

Educating the Urban Poor:

Case study of running pre-schools in Non-notified Slums of Bengaluru

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Introduction

In recent years, India's cities have grown at an unprecedented rate as rural migrants flood urban centers in search of economic opportunities (Chandrasekhar & Mukhopadhyay, 2012; Subbaraman et. al., 2012; Tsujita, 2012). Although some of the migrants are middle class, many are members of transitory populations looking to escape rural poverty. These individuals tend to relocate to slums, which the Census of India (2001) defines as a compact area with a population of at least 300, or about 60-70 households of poorly built congested tenements, in unhygienic environment, usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities. Consequently, India's urban slums are experiencing a population explosion: scholars estimate that about 93 million Indians currently live in urban slums (Subbaraman et. al. 2012).

One of the greatest challenges children living in slums face is school persistence. This problem is especially poignant given that a sizeable portion of migrants claim that their primary motivation for relocation was the lure of better schools in cities (Tsujita 2012). A growing body of literature elucidates the challenges of educating students from transitory populations who populate slums, including (but not limited to) street children, rural pastoralists, and child laborers (Dyer, 2010; Saini & Vakil, 2001; Sud, 2010; Tsujita, 2012). These children and their families lead unpredictable and transitory lifestyles, following season labor, shifting to pursue temporary work, or leaving when authorities question their right to their homes (Sud, 2010; Dyer, 2010;

Tsujita, 2012). When children switch habitations and schooling, they miss critical content and, in the case of India, they are forced to master foreign languages quickly to adapt to the local medium of instruction (Tsujita, 2012). The task of adjusting and readjusting can be difficult for students to master, particularly if they lack a solid base in the fundamentals, and many drop out because of frustration (Tsujita, 2012). The demands of pure survival and accompanying responsibilities force children to grow up at an early age, denying them opportunities to play and develop socioemotional intelligence that could help them develop resilience, coping mechanisms, and social capital essential for breaking the cycle of poverty (Saini & Vakil, 2001). Generally, scholars agree that children growing up in slums face steep obstacles to obtaining even a basic education, despite the hopes and dreams of their migrant families.

Tsujita (2012) claims exposing slum children to early childhood education could provide them with basic cognitive and socioemotional skills necessary for overcoming challenges and achieving persistence in primary and secondary school. Extensive literature documents the social and academic benefits of quality educational interventions administered between the ages of 0 and 5 (Aboud & Hussein 2011; Belsky et. al. 2007; Levine, 2005; Rao, 2010; Sharma et. al., 2008). Across cultures, early childhood education and care has shown positive long term effects ranging from lowering dropout rates, increasing academic achievement in the early grades, boosting earning capacity later in life, and fostering socioemotional skills associated with positive psychosocial outcomes. It seems intuitive that providing families in slums with early childhood education and care should improve children's abilities to succeed in school.

To its credit, the government of India has invested heavily in the growth of public early childhood education administered through the Integrated Child Development Services Scheme (ICDS), a free, national feeding and educational program for children between the ages of 2 and

6 (Rao, 2010; Sharma et. al., 2008). The services provided by ICDS are designed to improve the life chances of children who, born in a sprawl of overcrowded shacks or tenement buildings, start life on poverty's front line. While ICDS is currently expanding its reach to metropolises across India, the services are administered only to notified slums. Yet, many urban centers have slums that are not notified by the slum board, and thereby do not have access to these free educational services that could make a huge difference in the lives of their children. In fact, Subbaraman et. al. (2012) estimate that almost half of Indian slums are non-notified, meaning that a huge population of the poorest of the poor lack access to ICDS. While the challenges in urban slums are great, the challenges in non-notified slums are even greater, and often the populations face even greater instability and economic hardships than those in notified slums.

In the following paper, we describe an early childhood educational intervention intended to close this gap. Akshara Foundation administered an informal preschool program over 12 months in a set of non-notified slums in Bengaluru. The intervention is particularly noteworthy because it involved starting a system from scratch, as the area was not recognized by the local government, and therefore was severely under resourced. Our hope is that this work will detail a model that can be replicated globally, and will highlight the need for governments to pay more attention to non-notified slum dwellers.

Bengaluru's Non-Notified Slums

In India, the slum notification process occurs under the auspices of the Slum Act using criteria mentioned above (Census of India 2001). Areas notified as slums by the respective municipalities, corporations, local bodies or development authorities are treated as “notified slums” and those unrecognized by the local bodies were considered to be “non-notified slums.”

