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EDUCATION COST EFFECTIVENESS BRIEF – Non-Formal Learning Centers

Nigeria | 2019

Executive Summary

The International Rescue Committee (IRC) and Creative Associates International (Creative) implemented the Education in Emergencies (EiE) project in Northeast Nigeria providing education to over 30,000 crisis-affected children. The goal was to increase students' literacy, numeracy, and social-emotional learning. In the first cohort, two activities were studied in a randomized evaluation. The core package of services provided at non-formal learning centers (NFLCs) included the Accelerated Learning Program (ALP) curriculum and material support for classrooms and learning facilitators. The second package of services (ALP+) also included on-site coaching visits for learning facilitators. The core activities of ALP increased student literacy and numeracy outcomes and had mixed results on social emotional learning. The facilitator coaching (ALP+) yielded a negative impact on learning outcomes relative to the basic ALP package.

The package of ALP services cost £66 per student. The program showed positive impacts on student literacy and numeracy, and ALP appears relatively cost-effective compared to other education programs targeting out-of-school children.

Adding coaching for Learning Facilitators cost an additional £42 per student and was less cost-effective than the basic ALP activities. Because the addition of teacher coaching had a slight negative impact on literacy and numeracy gains, ALP+ was less cost-effective than the basic package of ALP services.

Project Description

As a result of the 2009 Boko Haram insurgency in Northeast Nigeria, nearly two million people have been displaced and schools have been burnt, bombed, and expropriated.¹ Of the estimated 10.5 million children out of school, 1.6 million are at an increased risk for recruitment into armed groups, early marriage and pregnancy, and exploitative labor and trafficking. Over 600 teachers have been killed, more than 19,000 have fled, and approximately 1,200 schools have been damaged or destroyed. While some urban schools have reopened, those in the conflict-laden rural areas remain closed.²

From October 2017 through September 2018 the International Rescue Committee (IRC) and Creative Associates International (Creative) were funded by DFID to run Cohort 1 of a non-formal education program in Yobe and Borno. The program, called Education in Emergencies (EiE), aimed to improve literacy, numeracy, and social-emotional learning using the Accelerated Learning Program (ALP) curriculum. Children who had never attended school or had been out of the formal education system for more than two years were prioritized for inclusion in the program.

Two versions of the program were implemented. The first, the ALP, focused on providing a well-stocked learning facility (called a non-formal learning center, NFLC) and delivering the ALP curriculum. The second, ALP “plus” (ALP+), also provided coaching for learning facilitators throughout implementation.

While the EiE program was implemented both in formal schools and non-formal learning centers, this brief examines the cost-effectiveness only of the activities in the non-formal learning centers. The cost analysis covers inception (October 2017 through February 2018) and implementation (March - September 2018) of the ALP curriculum and learning facilitator coaching. Inception included activities required to start a project such as procurement, classroom rehabilitation, recruitment, and training.

Education in Emergencies: Activities

The Accelerated Learning Program

- **Establishing and running non-formal learning centers**

IRC and Creative established learning centers for out-of-school children, called Non-Formal Learning Centers (NFLC). Some facilities were built, while others were housed using existing infrastructure. The centers were stocked with classroom supplies such as seating mats and chalkboards.

- **Delivery of Accelerated Learning Program curriculum**

Community members were identified and trained as learning facilitators. The training focused on how to deliver the ALP curriculum in classrooms for three hours a day, three times a week, over a period of nine months. Ongoing support to these facilitators was provided through learning circles, which met on a regular basis to provide space for facilitators to discuss classroom best practices.

Accelerated Learning Program “Plus”

- **Coaching for learning facilitators**

Non-formal learning centers in the ALP Plus program also provided facilitators with ongoing professional development through one-on-one coaching sessions in the classroom. These additional coaching sessions for the 40 ALP+ facilitators occurred twice per month for five months, for a total of 10 visits.

Project Costs

Including support costs, the cost per student for ALP was £66 and for ALP+ was £108.

The average cost per student of establishing and running the non-formal learning centers, training community members to be learning facilitators, facilitator learning circles, and providing materials to students and teachers was £66 per student (Figure 1). The cost of providing coaching to these learning facilitators as well as core NFLC activities was £108 per student, an additional average cost of £42 per student. Note that the financial data does not allow an analysis of a specific center or population of students, thus costs are averaged across centers and students in the study.

