

Project-Based Learning:

# Low resource, High impact learning tools



Briefing Note

## Table of Contents:

	Background	p. 3
	Landscape Scan	p. 4
	Solution: Project-Based Learning	p. 5
	IFERB PBL Core Features	p. 6-7
	Resources Developed	p. 8
	Processes	p. 9-10
	Monitoring and Evaluation	p. 11
	Appendix	p. 12
	References	p. 13

# 1. Background

COVID-19 induced school closures interrupted the learning of 91% of the world's children<sup>1</sup> and half of the homes globally do not have access to the internet<sup>2</sup>. This meant that **online learning was inaccessible to many** and that there was a need for screen free learning.

Due to limited digital devices or connectivity such as TV, Radio and Mobile Phones, other forms of distance learning were not always reaching learners. This resulted in the disruption of the education of 465 million children during the pandemic<sup>3</sup>.

The need for screen free learning also arose due to limitations of remote learning programs. Existing forms of distance learning that are accessible to under-served learners are often passive, didactic, and not engaging for learners. Most of these programs use SMS based, TV based, and Radio based learning to enhance learning outcomes, but there is limited evidence of its effectiveness. These methods are mostly used to practice concepts that students have already learned and require that facilitators follow rigid guidelines for effective output<sup>4</sup>.

## Main constraints and core design challenges

### ID worked with:

To meet the needs of learners for an accessible and effective learning solution, IDD developed the **Internet Free Education Resource Bank**, which addressed the following concerns:



Learners have no internet connectivity and no access to online learning



Learners have limited access to digital devices or technology (e.g. TV, Radios etc.)



Learners have limited support at home due to parents who either work or are semi-literate



Limited educational resources or materials are available at homes (including textbooks)



Learners have limited access to teachers due to school closures



Many learners are behind their grade level and need reinforcement of conceptual learning



## 2. Landscape Scan



**Alternative learning channels** that are accessible to IDD's target learners (SMS, Radio, TV based learning resources, and some activity based learning) **had limitations** that include:

Inaccessibility to learners who have no digital devices (e.g. TV, Radios, laptops). About 826 million learners do not have access to a computer at home<sup>5</sup>

The limited engagement in asynchronous learning (30% of students didn't log into distance learning in some parts of the US<sup>6</sup>)

Frequent focus on practicing skills as opposed to learning new concepts

Focus on numeracy and literacy and not on all subjects

Productive engagement for activity based learning but inability to help learning happen

Lack of real evidence showing effectiveness of TV, SMS, and Radio learning

The availability of PBL resources either requiring online access with digital resources built in, needing heavy supervision by the teacher/facilitator or costing too much to access



### 3. Solution:

## Project-Based Learning

PBL, part of the Internet Free Education Resource Bank (IFERB), is designed for **exploratory and student-led learning**. It has shown to result in deeper learning that is more meaningful<sup>7</sup>. Additionally, although facilitation is needed, didactic instruction is not. This makes it ideal in the learners' contexts and is **accessible to all**.

IFERB PBL is interdisciplinary by design and therefore covers a range of subjects, allowing the learner to learn new concepts. Other components of IFERB also contribute towards the solution.



## 4. IFERB PBL Core Features



**Low Resources:** Requiring minimal resources that are typically accessible to low-income household to be completed. Alternatives are also suggested where applicable to enable educators to adapt projects to the resources available to the learners.

- ➔ **Cost Free and Open source content:** Available to anyone without registration or any costs (with some attribution requirements)
- ➔ **Internet and Technology Free:** Does not require Internet connectivity or technology to use these projects once they have been downloaded by or shared with learners, which makes it easy to learn anywhere and anytime.
- ➔ **Fun and Engaging:** All the offerings are designed to be fun and build engagement for self-lead or community facilitated learning
- ➔ **Globally Relevant:** All projects are designed to be globally relevant and ready to use while giving options to be adapted to local contexts
- ➔ **Project for Learners Age 4-14:**
  - ◆ The projects are available for learners between the ages of 2 – 14 years across 4 levels: Early Childhood Development (2-4), Level 1 (4 – 7), Level 2 (8 – 10 years), Level 3 (11 – 14 years).
  - ◆ Many of the projects are designed for all four levels with varying levels of difficulty
  - ◆ Projects are designed to incorporate different learning styles and preferences to build different skills