Although they suffer from a range of problems, including a lack of infrastructure, poor access to educational opportunities, and inadequate sanitation, notified slums tend to be better areas than non-notified slums. Recent studies show that almost half of slum-dwellers in India live in non-notified slums (Subbramman et. al., 2012). Yet, little research exists about the challenges these residents face, particularly as children.

The few studies that exist on this topic repeatedly show that non-notified slums are worse off as compared to notified slums in terms of drinking water, electricity, roads, toilet facility, septic tanks/flush latrines and underground drainage systems (Government of India, 2001). The labeling of these settlements as non-notified also has the symbolic effect of convincing urban local bodies and government institutions that they have no obligations to make public amenity provisions in these areas, a condition that leads to governmental neglect even when governmental action is possible (Subbaraman et. al., 2012). Non-notified slums hence fall under settlements with the least amount of public provisioning, a pattern that takes a toll on inhabitants. Although few studies have focused on the outcomes of non-notified slum dwellers, the research that exists suggest that residents of non-notified slums have higher infant mortality rates, lower literacy rates, and less access to clean drinking water and functioning sanitation than their peers in notified areas.

The scanty research on non-notified slums also suggests that access to government run schools is more problematic for these residents than for their peers in recognized slum areas (Subbaraman et. al., 2012). It is almost impossible to find land in cities, let alone legal land next to technically illegal neighborhoods where schools can be constructed. Consequently, residents may have to travel long distances to get to schools, and if they arrive late children may be sent home, as teachers are unaware of how difficult it can be for children to access transportation.

Further, water insecurity may force children to wait for unreliable trucks or other sources of water to arrive so that they can bathe before going to school. All of these circumstances make it difficult to attend school regularly. Since the area is unrecognized by the government, it is not provided with anganwadis, or early childhood care and feeding centers administered through ICDS. It is therefore reasonable to believe that some siblings – particularly older sisters - may have to stay home to take care of younger children, also contributing to low rates of attendance. In these ways, non-notified slum residents are some of the most vulnerable children in the educational system.

Keeping these conditions in mind, K. Vaijayanti worked with staff at Akshara Foundation, a Bengaluru-based NGO focused on improving educational outcomes for Karnataka’s poorest children, to design an intervention to provide early childhood education to children in non-notified slums. In the following section, we outline how the intervention was designed, and the methods used to assess its effectiveness. As we will show, the intervention proved successful, showing improvement in a variety of cognitive and socioemotional domains for children in the non-notified slum community.

The Akshara Intervention

The intervention began as a result of Akshara’s extensive work in Bengaluru, where research on potential educational projects revealed a huge number of children living in non-notified slums and lacking access to early childhood education. Akshara’s previous efforts with ICDS had been well received by both local government and the families who benefited from the services. Consequently, staff felt it was a natural extension of existing work to develop a program for non-notified areas where early childhood education and care infrastructure did not

exist as a result of the area's lack of recognized status. The approach to setting up preschools in five non-notified slums in [urban center] followed a sequence of strategies like a feasibility study, setting up of centers, provisioning of teaching and learning materials, capacity building of preschool instructors and measuring educational outcomes. This section outlines the steps taken to implement the intervention.

The project began with a feasibility study to assess the attitudes of slum dwellers towards their living situations, basic indicators, and availability of resources. On a basic level, the survey provided information on the level of need, identifying 829 children in the age group 3-6 in the 1225 households polled, and revealing that over 90% of the households reported that there was a need for a preschool in the area. Additionally, a majority of the households felt that the timings should be 9 am to 3 pm, so this was the schedule adopted. The methods and results of the study are described in greater detail below.

Having gathered this information, Akshara began recruiting instructors and identifying suitable spaces for the preschools (known as balwadis), both of which proved challenging. The first hurdle for recruitment was identifying instructors who were both fluent in the identified medium of instruction and had at least a pre-university education. The populations of the non-notified slums were linguistically diverse and even residents who technically spoke the state language tended towards rural dialects that did not match the medium of instruction in government schools. With difficulty the team managed to identify instructors in the five slums, based on these criteria. All of the candidates were required to pass a written test in Kannada, English and Mathematics, designed by Akshara Foundation.