Figure 1. Monitoring & Cost-Efficiency Data – Cohort 1

	Center Establishment Costs	ALP	Facilitator Coaching	ALP only	ALP+
# of Centers	360	360	80		
# of Children Served	18,000	18,000	4,000		
Cost per NFLC	£ 871				
Cost per Child	£ 17	£ 48	£ 42	£ 66	£ 108

In addition to the direct program spending, substantial resources (44% of costs) went to operations and support functions at IRC and Creative.

Each organization employs operational teams that support program delivery, including finance, security, HR, IT, and supply chain. Further, office operating costs such as rent, utilities, and senior management, as well as organizational indirect rates (ICR: 21% for IRC and 23% for Creative), are included in the analysis. Despite the relatively high percent of resources going to shared and indirect, the actual cost per child of the program (£66 per student for 7 months of instruction) is still relatively low, suggesting that the percentage breakdown of direct vs. shared costs is not a good proxy for actual program cost-efficiency.

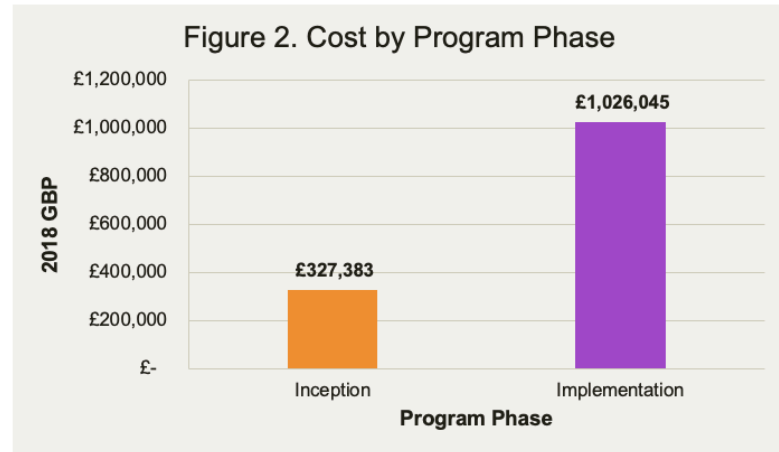
Fifty percent of direct program spending was for Program Supplies & Activities, including spending on frontline inputs like learner materials and facilitator stipends.

The 370 learning facilitators who delivered the curriculum to students received a four-day face-to-face training and a two-day refresher training to ensure they were equipped to teach literacy, numeracy, and SEL. The learning facilitator trainings cost £100 per facilitator (not including the costs of training master trainers). The 40 facilitators in ALP+ received an additional two-day face-to-face training focusing on the development of coaching skills. Material costs included notebooks, bags, and pens for students, lesson plans for learning facilitators, and charts, blackboards, chalk, paper, and attendance books for classroom equipment.

Much of the spending on EiE took place during the five-month inception phase—this implies that the cost-per-child of the program would fall if it was extended using the same trainers in the same locations.

Of the total spending on these project activities, 24% of was spent in the five-month window before implementation started. This phase of the project included hiring of learning facilitators, trainings, and

curriculum and material development. While these resources would be required again if EiE was launched in a new context (i.e. where new materials would need to be developed, and new trainers recruited), an extension of the program in the same context would likely achieve lower cost-per-child than at this early stage.



Results of the Impact Evaluation

The impact of the Accelerated Learning Program and the Accelerated Learning + Coaching projects were measured in a randomized evaluation.^{3,4} The following key findings were identified, listed by impact domain.

- **Literacy –**

ALP led to statistically significant improvements in 2/5 Early Grade Reading Assessment subtasks: fluency and reading comprehension.

Coaching (ALP+) led to small, negative, and statistically significant effects on children’s letter identification skills compared to the basic ALP package but had no significant effect on other literacy outcomes.

- **Numeracy –**

ALP led to positive and statistically significant effects in 7/8 Early Grade Mathematics Assessment (EGMA) tasks except subtraction level 2. Again, results were better for children who received ALP only, rather than ALP+.

Coaching (ALP+) led to small, negative, and statistically significant effects on 5/8 EGMA outcomes.

- **Social Emotional Learning –**

ALP led to a small statistically significant reduction in children’s orientation toward the use of aggressive conflict resolution strategies but showed no significant effects on other SEL outcomes.

