



# Project PhoneShaala: Where Education is Just a Call Away

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**Abstract:** As the world searched for solutions with the COVID-19 pandemic bringing life to an unforeseen halt, the educational fraternity instantaneously switched to the online mode of instruction. Schools catering to the elite successfully made a smooth transition from 'brick to click classrooms'. Contrastingly, the needs of the underprivileged students for an equal access to education in a virtual world went unnoticed, creating a digital divide. It was at this juncture, that a group of determined academicians and social activists rallied together for a worthy cause. They undertook the noble mission of evolving and implementing 'PhoneShaala' - a resilient pedagogy to break barriers and build bridges, extending education to the marginalized learners who have no access to a smartphone or sophisticated technological resources and portals. The endeavour was based on the rationale 'Education for all through a toll free call'. This research paper provides a peek into the execution of Project PhoneShaala which led to the creation of a rich repository of 526 audio lessons which could be conveniently accessed by 573 disadvantaged learners from 3 States across the country. It evaluates the effectiveness of the venture in terms of the stakeholders' perceptions of 3 dimensions, namely, Audio Lesson Efficacy, Goal Attainment and Domain-Based Learning. Results indicated that the variance of Goal Attainment and Domain Based Learning was the highest, suggesting that a combination of these two variables made a significant contribution to enhancing the effectiveness of the resilient pedagogy PhoneShaala. This highlights the immense worth of this project, the reach of which can be extended in the near future to take literacy from the status of dream to reality in a developing Nation like India even beyond the ongoing COVID pandemic.

**Index Terms -PhoneShaala, EduCreators, EduModerators, Audio Lesson Efficacy, Goal Attainment and Domain-Based Learning.**

## I. INTRODUCTION

India being a developing nation, the fact that a vast majority of the population is constituted of first generation learners cannot be evaded. Some of the crucial challenges facing educational progress in post-independent India have been the dearth of schools, paucity of adequate school facilities, the declining school attendance of girls and the accompanying drop-out rates particularly in the rural areas. In the light of surmounting these impending challenges facing the educational landscape in our country, it becomes imperative that policy framers and practitioners engage themselves constructively towards designing schemes and projects which would serve to make the goal of education a viable and affordable reality for every Indian who aspires to be literate. This aim would remain a far-fetched dream if due consideration is not given to the economic affordability of the disadvantaged sections of society.

The COVID-19 pandemic has only accentuated educational concerns relating to student inclusivity and accessibility, and more so with regards to those coming from the disadvantaged and deprived sections of society. This challenge has in turn ushered in a new paradigm of instruction namely, 'Resilient Pedagogy'. It was this vision that provided impetus to initiating Project PhoneShaala - a noble endeavor by the eArth Samvarta Foundation and KDC Tek Pvt. Ltd. to ensure that underprivileged students remain lifelong learners no matter what the odds in their path. It comprised of a Teacher training college in Mumbai collaborating as the Knowledge Partner to create an audio lesson repository for underprivileged learners. The idea was to keep the flame of learning aglow not only through the pandemic but even beyond. It was intended to enable children who had no access to learning resources like computers, smart phones, tablets as well as online learning portals like Zoom, Google Meet, Cisco Webex and Microsoft Teams stay connected and have a right to education amidst challenging times and even beyond.

The true evolution of education amidst the COVID-19 pandemic will become a reality only when the right to education transcends the barriers which currently divide the Nation's schooling population on the basis of their access to online learning resources.

A review of research studies relating to disadvantaged learners in the Indian context puts the present study into perspective. The All India School Education Survey in 2008-09 (Rawal, 2011) of 12,85,576 schools including 11,22,334 rural schools spread across 633 districts revealed that 4.3 per cent of rural elementary schools in India had no classrooms at all, while another 8.4 per cent had only one classroom. Other statistics worth highlighting include 70 per cent of rural elementary schools in India which did not have

electricity connections, 14 percent of all primary schools had only one teacher and 2.2 crore children in the age group 6–14 years were not even attending school.

According to UNICEF, the shutting down of educational institutions because of the COVID-19 pandemic has affected over 1.57 billion students in 190 countries. The National Sample Survey 2017-18 indicates that of the poorest 20 percent households in India, only 2.7 percent have a computer and less than 9 percent have internet facility (Bhaskar, 2020). The highest performing education systems have also been found to be those that have a combination of equity and quality (OECD, 2012). Moreover, parents from low socio-economic backgrounds also aspire for computer literacy for their children (Pal et al., 2009; Shukla, 1996).