Infrastructure was another challenge. Balwadis were routinely set up in the homes of volunteer instructors because of the lack of empty space in the crowded habitations. Meals were

routinely cooked in the houses or in neighboring houses. The general lack of facilities throughout the area meant that the balwadis lacked running water, electricity, and, in some cases, light and ventilation. However, families were willing to provide what they could as a measure of solidarity and support for the effort, which most saw as useful.

Once the workforce and spaces were identified, female volunteer instructors received a five day training program in preschool education and its importance; how to manage a balwadi and impart learning and instruction in a fun-filled manner; how to use the teaching-learning material and administer assessments to gauge learning outcomes; why using teaching-learning materials is important; how to manage children and classrooms; and general information about child development and the importance of pre-school education. Additionally, they received two days of follow up training annually. All ten initial instructors were trained. In the case of attrition, supervisors trained new inductees on the job.

Akshara designed the teaching-learning materials to support a developmentally appropriate, play-based curriculum that has been implemented in anganwadis throughout the urban center for well over a decade, and has repeatedly proven to result in positive socioemotional and academic outcomes for young children. Volunteer instructors received an honorarium for the training and their work, and were required to attend refresher courses. Additionally, supervisors from Akshara Foundation visited each center at least twice a week to provide coaching, support, and monitoring.

The intervention took place from September 2010 to March 2011, after which a lack of funding prevented its continuation. As the following sections will demonstrate, the preliminary results from this pilot year indicate that the program has significant positive potential for improving the learning outcomes of the youngest residents of non-notified slums. It is our hope

that the program can be replicated in other urban centers, and that the model could be considered for more widespread use throughout India.

Methods

The first data collection exercise was a feasibility study. In the absence of any documented information on these non-notified slums it was decided to employ the household survey method to collect information on how feasible it was to set up preschools in these areas and selected five such locations randomly. The methodology employed was a survey of all the households in the areas. A survey instrument was developed to collect information through a combination of qualitative and quantitative data collection. The survey included questions about the perceptions of stakeholders in the interest of capturing the social realities of the slums. Around 25 field staff members were deployed and teams of five to six members were formed to collect data from 1225 households across five non-notified slums. All five were randomly selected from the list provided by the Slum Board. Those selected can be categorized as big, medium and small size slums ranging from 1000 households to 300-350 households and less than 100 households. In medium and small sized slums, every household was surveyed. In larger slums that had around 1000 households, the area was broken into five parts and two parts were completely surveyed. Data was collected in participants' mother tongues.

The educational impact assessment was developed based on the school readiness curriculum and materials given to the volunteer instructors, which were aligned to indicators covering seven broad preschool related domains: general awareness, gross motor, fine motor, self-help skills, eye-hand coordination, language development, intellectual development, socio-emotional development, pre-academic reading, pre-academic writing, and pre-academic mathematics. Each domain was broken into specific indicators used to develop an assessment

tool. All the indicators were field-tested before being rolled out, and the test was developed in consultation with child development experts. Volunteer preschool instructors asked each child a series of questions in each learning domain. Some of the questions necessitated oral answers, some of them were task-related, and some were observations made by the examiner. Assessment was part of the standard training that all instructors received.

Preschool volunteers administered the assessment both pre- and post-intervention. Each assessment was administered over a six-day period. All children who were present in the 10 preschools received the assessment. For analysis purposes the data of children who appeared for both the pre- and post-tests was considered. Around 246 children participated in the pre-test in September 2010 and at the time of the post-test in March 2011 around 182 children were present. Therefore, the total sample size was 182 and attrition was approximately 26%. Considering that the population was highly transient and migratory, this high rate was to be expected. The results were analyzed both descriptively and using an ANOVA repeated measures test. The small sample size and the fact that data was self-reported are limitations of the study, as is a lack of a control group to differentiate between gains related to the assessment and those achieved through the natural development process.

Findings

In the following section, we discuss two sets of findings. The first are from the feasibility study. These findings provide a demographic overview of the populations in the slums, information that is particularly valuable given the lack of attention paid to non-notified populations, and the consequent dearth of statistical data about their lifestyles, traits, and habits.

The second set of findings is the result of the educational impact assessment. These findings elucidate both victories and challenges, and suggest areas for further study and improvement.