- **Interdisciplinary:** All the projects are interdisciplinary touching on multiple subjects and where possible, reinforcing literacy and numeracy application.
- **Discovery based and not didactic:** due to activity based learning, inquiry, and detailed but simplified instruction
- **Designed for Individual adoption:** In some cases for classroom or group use, but assuming children will be at home mostly to share publicly with their families
- **21<sup>st</sup> Century Skills:** include 21<sup>st</sup> century skills development especially in the areas of communication, critical thinking, creativity, entrepreneurship and problem solving etc.
- **Curricular Alignment:** The content is designed for the expected level of learning of these age bands based on the 5 international curricula that we are designing against
  - ◆ The project levels are mapped to all the core curricular skills as defined in 5 international curricula including: American, Australian, Qatari, British and Indian.
  - ◆ Some aspects of the curriculum are not covered since it is not possible to do these without reference resources and facilitation
- **Real-life relevance:** The projects often focus on real-life related problems to build real ownership and relevance to their life
- **Can be modified:** The projects include suggestions on how they can be simplified or modified to be made more challenging depending on students' abilities

# 5. Resources Developed

Multiple resources were developed to meet various needs, the resources include:

→ **Project Tracker**

- ◆ This internal document maps the project to the learning outcomes and skills developed

→ **130+ Educator PBL resources**

- ◆ These contain additional details to facilitate learning

→ **Parent PBL resources**

→ **Educator training documents and guidance notes**

→ **MEL framework with associated tools**

- ◆ Student assessment – back-end assessment bank with questions divided into the knowledge (information, facts or knowledge on a topic), skills (ability to use information and apply it in different contexts) and discovery (showing understanding of fundamental ideas to build an understanding of how the real world works) areas.
- ◆ 21<sup>st</sup> century assessment with rubric
- ◆ Surveys

→ **Gap Analysis**

- ◆ This internal document identifies the curricular gaps; IFERB content is aligned to 5 curricula (British, Qatari, Indian, Australian and American) and the gap analysis identifies gaps in the IFERB content with respect to these 5 curricula.

→ **Project review sheet**

- ◆ This is a back-end excel sheet marking the review of our projects against multiple PBL criteria and feedback

→ **Feedback on individual projects,**

- ◆ This includes the contexts that they have been used in etc.

→ **Translated projects**

- ◆ Projects available in multiple languages and contextualized for various geographies

→ **Implementing partner contextualization** for some of the projects

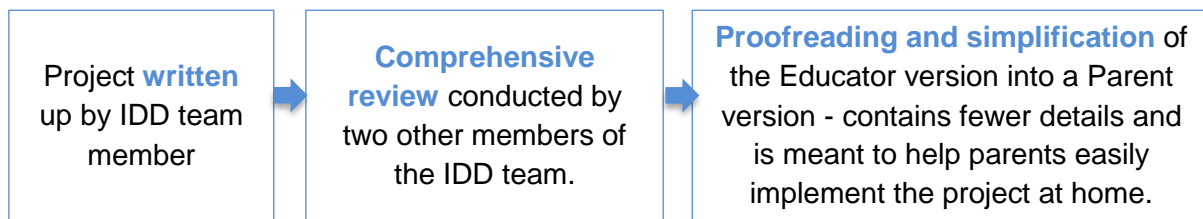
→ **Pilot report** from all pilots. Initial pilots (phase 1) are short 9-12 week deployments of IFERB content to learners in low resource settings through partnerships with on ground NGOs. Pilot reports contain quantitative data based on assessments and qualitative data based on teacher, student and NGO perception of the pilot experience.

