessment and the child development theory were beneficial.

IMPACT

- TEACHERS AND COORDINATORS

The training received by teachers has significantly impacted their knowledge and understanding of early childhood education and child development. Although most of the teachers had received training in Early Childhood Education from the Colleges of Education in Ghana, they had little understanding of how to implement it. This training brought to light most of the concepts and ideas while providing the resources needed to practice them in their everyday classrooms.

(Lydia Febiri, ECE Coordinator, La Nkwantanan Education Directorate, Accra – Ghana)



With the knowledge gained by the District Teacher Support Teams (DTST) through the classroom coaching process, they have been fully equipped to offer one-on-one coaching support to teachers across the district. These trainers confirm the impact this has had on their level of knowledge and confidence. Closely linked to this is their ability to now deliver training to large groups of teachers in the district with little or no support. (Wanlib Laari, Training Officer, Bibiani District)





The introduction of ICT at the kindergarten level has been beneficial for explaining abstract concepts. Concepts such as nature, language and mathematics have all been practically explained in the provided educational software, making learners grasp concepts with detailed understanding. Also, because these activities are presented playfully, children always feel they are playing while at the computer or with the tangibles, but at the end of the day, learning is taking place.



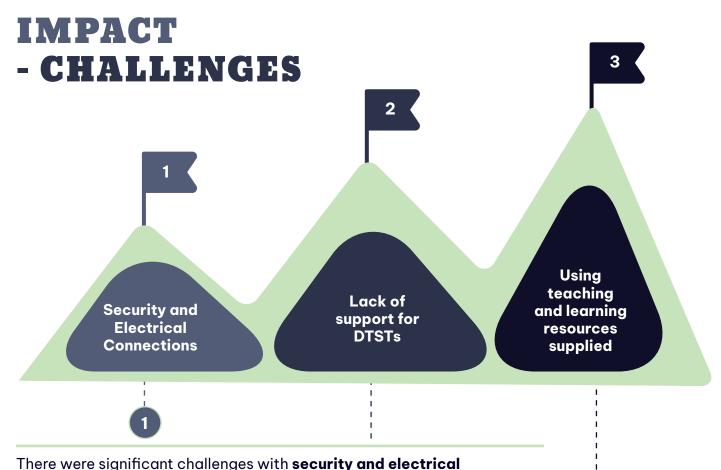


Every single teacher can confirm that as a result of this project, both teachers and learners are more punctual to school. The classroom setup, group work, and outdoor activities have significantly reduced the burden on teachers always talking in front of the class. Learners are much more confident now as they work in groups learning from each other due to the available resources in the classroom. This rarely happened in some of the classrooms before this project.



(Amankwah Angela, ECE Coordinator, Eastern Region)

(Mr Daniel Oppong, Training Officer, Oti Region)



connections across most classrooms; this impacted the setup and use of computers in the classrooms at the beginning of the project. As the project progressed, GES managed to secure all classrooms with appropriate doors and windows and electricity for ICT use in the classrooms.

2

The lack of support for DTSTs to monitor and coach classrooms has remained a significant challenge in the project. Expected transport support for the DTSTs to conduct coaching and monitoring was absent. This challenge has been addressed for the pilot schools by selecting schools nearer the district offices. This may be unrealistic as we plan a rollout in the future. One of the solutions considered for the expansion project is through ICT, by providing small cameras for the classroom, where teachers can record their activities, and the DTSTs can review them and meet with teachers in Zoom or Microsoft Teams.

3

Most teachers had challenges **using the teaching and learning resources supplied.** Coaching and monitoring visits revealed teachers needed more knowledge and ability to use the resources such as building blocks, shapes, cards, bricks, etc. To address this situation, an eighth module was developed to provide hands-on training to all teachers on effectively utilising the resources provided in the classroom.

CODEUS EXPECTED / ACHIEVED OUTCOMES



CODEUS supports the Government of Ghana, through the Ministry of Education (MoE) and the Ghana Education Service (GES), in implementing the new kindergarten playbased curriculum and ECE Policy Framework and, at the same time, integrating education technology as envisaged by the above curriculum.

An expected outcome is that CODEUS Learning Outcomes for teachers will be synonymous with the Ghana ECE Policy Framework. The project will improve the quality of ECE teaching throughout the country and, consequently, the learning outcomes of young learners from participating schools.