Findings from the Feasibility Study

The first section of the feasibility study focused on clarifying the nature of the slums and the demographic profile of the inhabitants. The first question was about the slums themselves. Only about 15% of residents said that they lived in privately owned slums, a situation that seemed to expose inhabitants to exploitation at the hands of the owner. For example, in one slum, residents said they were forced to make all of their purchases from a local grocery store that was also owned by their landlord. The vast majority of respondents (79%) said that they lived in government operated slums, and about 78% of respondents had lived in their areas for over 10 years. In fact, almost half had lived in their areas for more than two decades, and 78% owned their homes, calling into question why these largely government-owned areas have not yet been notified given the long history of inhabitation and the high rate of home ownership. Although terms like ownership suggest some sort of permanence, the majority of homes in the area were concrete sheet, which are temporary residencies that can be demolished at any time.

When asked about infrastructure, respondents provided consistent answers within each slum. For instance, while respondents from three of the slums emphasized the need to address water supply and drainage issues, residents of two other slums said they were more concerned with the lack of toilets. While residents of three slums reported regular access to government issued water, all respondents across habitations said that the lack of drainable, potable water, and toilet facilities were the most critical issues they faced. Two slums reported having access to electricity at home.

Table 1

Slum Characteristics									
Slums by Type		Duration of stay		Home Ownership		Type of Home		Rent Paid Per Month	
Government	79%	Up to 5 Years	14%	Own house	78%	Kuccha	5%	Less than Rs.500	18%
Private	15%	6 - 10 years	17%	On lease	2%	Hut	18%	Rs.501 – 1000	33%
No Response	7%	11 - 20 years	26%	Do not own	20%	Concrete Sheet	64%	Rs.1001 - 1500	19%
		21 - 30 years	28%			RCC (concrete)	11%	Rs.1501 – 2000	9%
		More than 31 years	14%					Over Rs.2001	9%

In terms of demographics, the vast majority of inhabitants were from Karnataka, where this urban center is located. A sizable minority – about a quarter – of inhabitants came from the neighboring state of Tamilnadu, and about 2% were from the neighboring state of Andhra Pradesh (AP). Natives of Tamilnadu and AP speak Tamil and Telegu respectively, and account for substantial linguistic diversity within the slum. However, it should also be noted that inhabitants of Karnataka frequently spoke local dialects that differed from the urban version of Kannada used as a medium of instruction in government schools. Furthermore, about 52% of households spoke Tamil, regardless of their native place, and a sizable minority spoke Urdu at home, most likely because of their Muslim faith. Consequently, those who were from the same state were not necessarily fluent in the local language. A general trend that these statistics support is the influx of migratory populations into urban centers: the majority of respondents were natives of areas outside of the city.

In terms of other demographic characteristics, more than three quarters of families identified as Hindu. Within this category, 60% of households identified as scheduled caste, 17%

identified as other backward castes, and 11% identified as scheduled tribes. The majority of residents who did not identify as Hindus identified as Muslim (16%) or Christians (5%).

While the entire sample represented geographic, linguistic, caste, and religious diversity, individual slums themselves tended to be demographically homogenous. For example, 83% of residents of one slum identified as Scheduled Caste, and 92% of them spoke Tamil. In another slum, 94% of households spoke Kannada. This could be an indicator of self-segregation, or of entire communities locating to urban centers together, and relying on one another for guidance and support during and after the migration process.

Table 2

Demographics							
Religion		Caste		Native State		Mother Tongue	
Hindu	77%	Scheduled Caste	60%	Karnataka	71%	Tamil	52%
Muslim	16%	Other Backward Caste	17%	Tamilnadu	25%	Kannada	27%
Christian	5%	Scheduled Tribe	11%	Andhra Pradesh	2%	Urdu	17%
Other	2%	Other	9%	No Response	2%	Telugu	3%
		No Response	2%			Other	1%

The final area of inquiry in the survey concerned economic indicators and, in particular, government provided financial aid. The majority of respondents (60%) said that they had yellow Below Poverty Line (BPL) cards that entitled them to a range of benefits and subsidies, and helped them access other governmental programs. However, despite the fact that the majority of respondents fell into the poorest of the poor category, making them eligible for a range of benefits, only about 8% of households had green Anthyodaya Cards, indicating their participation in this poverty alleviation program. About 30% of households surveyed reported

that they did not have any cards that entitled them to public provisioning by the government. This again may point to the lack of interest from government agencies, and the consequent lack of awareness among residents about the procedures necessary to take advantage of these aid programs.