As eArth Samvarta Foundation worked as the designated Nodal NGO of NITI Aayog for COVID-19 relief work, a wide range of challenges faced by children from low-income families came to light. It was discovered that only 12.5 % of Indian students had access to the internet. According to the Annual Status of Education Report (ASER), 2020 Wave 1 (Provisional), approximately one third of the enrolled students received some form of learning material during August 2020 when the schools were closed. The ASER Report also highlighted that in the case of students who did not have access to smartphones, more than half the children received materials through physical visits (either going to school or teacher coming home). Of those who had never enrolled in schools, major reasons for non-enrollment included financial constraints, distance from schools, unsuitable timings of educational institutions, and route to educational institutions being unsafe (75th National Student Survey, MOSPI, 2017 – 18).

Keeping this grim picture in focus, the Resilient Pedagogy PhoneShaala was evolved. It was based on the dictum 'Education for all, through a toll free call'. This research paper provides a bird's eye-view of how this pedagogy was pioneered and presents educational implications which throw light on the sustainability of this resilient pedagogy in a developing Nation like India. .

## II. OBJECTIVES

The objectives of the study were as follows:

1. To evaluate the effectiveness of the resilient pedagogy Phoneshaala in terms of Audio Lesson Efficacy, Goal Attainment and Domain-Based Learning.
2. To identify the predominant strengths of the resilient pedagogy.
3. To determine the correlation between the 3 dimensions relating to the effectiveness of the resilient pedagogy.

## III. HYPOTHESIS

The following null hypothesis was formulated for the study:

- There is no significant relationship between the 3 dimensions relating to the effectiveness of the resilient pedagogy PhoneShaala.

## IV. RESEARCH METHODOLOGY

The research design employed was descriptive and included a survey. Moreover, the present study is of the correlational type because it sought to analyse the relationship between the 3 dimensions of the Resilient Pedagogy PhoneShaala.

### 4.1 Population and Sample

The study was conducted from 1st August 2020 to 31st January 2021 as a part of the Community Outreach Programme of St. Teresa's Institute of Education, Santacruz, Mumbai - a B.Ed. college affiliated to the University of Mumbai. The purposive sampling technique was used to select the sample which comprised of 48 EduCreators (student teachers) from the English medium, private-aided teacher training college and 28 members from the eArth Samvarta Foundation and KDC Tek Pvt.Ltd. comprising of Core-team members, Subject Managers, EduModerators and EduCreators.

### 4.2 Data and Sources of Data

Each student teacher (EduCreator) created a lesson script every week on a topic of her choice selected from a prescribed list relating to different standards and subjects of the school curriculum. As an EduCreator, she could choose the medium of instruction for the same. These lesson scripts were uploaded on the PhoneShaala portal and thereafter allocated by the Subject Managers to the EduModerators for assessment. Once suitably modified and approved, the EduCreators converted the scripts into audio lessons of 3-10 minutes duration each and uploaded them on the PhoneShaala portal. This repository of audio lessons was then made available to 573 underprivileged learners across 3 states - Uttar Pradesh, Bihar and Maharashtra through toll free calls.

The PhoneShaala Project Perception Scale was administered to the sample. It was a 5 point Semantic Differential Scale comprising of 3 dimensions, namely, Audio Lesson Efficacy (ALE), Goal Attainment (GA) and Domain-Based Learning (DBL) with 10 items pertaining to each dimension. The tool comprised of a list of pairs of adjectives describing different dimensions pertaining to the Resilient Pedagogy PhoneShaala. The two words in each pair were opposites of the dimension in question with five points in between. Students were expected to circle that point which best indicated their opinion of how much of that particular dimension they thought the Resilient Pedagogy PhoneShaala achieved. The reliability coefficient obtained for internal consistency of the PhoneShaala Project Perception Scale was 0.977. The coefficient of stability obtained for test-retest reliability of the scale was 0.887.

Project Phoneshaala resulted in the creation of a total of 768 lesson scripts and 526 audios in all spanning across a wide range of subjects and standards not only in English, but also in popular vernacular languages so as to meet the needs and demands of the target audience.

### 4.3 Theoretical framework

The operational definitions of the key terms included in this study have been given below:

1. **EduCreators:** B.Ed. teacher trainees who created the audio lessons for the PhoneShaala portal.
2. **EduModerators:** Team members who on the basis of their knowledge and expertise were appointed to review the scripts and audio lessons created by the EduCreators as a measure of quality control.

3. **Subject Managers:** Team members who would coordinate with EduCreators and EduModerators to ensure smooth functioning of the learning ecosystem by addressing obstacles and delays in uploading lessons on the portal.
4. **Audio Lesson Efficacy:** The extent to which a given 3-10 minute audio lesson was accessible, meaningful, effective and interesting.
5. **Goal Attainment:** The effectiveness of the project in terms of meeting the objectives envisioned for the resilient pedagogy.
6. **Domain-Based Learning:** Development of competencies relating to the Cognitive, Affective and Psychomotor Domains of learning.
7. **Underprivileged Learners:** Pupils who have no access to high end digital learning resources due to financial constraints.