→ **Operational models** and how-to guides from pilot partners



## 6. Processes

**Development Process:** A simple template was designed to make sure instructions are clear and coherent. The overall process for development of each project is as follows:



**Implementation Process:** Once developed, the resources are published and the IFERB pilot partners can select the projects they want to implement within their program. Pilot partners are organizations that work on ground to provide learners with educational content through facilitators.

IDD offers the following support during pilot partner implementation:

- **Training** the partners on how they can select and contextualize projects to ensure their relevance to students' contexts, interests and learning levels.
- **Reviewing** the adapted projects done by IDD and then sent for translation to the partners.
- **Iteration** of the projects after partners have used the projects. Based on the pilot partners' specific feedback, the projects would then be further edited and iterated.

**Review Process:** The reviewer must ensure that the following has being achieved:

- The tasks and activities are appropriate for the age groups
- The project flows well
- The instructions are clear
- Literacy and numeracy activities are incorporated in the project
- Additional activities are incorporated for interdisciplinary learning
- 21<sup>st</sup> century skills are being built and that reflection is incorporated in the project
- Avoiding the over-representation of a certain topic or concept in multiple projects
- It is a low-resource project
- Ensuring it is not very didactic

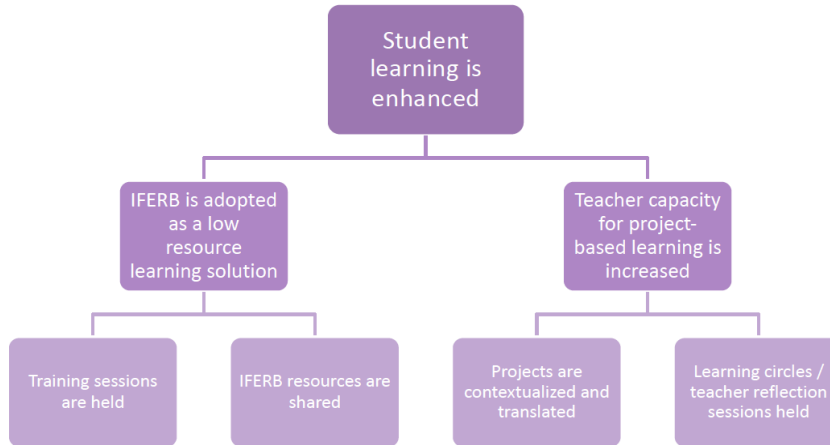
**External Review Process:** After the first round of pilots, IDD commissioned an external review of all projects to improve and develop them further. The consultants conducted a comprehensive technical review of all the IFERB projects for the purpose of ensuring consistency and improving the quality of the projects based on a project evaluation rubric developed by the consultants.

In order to ensure consistency and improvement of the quality of the IFERB projects, the consultants assessed the following in each of the projects:

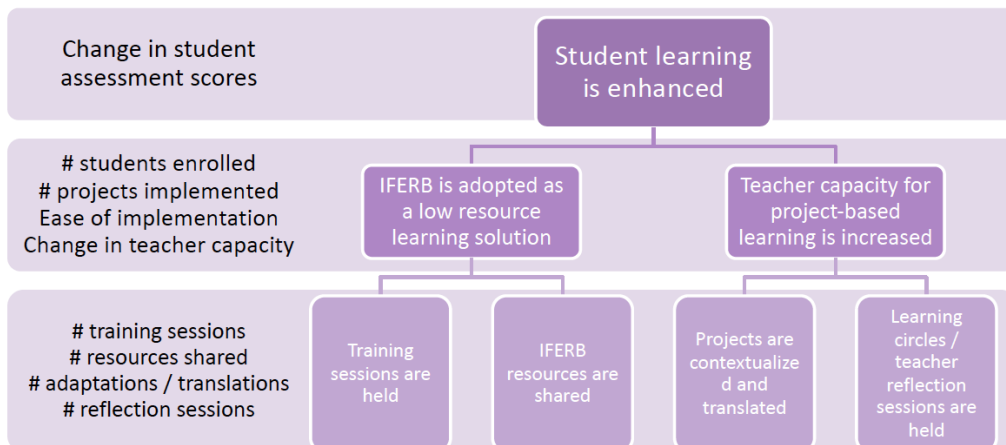
1. Relevance and Learning Goals		
1.1	Conceptual learning	Do the project activities (where appropriate) help the student learn subject-specific concepts (Science, Maths, Social studies, Language, etc.)?
1.2	Relevance	Does the project cover a globally relevant issue? Does the project (where appropriate) address an issue students can relate to/interest in/concerned with?
1.3	Numeracy and Literacy extension	<ul style="list-style-type: none"> <li>• Does a Language project have a numeracy extension?</li> <li>• Does a Mathematics project have a literacy extension?</li> <li>• Does a Science or Social Studies project have a numeracy or literacy extension?</li> </ul>
1.4	Contextualization	Can the project be adapted (where appropriate) to the local context (environment, curricula, local issues, locally relevant examples, local materials) by teachers?
1.5	21st-century skills	Does the project promote critical thinking, creativity, problem-solving, and communication?
2. Clarity and Alignment		
2.1	Student learning outcomes	Does the project clearly spell out the student learning outcomes it intends to achieve? Do the learning outcomes cover at least two of the cognitive, psychomotor, and affective domains?
2.2	Linkage of project activities with the learning outcomes	Do the activities lead to the achievement of the learning outcomes? Do the activities help a learner develop competence(s)?
2.3	Linkage of assessment criteria with the learning outcomes	Do the assessment criteria help to check whether the students have achieved the learning outcomes?
2.4	Appropriateness	Are the activities at the appropriate level of difficulty required for that grade/level?
3. Supports for learning		
3.1	Minimizing the need for textbooks and other instructional materials	Are the activities designed in such a way that they minimize the need for textbooks and other commercially available instructional materials? Can students use locally available free materials to ensure learning occurs?
3.2	Interdisciplinary and diverse in nature	Does the project offer enough opportunities for students to explore approaches, tools, ways of thinking, or methods from different disciplines? Are the project activities diverse in nature (group work, brainstorming, personal research, drawing, debate presentations, etc.)?
3.3	Involvement of caretakers	Are the project activities designed in such a way that there is opportunity for caretakers of all literacy levels to support their children in the learning process?
3.4	Clear instructions	Are the instructions (text, audio, infographic, etc.) clear and understandable even in the absence of a teacher/parent? Are the illustrations provided (where relevant) of good quality and do they stimulate learning?
3.5	Student engagement	Are the activities engaging for the learners? Is learning based on students doing something (minds-on and hands-on activities)? Do the activities promote self-directed learning?
3.6	Critique and revision	Does the project have a provision where students get a critique of their work and then do revision? Does the project help students reflect on their own learning?
3.7	Student voice and choice:	Does the project (where appropriate) provide multiple options from which students can choose? Are students' voices (ideas, suggestions, etc.) promoted?
3.8	Tangible public product	Does the project (where applicable) have a tangible product that can be shared publicly (e.g. with the caretakers, at the learning center, or on the IFERB platform)?