An expected outcome for CODEUS is to help the government in Ghana meet its commitment to the UNESCO Sustainability Goals and its commitment to the Education 2030 Sustainable Development Agenda.

(A key statement is Sustainable
Development Goal 4: Ensure
Quality Education for All,
focusing on 4.2, Early Childhood
Development and Universal
Pre-Primary Education and 4a,
Effective Learning Environments.)

An expected outcome was the focus on three of the Education Ministry's and The Ghana Education Service's aims for ECE:

- a) Ensure effective implementation of the KG curriculum for improved playbased learning, including introducing ICT.
- b) Monitor and supervise accountability at all levels of ECE service delivery.
- c) Enhance social change and social justice by reducing inequality amongst vulnerable and marginalised children.

ONGOING COMMITMENTS

Continuing coaching and in-classroom support

Lessons learnt for future projects Expansion of the project to 1000 KG1 and KG2 classrooms across all of Ghana Expansion of the project to primary school classrooms in the pilot project schools

APPROACH - PROJECT MODEL

To ensure the sustainability of the project, CODEUS applied its three-pillar model:



The model design is to equip teachers with deep knowledge and understanding of best educational practices, including providing complementary resources and materials necessary to ensure quality teaching and learning in a modern play-based early childhood environment.



APPROACH - EDUCATION THEORY

Educators worldwide are exploring ways to better educate children between the ages of 2 and 8.



This pilot program invested in and encouraged responsibility in the role of a teacher trainer who, with support, became well-versed in all aspects of early childhood education. The major goal was for the trainer to support and lead colleagues as a role model/guide in innovative best practices. The program's foundation assumption was that the Teacher Trainers would be responsible for their cohort of teachers and act as role models.

With purpose, all aspects of the pilot program have education technology infused into its various components. The provision of resources and the training components all focused on the objectives of the new Ghanaian play-based curriculum.

The ISTE standards, along with UNESCO's ICT Competency Framework for Teachers, the concepts of 21st-century skills and the work of many education theorists provided a robust theoretical foundation for the project's work.

As a further fundamental design, the education technologies frameworks of TPACK and SAMR were built into the content design, though, as a design methodology, not a participant learning requirement. The program was also developed based on the findings of the latest neuroscience and developmental psychology research.

The program design was to build a high-level capacity in teacher trainers who, in turn, provide kindergarten teachers with a contemporary, comprehensive, professional development program with practical usage in the kindergarten classrooms.

A program syllabus for kindergarten teachers and a second program syllabus for the teacher trainers were developed. The teacher trainer syllabus, incorporating the teacher syllabus, was complemented by modules focusing on mentoring, adult learning, presentation skills, administration organisation, record keeping and communication.

The teacher training program included a mixture of education philosophy, pedagogy, psychology, education best practice, handson activities, and continuous assessment/reporting. The program encouraged new significant learning for the teacher trainers and the kindergarten teachers.

The Teacher Training program's design was to provide opportunities for aspiring and practising trainers to reflect deeply on best practice teaching and learning from the perspective of not only following a course-based syllabus but also being aware of the needs of individuals engaged in the program.

The complete program (trainer and teacher) was designed to grow and develop during implementation so that CODEUS can transition the program to the Ministry of Education as a viable ongoing Early Childhood in-service professional development program at the end of the project timeline.





The teacher trainers were encouraged to identify their core values as a coach and apply the standards to coaching practice through a pedagogical vision of innovative learning or an initiative that may already be underway in their context (e.g. blended learning, personalised learning, deeper learning, project-based learning, problem-based learning).

The program was designed to complement the existing play-based kindergarten curriculum while incorporating concepts and ideas from various early childhood and kindergarten curriculums worldwide following a course-based syllabus but also being aware of the needs of individuals engaged in the program.

APPROACH - TRAIN THE TRAINER

In purposefully identifying a 'train the trainer' methodology, CODEUS builds a pool of skilled trainers who can effectively deliver training programs, ensuring that knowledge and skills are transferred efficiently and professionally to learners.

This methodology focuses on equipping trainers with the knowledge, techniques, and resources necessary to effectively educate and transfer skills to their trainees.