**4.4 Statistical Analysis**

The scores were tabulated and then analyzed using descriptive and inferential statistics.

- **Descriptive analysis** included the summary of the Mean Percentage of Stakeholders’ perceptions of the three dimensions of the Resilient Pedagogy PhoneShaalaa namely; Audio Lesson Efficacy, Goal Attainment and Domain Based Learning. The magnitude of these variables was computed.
- **Inferential statistics** Pearson’s Coefficient of Correlation was then employed as part of inferential analysis to compute the likely correlation between different combinations of the 3 dimensions namely Audio Lesson Efficacy, Goal Attainment and Domain Based Learning.

**V. RESULTS AND DISCUSSION**

**5.1 Results of Descriptive Statistics of the Study Variables**

Table 1 summarizes the magnitude of the variables of the study.

Table 1: Magnitude of the Variables of the Study as Perceived by Different Stakeholders

DIMENSION OF THE RESILEINT PEDAGOGY	STAKEHOLDER POSITION	MEAN	PERCENT MEAN	TOTAL MEAN PERCENT	MAGNITUDE
AUDIO LESSON EFFICACY	Core Team	43	82.5	82.75	HIGH
	Subject Manager	45.4	88.5		
	EduModerator	40.57	76.43		
	EduCreator	43.42	83.55		
GOAL ATTAINMENT	Core Team	47	92.5	91.68	HIGH
	Subject Manager	47.2	93		
	EduModerator	45.21	88.03		
	EduCreator	47.28	93.2		
DOMAIN BASED LEARNING	Core Team	46.29	90.73	90.32	HIGH
	Subject Manager	47.4	93.5		
	EduModerator	44.21	85.53		
	EduCreator	46.58	91.5		

In Table 1, the highest Mean percentage of Goal Attainment indicates that the Resilient Pedagogy PhoneShaalaa attained its intended objectives efficiently. Further, it made a substantial contribution to Domain Based Learning in the EduCreators. The comparatively lower Mean percentage of Audio Lesson Efficacy could possibly be due to technical snags arising from a lack of technological know-how on part of the EduCreators, coupled with a lack of familiarity with the concept of audio lessons initially, along with the time consumption for preparing and translating an audio lesson. Work related stress to perform on the part of the EduModerators so as to evaluate the created lessons within the stipulated time frame, probably confounded the problem further. However, it is noteworthy that on the whole, all the 3 dimensions were high in magnitude, indicating the overall effectiveness of the project.

## 5.2 Results of Inferential Statistics of Study Variables

The null hypothesis states that there is no significant relationship between the three dimensions relating to the effectiveness of the Resilient Pedagogy PhoneShaala. This was tested using Pearson's Coefficient of Correlation.

### Correlation between Audio Lesson Efficacy (ALE), Goal Attainment (GA) and Domain Based Learning (DBL):

Table 2 indicates the obtained 'r', tabulated 'r' and significance of 'r' for each of the correlated variables at the respective degrees of freedom (df) of 0.05 and 0.01 levels in the Total Number of Stakeholders.

Table 2: 'r' Values and Significance of 'r' between ALE, GA and DBL

	No. Of Stakeholders	Df	Obtained 'R'	Tabulated 'R' At 0.05 Level	Tabulated 'R' At 0.01 Level	Level Of Significance	Variance
<b>GA x DBL</b>	76	74	0.6389	0.217	0.283	0.01	40.82%
<b>ALE x DBL</b>	76	74	0.5833	0.217	0.283	0.01	34.02%
<b>ALE x GA</b>	76	74	0.5212	0.217	0.283	0.01	27.16%

From Table 2, it is seen that the obtained 'r' in each case is greater than the tabulated 'r' at the 0.01 level of significance, positive and moderate/substantial in magnitude. Hence 'r' between the combinations of any two given variables is significant at the 0.01 level. Thus the null hypothesis is rejected.

The variances in the variables imply that:

1. Greater the Goal Attainment of the resilient pedagogy, greater will be the Domain Based Learning.
2. Greater the Audio Lesson Efficacy of the resilient pedagogy, greater will be Domain Based Learning.
3. Greater the Audio Lesson Efficacy of the resilient pedagogy, greater will be the Goal Attainment

The data also implies that the Variance of Goal Attainment and Domain Based Learning is the highest, suggesting that a combination of these two variables made a significant contribution to enhancing the effectiveness of the resilient pedagogy PhoneShaala.

**5.3 Discussion:** The effectiveness of the resilient pedagogy PhoneShaala was evaluated in terms of the stakeholders' perceptions of its 3 dimensions, namely, Audio Lesson Efficacy (ALE), Goal Attainment (GA) and Domain Based Learning (DBL).