# 7. Monitoring & Evaluation

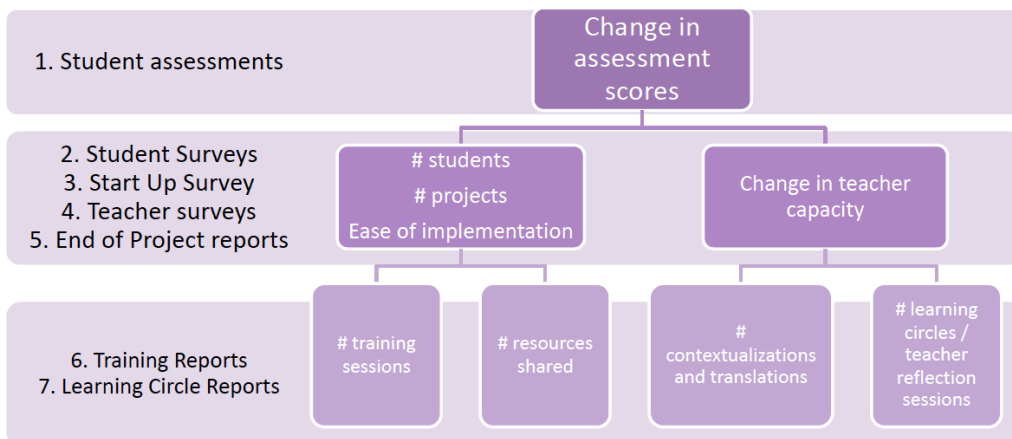
## IFERB Results Framework



## IFERB Key Performance Indicators



## IFERB Monitoring, Evaluation and Learning Tools





# 8. Appendix

## PBL Template

### PBL TITLE (LEVEL 1)

Description	
Leading Question	
Total Time Required	
Supplies Required	
Learning Outcomes	
Previous Learning	

### DAY 1

Sentence describing the learning goal for the day.

Suggested Duration	Activity and Description
10 minutes	
20 minutes	
15 minutes	
5 minutes	

### DAY 2

Sentence describing the learning goal for the day. For example: Today you will reflect on how difficult remembering things are and how important it is to remember things accurately.

EAA welcomes feedback on its projects in order to improve, please use this link:  
<https://forms.gle/LGAP9k17fMyrkjN7>

## Example PBL

### CODE LANGUAGES (LEVEL 1)

Description	Learners will discover the purpose of language and begin to get more familiar with the evolution of language as well as codes. They will explore invisible ink, glyphs, numerical codes, braille and sign language to finally design their own code letter
Leading Question	Can you write a letter in a hidden code language?
Total Time Required	5 hours over 5 days
Supplies Required	Paper, Pencil, Eraser, Dough
Learning Outcomes	<ol style="list-style-type: none"> <li>1. Understanding of the history and evolution of language especially from oral to written language</li> <li>2. Understanding the different types of language for those with visual or auditory impairments</li> <li>3. Understanding numerical concepts and patterns through written language</li> </ol>
Previous Learning	Knowledge of the alphabet

### DAY 1

Today you will begin by exploring and understanding the history of languages.

Suggested Duration	Activity and Description
10 minutes	<ul style="list-style-type: none"> <li>• Think of how many languages you can speak, read and write and:               <ul style="list-style-type: none"> <li>- Write or say out loud the same word in the different languages that you speak. For example: Water in English, Paani in Hindi and</li> </ul> </li> </ul>



## 9. References



### Background

<sup>1</sup>Dreesen, Thomas; Akseer, Spogmai; Brossard, Mathieu; Dewan, Pragya; Giraldo, Juan-Pablo; Kamei, Akito; Mizunoya, Suguru; Ortiz Correa, Javier Santiago (2020). Promising Practices for Equitable Remote Learning. Emerging lessons from COVID-19 education responses in 127 countries, Innocenti Research Briefs no. 2020-10, UNICEF Office of Research - Innocenti, Florence

<sup>2</sup><https://en.unesco.org/news/new-report-global-broadband-access-underlines-urgent-need-reach-half-world-still-unconnected>

<sup>3</sup><https://data.unicef.org/resources/remote-learning-reachability-factsheet/>

<sup>4</sup>[https://www.unicef.org/rosa/sites/unicef.org/rosa/files/2020-06/Guidance%20Continuity%20of%20Learning%20during%20COVID-19%20-%20Reaching%20All%20Children\\_UNICEF%20ROSA%20w%20cover.pdf](https://www.unicef.org/rosa/sites/unicef.org/rosa/files/2020-06/Guidance%20Continuity%20of%20Learning%20during%20COVID-19%20-%20Reaching%20All%20Children_UNICEF%20ROSA%20w%20cover.pdf)

### Solution

<sup>5</sup><https://en.unesco.org/news/startling-digital-divides-distance-learning-emerge>

<sup>6</sup><https://www.wsj.com/articles/schools-coronavirus-remote-learning-lockdown-tech-11591375078>

<sup>7</sup><https://journals.sagepub.com/doi/10.1177/2158244020938702>