The CODEUS methodology focuses on:

- 1 Identifying the need for trainers: This step involves assessing the organisation's training requirements and determining the need for trainers.
- Selecting potential trainers: Once the need for the number of trainers is established, suitable candidates are identified.
- **Providing training to potential trainers:** This step focuses on building the capabilities of the potential trainers through training programs specifically designed for them.
- Practising training techniques: To solidify their knowledge and skills, potential trainers engage in practical exercises and simulations to enhance their abilities to engage, motivate, and instruct trainees effectively.
- Ongoing support and mentorship: After the initial training, ongoing support and mentorship are essential for new trainers to develop their competence further.
- **Assessment and evaluation:** Regular assessments and evaluations are conducted to measure the trainers' progress and ensure they meet the desired standards.

APPROACH - EVALUATION TECHNIQUES

CODEUS uses its in-house methodology for the evaluation of education projects. As every project is different, and every country has its own specific needs, cultural and community differences and administrational structures, the evaluation methodology is specifically constructed for each project.

In this project, the following steps were used:



SUPPORTIVE STATEMENTS

CODEUS was expected to provide functional, practical, and age-appropriate resources for the kindergartens of the project. The selected kindergartens were equipped with age-appropriate education technology, learning and teaching resources, and materials supporting the play-based curriculum and creating multiple opportunities for young learners. However, the program also focused on using local materials (natural, reusable, etc.) as much as possible, together with the provided resources.

CODEUS believes that children are capable and resourceful learners who can be active contributors to their learning and that they need to be valued as individuals within the context of their family and community.

CODEUS provides resources, learning and support for teachers that help children develop confidence and positive self-belief through an inclusive, supportive and secure environment.

CODEUS supports a strong play-based curriculum program based upon the principles of the ECE Policy Framework.

CODEUS was prepared to provide resources suitable for various conditions identified by local authorities. CODEUS was aware of internet connectivity issues and unpredictable electricity provision in certain areas and adapted resources and physical requirements to suit needs.

SCOPE OF...



Initially, seven modules were designed and prepared, with an 8th module – additional hands-on training included at CODEUS expense, as teacher evaluation suggested the need to strengthen further the teacher's and coordinators' practical skills of using the provided and existing teaching and learning resources.



GOODS AND EQUIPMENT

As of the date of this report, BSW has supplied ICT equipment and learning and teaching resources to all 55 participating schools; teacher laptops, PC and monitors for classrooms, education kits with age-appropriate software and teaching and learning resources, teacher guides, and furniture sets for a computer corner.

KWABENYA MODEL KINDERGARTEN AND CENTRE OF EXCELLENCE



In October 2023, BSW/CODEUS completed the renovation and equipment provision of the Education Technology Enhanced, Play-based Kwabenya Model Kindergarten and prepared it for handing over to the Ministry of Education and Ghana Education Service. The kindergarten will serve as a centre of excellence, teacher training, and experimental platform.

To ensure the successful operation of the kindergarten, an additional 3-day recap practical training was delivered to the kindergarten teachers, headmaster and DTST members from the Greater Accra area.





The model kindergarten was officially launched by His Excellency, the President of Ghana, and Honourable Minister of Education on February 14, 2023, who expressed their will to create similar centres of excellence in other regions of Ghana.

As the project continues to grow and develop in Ghana, it has become evident that facilities like the Kwabenya Kindergarten have become an essential component of ongoing teacher professional learning.

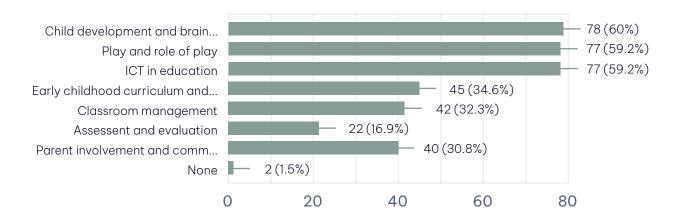
The kindergarten is being used as a model for how education technology and play-based learning can be part of an excellent early childhood education program. The kindergarten's facilities provide a space for modelled teaching, professional development activities, peer-to-peer coaching and an education setting to experiment with resources and teaching ideas.