Despite these conditions, the majority of participants surveyed stated that educating their children was a priority, a finding consistent with other studies of slum populations (Tsujita, 2012). Families generally saw education as one of the most viable paths out of poverty, and therefore were willing to contribute time and resources to developing a community balwadi. Perhaps most tellingly, 90% of respondents were supportive of the introduction of a balwadi program. This popular support was further justified by the success of the program, described in detail in the next section.

The Educational Impact Study

Overall gains between pre- and post-tests were 24 percentage points, indicating that generally children who were in the program made developmental progress. While children showed progress in every single domain, indicating that the overall intervention seems to improve school readiness and academic preparedness for participants, the most impressive results were in pre-academic mathematics, socioemotional learning, and language skills including pre-academic reading, general language(which focused on speaking skills), and writing. These areas will be discussed in greater detail below.

Figure 1

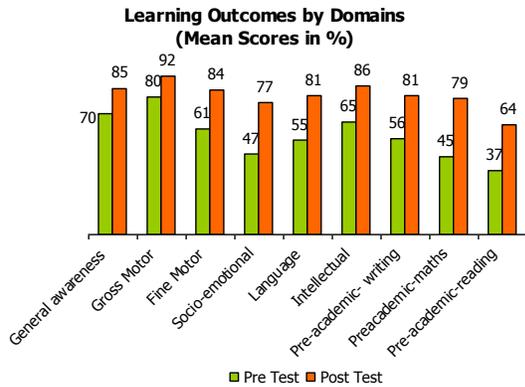


Table 3
Learning Gains Within Domains

Domain	Pretest Score	Post-test Score	Difference
Preacademic maths	45	79	34
Socioemotional	47	77	30
Preacademic reading	37	64	27
Language	55	81	26
Preacademic writing	56	81	25
Fine Motor	61	84	23
Intellectual	65	86	21
General awareness	70	85	15
Gross Motor	80	92	12

Pre-tests indicated that before the intervention, children lacked even basic mathematical skills. Less than a third of children could recognize the numerals 1-9 before the intervention, and less than half could count nine objects, tell the difference between more and less, and do rote counting. At the post test, 68% of children could recognize 1-9, 74% could count nine objects, and 77% were able to tell the difference between more and less. Overall gains increased by 34% across math competencies between pre- and post-tests. These skills will serve children well in class one, where basic mathematical concepts are introduced.

Socio-emotional skills help children learn to socialize with other children in an appropriate and peaceful way right from the age of 3 or 4. The data showed that the overall gain increased from 47% to 77% across competencies related to socio-emotional skills between pre- and post-tests. The results showed that more than three fourths of the children shared toys and made friends easily after the intervention. These gains are significant considering that children in slums are often forced into maturity early in life due to economically unstable family conditions, and are therefore not able to engage in play activities associated with socioemotional developmental outcomes that are available to their wealthier peers (Subbramman et. al., 2012; Tsujita, 2012). Furthermore, these coping skills are particularly useful in unstable environments, which require maturity and emotional resilience to navigate.

Overall gains increased from 55% to 81% across language skills. 90% of the children could narrate a story and recite a rhyme. 75% of them knew what “up and down” means, a score that stood at 29% during the pre-test, but by the post-test 50% more children had picked up. More than 78% of the children could identify verbs. 72% of the children could identify their left and right hands. Many children were able to identify body parts and articulate “up/down,” “in/out,” and “front/back” movements when instructed to do so. A majority of the children were able to identify fruits and vegetables, primary colours, sing rhymes and follow three-sentence instructions. The mastery of these words are particularly useful given a growing body of research on effects of the vocabulary gap suffered by children from lower income households (Hart & Risely, 1992). These studies show that children in wealthier households are exposed to more words before the age of six because of a combination of parents having greater literacy and more time to spend interacting as a family. Children from low income households suffer academically

long term because they begin school with this deficit. Preliminary results indicate that children were exposed to some vocabulary development that could help narrow this gap.

In terms of pre-reading skills, the data shows that overall gains increased from 37% to 64% across competencies related to reading between pre- and post-tests. While only 33% of the children were able to recognise Kannada alphabets at the time of the pre-test this number increased to 75% by the post-test. Gains were also recognized in pre-writing: whereas only about a third of children could copy patterns before the intervention, three fourths of them were able to do so after the intervention. Children also showed gains in abilities to trace letters and numbers and their abilities to grip and manipulate pencils.