Coaching (ALP+) saw a statistically significant increase in aggression for students through decreased anger dysregulation.

Cost Effectiveness Findings

Improvements in literacy and numeracy for children who received ALP suggests that the program is a relatively cost-effective means of improving learning for displaced children.

For a cost of £66 per student—the equivalent of \$75 USD—numeracy outcomes increased by roughly 0.3 Standard Deviations (a measure of the variation in numeracy outcomes in the control group).⁵ Comparison data on the cost-effectiveness of learning programs is reported as the standard deviations of test score increase achieved per \$100 spent, averaging together the costs and test score improvements from many children. By this measure, ALP achieved roughly 0.4 Standard Deviations of improvement in test scores for every \$100 spent on the project. While other educational interventions—such as school-based health campaigns and informational nudges—have shown greater gains in test scores per \$100 than ALP, most of

these provided additional services to children who were already in school and would not be relevant for this population in Northeast Nigeria.

ALP achieved 0.4 Standard Deviations of test score improvement per \$100, which is within the range of cost-effectiveness estimated for other programs which increased access to education around the world. In Malawi, providing conditional cash transfers to out-of-school girls achieved 0.06 SDs of test score increase for every \$100 spent, a lower cost-effectiveness driven largely because of the high cost of cash. In Afghanistan, by contrast, increasing access by simply building schools in remote locations achieved 2.1 SDs of test score increase for every \$100 spent.⁵ Taken together, these comparisons imply that ALP is a cost-effective way of improving literacy and numeracy for out-of-school children, even in conflict-affected contexts.

Adding coaching for learning facilitators decreased literacy, numeracy, and SEL scores compared to students who received ALP only. Because ALP+ cost more per child than ALP, and achieved lower outcomes, it is a less cost-effective option than the basic ALP.

Students in schools for which learning facilitators received coaching saw a negative effect on children's letter identification skills and a decrease in several numeracy outcomes, compared to ALP alone. Adding coaching to the package of services for NFLCs increased the cost per student by 64%. As a more expensive intervention than ALP, with a lower impact than basic ALP on learning and transitional outcomes, there is a negative return on the additional £42 spent per student. This is an unexpected result, as other studies have found that coaching can be a cost-effective program model at scale.⁶ However, qualitative work suggests that coaches were particularly ineffective in this instance because they had limited knowledge of the content for which they were supposed to support learning facilitators, and because they were perceived as supervisors rather than playing a supportive role.⁴

Given the high cost of coaching documented in this and other studies, IRC has decided to prioritize teacher coaching only in contexts where the coaching has the potential to achieve high outcomes for students.⁷ Specifically, coaching is being prioritized in contexts where (1) coaches are not supervisors (2) coaches will have, or will be supported to develop, content-specific knowledge and (3) coaching will be connected to other forms of professional development—which was not the case for EiE in Nigeria.

Analysis Method: Cost-Effectiveness at the IRC

The IRC is committed to maximizing the impact of each dollar spent to improve our clients' lives. Cost effectiveness analysis compares the costs of a program to the outcomes it achieved (e.g., cost per diarrheal incident avoided, cost per reduction in intra-family violence). Conducting cost effectiveness analysis of a program requires two types of information:

- 1) An impact evaluation on what a specific program achieved, in terms of outcomes
- 2) Data on how much it cost to produce that outcome

Teams across the IRC produce a wide range of outcomes, but cost effectiveness analysis requires that we know - based on impact research - exactly which outcomes were achieved and how much they changed, for a given program. For example, an impact evaluation might show a village that received IRC latrines and hygiene promotion had a 50 percent lower incidence of diarrhea than a village next to it which did not receive the IRC intervention. If so, we know the impact of our program: 50 percent decrease in diarrhea incidence. Cost effectiveness analysis becomes possible only when there is an impact study that quantifies the change in outcomes as a result of the IRC project.