FEEDBACK FOCUSED ON FUTURE PLANNING

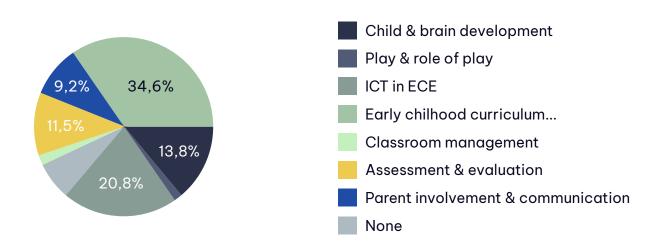
Which modules of the BSW training program did you find most interesting for you?

130 responses



Which topics did you find most difficult for you?

130 responses



What would you improve about the training program? 135 responses

Further work on good class management and how to understand my students

Further examples and conversations on improving constant and effective communication between the school and parents

A focus on assessment and evaluation

Resource materials

Copies of the modules should be made available to the trainees at the Districts level trainings

The training duration should be extended

Transportation for participants

Practical materials should be added to the training

Training time should be extended

What did you like about the program? 135 responses

The organization and the commitment on the part of both trainees and trainers

Incorporation of ICT

The fact that learners can have access to ICT tools and use them in learning

What I like about the program is how ICT has being integrated into this pre school curriculum

Using modern technology to enhance effective teaching and learning

It was very interactive sessions

The introduction of ICT in ECE. Understanding how children behave and teaching them acordingly

PARTICIPANTS FEEDBACK:

(A sample of participants' comments)

Oti Region

"With the computer coming into the classroom, learners are going to be punctual and regular at school because they wouldn't miss a day without using the computer. As a teacher trainer, I will assist other teachers who may have challenges with the use of the technology, so all learners will have access to and improve their understanding using technology."

(Ernest Adade, Teacher Trainer)

"Teachers in the selected school now need to factor the use of the ICT in their daily schedule. As they plan their lessons, they need to identify where learners will be using the computer in the day. They also need to upgrade their knowledge on the use computer to be able to assist learners who may have challenges."

(Opare Victor)

"Learners need to manipulate tangibles to understand more of the activity before having access to the same activity on the computer. This will enhance their confidence level in using the computer."

(Oppong Daniel, Training Officer)

Ashanti region

"These resources will encourage learners to come to school and make the teachers' work easier."

(Linda, KG Coordinator, Gomoa Central)

"We've learnt a lot, and as always, your friendly and calm nature makes the training more relaxed, and I know all the teachers will feel motivated by these resources and will help make their lessons more fun and play-based."

(Abba)

"I'll take with me the need to regulate children's access to the screen and the need to spend more them playing and exploring with them"

"I am particularly excited about the possibilities of integrating ICT, particularly at the KG level as it expands learning opportunities for our learners, not forgetting our role in regulating access to the screen for children."

(Appiah)

Overall, training was successful with trainers coming out with a good understanding and high confidence indicating their readiness to transfer the knowledge to the participants from the selected schools.

Additional feedback from other delivered modules:











CODEUS Corporate Profile Book







Bibiani District

"With the equipment provided, the lessons will be more fun and engaging, the video lesson and the manipulation of the tangibles will aid understanding"

(Sabina Afriyie, Bibiani Presby KG)

"While evaluating the classroom environment, and looking at the sample classroom pictures shared, I need to work on my classroom layout as quickly as possible, I am going to reorganise the classroom so there'll be space for easy movement, I'll create learning centres with enough resources for children to play with"

(Agnes Adjei, SDA Basic School)

"Being part of this training as a headteacher is very helpful, I will get to know what to look out for when I visit the KG classrooms, even when a teacher absent herself from school, I can step in to facilitate learning, I am very confident in using the eduquest with the practical opportunity given"

(Antwi Adjei Eric Boasiako, Headteacher, AGBL)

Oti Region

"I have learned a lot today and what amused me the most is how we can control very bad behaviour in our class"

(Peter Agbey, Kadjebi Basic School)

"I am very happy and thankful to BSW for giving us this opportunity to better understand the new curriculum and how to prepare playful activities to suit the indicator as well as how to group learners for activities"

(Priscilla Addae, Tepo E.P KG)

"As a teacher I have also gained some extra knowledge on how to manage stress"

(Gifty Agbeko, Ntumda E.P KG)





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