In addition to these domains, children demonstrated improvement in several other areas as well. For example, children showed gains in intellectual development, a domain designed to assesses critical thinking skills. Rather than simply asking children to name categories of things at random, these questions test whether or not they can associate specific labels to specific colours, shapes and sizes. In this domain, pretest scores were particularly low: a majority of the children were unable seriate rings by size, differentiate between the concepts of “bigger” and “smaller,” and identify shapes. By the end of the intervention, 80% of children could separate pieces by size, 74% could identify basic shapes, and 87% could separate objects by color, all of which represented gains. These types of critical thinking skills coupled with greater socioemotional competency demonstrated in another area of the assessment will serve students well as they continue into class one and beyond, and are forced to deal with new academic and social situations.

The difference scores in Table 3 were analysed using a repeated measures ANOVA. The data was also analysed by gender and class language to test for within subjects effects. For the

purposes of the analysis, all pre-academic domains (including reading, writing, and math) were collapsed into one category.

In the repeated measures test, every domain showed that the difference scores were statistically significant at $p < .05$. No gender effects were observed. However, the categories of general awareness and language showed Kannada medium classrooms outperforming Urdu medium classrooms ones by a statistically significant difference at $p < .05$. The language difference is intuitive, given that “language” was a composite measure of skills in Kannada and English; it makes sense that providing instruction in Kannada for all subjects would, in turn, improve Kannada language skills. The general awareness number is a bit more difficult to explain.

Although these results were not collected in a controlled study, and that they are self-reported, they indicate promising preliminary results, particularly from a time-limited intervention. Further study is necessary to differentiate between the gains children made as a result of the intervention and those that were accomplished because of natural developmental processes. However, considering the vast limitations on resources, skills, and time, these pilot results suggest that the intervention could be a promising model that could be replicated and studied further

Implications

Target 7.D of the Millennium Development Goals includes achieving significant improvements in the lives of 100 million slum dwellers by 2020 (United Nations, 2013). In India, such a goal will be impossible to reach without addressing the needs of non-notified slum dwellers. The findings from the feasibility study indicate that despite their high rates of home

ownership and long term residency, non-notified slum dwellers lack access to basic amenities, do not take advantage of government sponsored poverty-alleviation programs, and are unable to enroll children in educational programs, despite the high rate of motivation among parents to ensure children are successful in school.

Despite these findings, one of the challenges faced by instructors was high rates of attrition and unpredictable attendance, which was potentially a result of the migratory lifestyles of those residents who were not long term slum dwellers. These problems are typical of transient populations in both urban and rural areas that are forced to move because of the demands of work, or to miss school because of paid or unpaid financial obligations ranging from labor like piecework to unpaid labor like childcare, cooking, or other homework (Dyer, 2010; Subbaraman, 2012; Sud, 2010; Tsujita, 2012). These realities call into question the established methods of educational delivery that involve regular day time hours and tie education to location and inhabitation that, in India, are in turn tied to local language competency (Dyer, 2012; Sud, 2010; Tsujita 2012). Some of the strengths of this intervention lay in consulting with the community before establishing timings and language of construction, and recruiting instructors from within the local area. Doing so not only ensures that families are able to bring children to school, but could also be adapted to include migratory teachers who may be able to travel with transient populations that are not tied to locations. These possibilities should be explored in further program development.

The preliminary results of this intervention indicate that the model could be successful in non-notified slums throughout India and, potentially, globally. It is particularly telling that the results show improvements in mathematics, pre-literacy, and socioemotional skills, all of which are essential for success in the early grades. Further, they provide evidence that the intervention

creates the basic foundations that are lacking for students who later drop out because of frustration (Sud, 2010; Tsujita, 2012). The results presented here do have limitations, including a lack of an ability to point to the intervention as causal for the gains. However, it is our hope that further research can establish this claim. The results are positive enough to suggest the benefits of more study and replication.