The relationship between GA and DBL was observed to be positive, substantial in magnitude and significant. This finding is corroborated by research evidence (Marjorie, 2009), which emphasizes that learning should lead to the development of the 3 domains in order that education fulfils its goals in the truest sense. Moreover, in the context of evolving a resilient pedagogy which could overcome the constraints of learning during the COVID-19 pandemic, PhoneShaala ensured that less fortunate learners were not deprived of access to education, but instead provided with a methodology that suited their economic affordability, at the same time not compromising on the quality of education they received. The highest Mean percentage of Goal Attainment only implies the invaluable worth of the PhoneShaala portal in building bridges and breaking barriers which alienate marginalised learners. The strength of the Domain Based Learning dimension indicates that this pedagogy could well be a path changer in the teacher training curriculum, which normally overemphasizes the cognitive and psychomotor domains of learning. Project PhoneShaala provided student teachers with a wide scope of competencies ranging from acquiring knowledge, tapping into their creativity, sensitising them to the needs of the less fortunate whilst also honing speaking, writing and recording skills through the preparation of the audio lessons. This holistic development of student teachers in turn ensured attainment of the project goals in providing quality education to underprivileged learners at no cost.

The relationship between ALE and DBL was observed to be positive, moderate in magnitude and significant. This connect can be explained in terms of the process of audio lesson creation making a reasonable contribution to the three domains of learning. Student teachers were led to explore innovative ideas in designing the lessons, such that content in the different subjects, even Mathematics could be put across in an engaging and yet simplified manner. In discovering newer ways and activity based strategies to take education to backward learners, teacher trainees devised solutions to overcome the challenges in making learning meaningful and retentive, while also gaining an awareness and sensitivity to the needs of deprived children. Thus, the proficiency gained by the student teachers in preparing audio lessons ensured a balanced development of all the 3 domains.

The relationship between ALE and GA was observed to be positive, moderate in magnitude and significant. This could be attributed to the quality of the audio lessons, their attention holding capacity and their efficiency in imparting knowledge and training disadvantaged learners in basic competencies. This in turn, enhanced the possibility of the PhoneShaala endeavour attaining its intended goals of providing basic education in a safe environment of the home during the pandemic. More importantly, the creative ideas used to ensure the attention holding capacity of the lessons proved to make learning an interesting and enjoyable experience for those who had no access to the more sophisticated and expensive means of online communication, let alone smartphones. Designed to cater to different subjects of the school curriculum, the beneficiaries had a fair choice and the flexibility of selecting lessons pertaining to their standards and medium of communication, fostering effective learning. Previous research evidence implies that underprivileged children learn better when they are taught in their spoken language (Benson and Kosonen, 2013; Yiakoumetti, 2012). The NEP 2020 advocates this same school of thought by recommending that till Class 5, children in schools should be taught in their mother tongue/regional language/local language (NEP, 2020). The PhoneShaala



portal also enabled self-learning, which became an imperative need during the lockdown mode of curriculum transaction. It offered learners the added advantage of listening to an audio as many times as they liked until they attained mastery of the concept being taught.

## VI. EDUCATIONAL IMPLICATIONS

The practical applications of Project PhoneShaala far surpassed the objectives for which the endeavor was initially conceptualized and launched. It brought to light myriad different prospects of this Resilient Pedagogy which qualify it to be a viable means of reaching education to the masses in a developing Nation like India, where a vast majority of learners have no access to advanced digital resources for learning. It helped teacher trainees transcend the boundaries of ordinary classroom teaching and explore the creative landscape of making learning a lasting and fun-filled experience for under privileged children who have no access to school education. More importantly, it trained student teachers in the art of coming up with ingenious ways to teach subjects of the school curriculum using the audio medium alone and equipped them with the skills and expertise to do so. It provided the amateur teacher aspirants with a hands-on experience to reach out to the less fortunate kids whom they would never ordinarily encounter in their teaching careers bringing their affective instincts to the fore. They realized that the essence of being a good teacher lies not only in educating learners who hail from well-off sections of society and plush schools, but rather those who have been left behind to fend for their own learning.

## VII. CONCLUSION

The project displayed a healthy amalgamation of resources with each team member putting their best foot forward thereby showcasing a model ecosystem for teamwork and collaboration. What most deserves a mention is that Project Phoneshaala could well be considered a valuable formula to balance the equation of access to educational opportunities between the affluent and marginalized learners in our country. It went beyond the call of catering to the learning of the underprivileged learners during the pandemic for which it was originally designed and could serve to sustain itself as a useful pedagogical practice even beyond, if there is an adequacy of funds which could be generated as a part of Corporate Social Responsibility by different organisations.

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