At the same time IRC runs impact evaluations, we gather data on how much the evaluated program costs. First, IRC staff build a list of inputs that were necessary to implement the evaluated program. If one thinks of a program as a recipe, the inputs are all the 'ingredients' necessary to make that dish. Budgets contain a great deal of information about the ingredients used and in what quantities, so reviewing the program budget is the first place to start. However, many of the line items in grant budgets are shared costs, such as finance staff or office rent, which contribute to multiple programs, not just the one included in the impact evaluation. When costs are shared across multiple programs, it is necessary to further specify what proportion of the input was used for the particular program. Specifying such costs in detail, while time-consuming, is important because it provides lessons about the structure of a program's inputs. We can divide costs into categories and determine whether resources are being allocated to the most important functions of program management and enable us to model alternative program structures and quantify the cost implications of different decisions.

¹ "Entire Generation of Children Missing Out on Education in Boko Haram Affected Nigeria". Plan International, May 27, 2017.

² "The Cost-Effectiveness of Two Models of Professional Development for Learning Facilitators in Non-Formal Learning Centers on the Learning and Transition Outcomes of Out-of-School Children in Nigeria: Preliminary Findings"

³ Silvia Diazgranados Ferráns, Jeongmin Lee, Chinedu Ohanyido, Kayla Hoyer & Adane Miheretu (2022) The Cost-Effectiveness of an Accelerated Learning Program on the Literacy, Numeracy and Social-Emotional Learning Outcomes of Out-of-School Children in Northeast Nigeria: Evidence from a Mixed Methods Randomized Controlled Trial, Journal of Research on Educational Effectiveness.

⁴ Silvia Diazgranados Ferráns, "Meeting the Academic and Social-Emotional Needs of Nigeria's Out-of-School Children." International Rescue Committee. 2019.

⁵ Kremer, Brannen, & Glennerster. "The Challenge of Education and Learning in the Developing World." Science. April, 2013.

⁶ Kraft, Blazar, Hogan. 2018. "The Effect of Teacher Coaching on Instruction and Achievement: A Meta-Analysis of the Causal Evidence." Review of Educational Research 88 (4): 547-588.

⁷ IRC Programmatic Efficiency Benchmark: Teacher Professional Development: Coaching Programs.

This work was conducted by the Best Use of Resources Initiative at the IRC. For questions or more information please contact us at airbel@rescue.org.

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Research & Innovation at the IRC

Annex: Ingredients List

Nigeria | 2018 GBP

Program Costs	ALP in £	ALP+ in £
International Staff	57,827	12,678
Education Technical Coordinator	10,874	5,931
Technical Advisor	5,077	2,769
Practice Area Director	601	75
Program Associate	1,496	374
Program Manager	14,877	-
Senior Associate	6,095	1,524
Recruitment Costs (cumulative)	73	18
Benefits (cumulative)	18,734	1,986
National Staff	112,532	13,438
Education Officers	53,558	4,575
Education Program Manager	11,660	2,435
Finance Staff	7,948	1,987
M&E Staff	6,545	-
Partnership Manager	5,193	733
Recruitment Costs (cumulative)	186	46
Benefits (cumulative)	27,441	3,661
Program Supplies & Materials	354,093	30,629
Center Running Costs	4,440	594
Construction of NFLCs & Micro Repairs	5,958	-
Hosting of Quarterly Technical Working Groups	2,054	267
Learner Materials (exercise books, notepads, pencils)	37,863	-
Learner Seating Mat	6,828	-
Learning Facilitator Stipends	56,996	-
Learning Facilitator Teaching Materials	33,327	-

Printing Costs	52,915	-
Running Costs of CSO Trainings & Meetings	47,614	-
Training of Community Coalitions	13,557	-
Training of Learning Facilitators	36,978	-
Training of Master Trainers	7,894	-
Training School Management Committees	5,295	-
Running Costs of Teacher Learning Circles	1,040	-
Consultancies (CSO, Literacy, Numeracy, Formal Schools)	19,501	-
Curriculum Development	18,350	-
Curriculum Development & Training	-	12,234
Operations Start-Up	3,483	435
Training & Refresher Training of Mentor Teachers	-	12,003
Mentor Teacher Transportation Costs	-	5,690
Sub-Grantee	88,336	-
Capital Assets	54,776	13,694
Vehicle Purchase	51,437	12,859
Laptops	3,107	777
Printer	231	58
Travel	21,222	5,292
Domestic Travel	3,941	972
Local Per diem/ Lodging	16,157	4,039
Site Visits	1,124	281
Shared Costs	495,136	93,775
TOTAL	£1,183,922	£169,505
Cost per Student (ALP=18,000, ALP+ = 4,000)	£66	£42