Perhaps the most significant finding of this intervention is the far reaching implications of a lack of governmental attention to non-notified slum populations. The most obvious deleterious result of this negligence is the unavailability of preschools that could provide slum children with long-term academic and socioemotional benefits that could help them stay in school. But the nature of non-notified slums also had other effects on Akshara's ability to provide a quality intervention. For example, the dearth of space, sanitation, power, gas connections, and potable water throughout the area meant that the preschool buildings themselves also did not have these amenities that are essential for young children's health and well-being, and made it nearly impossible to cook a regular, nutritious midday meal. The lack of access to government assistance meant that families had fewer financial and material resources to contribute to their children's education, such as pencils, stationery, and uniforms. However, it is important to note that families were willing to donate precious commodities such as food, space, and time despite these limitations, indicating the high priority slum-dwellers place on education. By notifying slums, and thereby increasing services, governments would also improve the conditions of children and the ability of educators to provide high quality preschool interventions that could help break the cycle of poverty and eliminate the necessity for families to live in substandard conditions such as slums. In short, more attention to urban planning could have long term benefits that reduce the number of children living in poverty, and, in turn,

reducing the number of slums. These are considerations that we believe should be taken into account when planning further early childhood educational interventions.

References

Aboud, F. & K. Hossain. (2011). The impact of preprimary school on primary school achievement in Bangladesh. *Early Childhood Research Quarterly*. 26: 237-246.

Belsky, J., D. Vandell, M. Burchinal, K. Clarke-Stewart, K. McCarthy, M. Owen. (2007). Are there long term effects of early child care? *Child Development*. 78(2): 681-701.

Chandrasekhar, S. & A. Mukhopadhyay. (2012). Multiple dimensions of urban well-being. *Asian Population Studies*. 8(2):173-186.

Census of India. (2001). *Metadata and Brief Highlights on Slum Population*. Retrieved 27/4/2013 from http://censusindia.gov.in/Data_Products/Data_Highlights/Data_Highlights_link/metadata_highlights.pdf.

Dyer, C. (2010). Education and social (in)justice for mobile groups: re-framing rights and educational inclusion for Indian pastoralist children. *Educational Review*. 62(3):301-313.

Hart, B. & T. Risely. (1992). American parenting of language-learning children: Persisting differences in family-child interactions observed in natural home environments. *Developmental Psychology*. 28(6):1096-1105.

Levine, M. H. (2005). Take a giant step: Investing in preschool education in emerging nations. *Phi Delta Kappan*. 87(3): 196-200.

Government of India. (8 March 2002). *Condition of Urban Slums Press Note*. Retrieved 27/4/2013 from http://mospi.nic.in/nssso_pr.htm.

Rao, N. (2010). Preschool Quality and the Development of Children From Economically Disadvantaged Families in India. *Early Education & Development*. 21(2):167-185.

Saini, A. & S. Vakil. (2001). Migration in India Education and Outreach for Street Children. *Childhood Education* 78(2):91-95.

Sharma, A., R. Sharma & R. Gulati. (2008). Early childhood development policy and programming in India: Critical issues. *International Journal of Early Childhood*. 40(20): 65-83.

Subbaraman, R., J. O'Brien, T. Shitole, S. Shitole, K. Sawant, D. Bloom, A. Patil-Deshmukh. (2012). Off the map: The health and social implications of being a non-notified slum in India. *Environment and Urbanization*. 24:643 DOI: 10.1177/0956247812456356

Sud, P. (2010). Can non-formal education keep working children in school? A case study from Punjab, India. *Journal of Education and Work* 23(1):1-26.

Tsujita, Y. (2012). Factors that prevent children from gaining access to schooling: A study of Delhi slum households. *Journal of Educational Development*
<http://dx.doi.org/10.1016/j.ijedudev.2012.08.001>

United Nations. (2013). *We Can End Poverty 2013: The Millenium Development Goals*. Retrieved 27/4/2013 from <http://www.un.org/millenniumgoals/environ.shtml>.

From Airport:

The ISI campus lies about 12 kilometers East of the Netaji Subhash Chandra Bose International Airport (aka, Dumdum Airport). If you are coming from the airport, take Belghoria Express Way which originates from Airport and drive towards Dakshineswar. From Dakshineswar, take a left turn and drive towards Dunlop Flyover and then take the flyover. The flyover ends near ISI campus. You will find ISI on your right hand side. ISI Guest House, located at Bon Hooghly is 50 meters ahead of the ISI Campus along the same road. Both ISI Campus and ISI Guest House will fall on your right hand side if you come from Airport via Belghoria Express Way.