

## Preschool Education for Rural Ethiopia and Its Impact on Early Schooling: Lessons from a Project-based Initiative in North Shewa

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**Abstract:** As efforts are made to expand preschool education to rural parts of Ethiopia, one important challenge is contextual relevance of the program. The present study aimed to examine a project-based initiative at contextualizing preschool education for children in rural Ethiopia in order to sort out its impact on early schooling and to draw lessons from the contextualization approach. Mixed research design with the concurrent triangulation strategy was applied to conduct the study. Three out of the five project Districts were selected considering accessibility via road transport. Proportional sampling was used to take 11 preschool centers from the 62 preschools in the three Districts. Data was collected from tracer study of preschool completers based on school rosters and interview with the children, parents, preschool educators, grade one teachers, school principals and project officers. Analysis of the data applied both statistical tools and themes drawn from reading and re-reading of the data. The result revealed that the particular preschool initiative has adapted the program to the rural community along curriculum, pedagogical approaches, resource use, and engagement of core stakeholders. Through devising local means, it could overcome many of the challenges which are often thought to have limited preschool provision in the rural areas. Results have been documented in terms of improved preschool enrollment, scholastic achievement during early grades, better social/behavioral skills, and reduced grade one dropout rate. Based on that, it is concluded that adaptation of preschool provision based on the community's assets seems a feasible approach for the rural areas.

**Keywords:** Curriculum contextualization; Early schooling; Preschool education; Rural Ethiopia

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## 1. Introduction

The early years of children's lives, often from birth to the age of eight, are believed to be critically important in their later success, whether in education, career or income. As Isaacs (2008) writes, nurturing children from earliest stages of their development will increase their chances of achieving lifelong success. According to Yoshikawa *et al.* (2013), the early years of life is the time when children build basic skills such as cognitive skills, social skills, persistence, attention, self-regulation and executive functional skills (e.g. self-control) which play decisive roles in their later lives. Early stimulation through proper care and education is very important to develop these skills. That is why Sylva, Melhuish, Sammons, Siraj-Blatchford, and Taggart (2004) argue quality care and education programs provided during this period can do most to break the cycle of inequalities that has dominated the lives of millions of children and families. Lack of proper care and education is a road block to such promises. Neuman and Devercelli (2012: 5), citing Engle *et al.* (2007), have expressed this in the following words:

Lack of early stimulation result in delayed development. Delayed development in turn leads to poor school performance. And poor school performance means inadequate preparation for economic opportunities and eventually, the perpetuation of intergenerational poverty cycle.

Thus, quality child care and education, which includes all kinds of formally organized education and care programs provided to children prior to their admission to Grade one (Ministry of Education [MoE], 2010b), is a necessity to make success in life possible for the children; to prepare them for further learning and to overcome inequality of opportunities.

**Empirical studies on impacts of preschool experiences:** Several studies identified that preschool attendance plays critical role in the later developments of the child. For instance, Pianta, Barnett, Burchinal and Thornburg (2009) stated that enrollment in preschool has been associated with less grade repetition, higher rates of high school graduation, and improved social behavior. Similarly, Strickland and Riley-Ayers (2006) asserted that early literacy to be achieved through preschool education is linked to academic achievement, reduced grade retention, higher graduation rates and enhanced productivity in adult life. That is also why participation in preschool education has become the norm (Barnett and Ackerman, 2006), and several countries, including Ethiopia, have stipulated policies on expansion of preschool education.

Studies also reported that there are several factors that impact the amount and duration that participation in preschool programs has on success both in schooling and later life. For instance, the quality of the program (Barnett, 1995; Yoshikawa *et al.*, 2013; Smith, 2014), the context in which the program takes place (Yoshikawa *et al.*, 2013), and the socio-economic background of the children (Barnett, 2008; Cascio and Schanzenbach, 2013) are among the factors that impact upon the extent of preschool outcomes. Yoshikawa *et al.* (2013), after analyzing about 84 studies conducted in the US, concluded that quality preschool education is a profitable investment. For them, the most important aspects of quality in preschool education are stimulating and supportive interactions between teachers and children and effective use of curricula. These researchers particularly noted a significant gain in early reading and mathematics skills, and underscored that such gains should be continually reinforced through proper schooling to bring about long-lasting impact. Cascio and Schanzenbach (2013) examined the impacts of the President Obama's 'Preschool for All' initiative using multiple sources of data and found out that for lower-income families the programs have increased the amount of time mothers and children spend together on activities such as reading and children's test performance as late as eighth grade. Barnett (1995) appreciates that findings on long-term benefits in children's cognitive development, socialization, and school success are not conclusive. The researcher reviewed 36 studies of both model demonstration projects and large-scale public programs that took place in the US and found out that early childhood programs can produce large short-term benefits for children on intelligence quotient (IQ) and sizable long-term effects on school achievement, grade retention, placement in special education, and social adjustment. Barnett (1995, 2008) cautioned that not all programs produce these benefits, perhaps because of differences in quality and funding across

programs. Goldman and Sianesi (2005) conducted follow up study on a cohort of children and found out that preschool attendance has modest impact on cognitive, social-emotional and wage gain at the age of 33.

**School readiness as an immediate impact of preschool attendance:** According to Mead (2017), there are five dimensions of school readiness, namely (1) language and literacy development, (2) cognition and general knowledge (including early mathematics and early scientific development), (3) approaches toward learning, (4) physical well-being and motor development, and (5) social and emotional development. While these five domains bring about differential success in schooling outcomes, they are highly affected by preschool experiences including preschool education and care. The writer (Mead, 2017) particularly asserted that if children are prepared well in each of these areas, they are more likely to be successful in early school performance, and that in turn has visible impact upon later school success. For Sanchez (2017), instruction built on social and emotional skills, rich play, toys, games, art, music and movement complements explicit instruction focused on things like learning to count and matching letters to sounds and words which are essential preschool experiences that help ensure children's readiness for school. One major hurdle in connection to this, according to Sanchez (2017), is the disconnection between preschool and elementary education. This writer particularly identified the presence of redundancy with first-grade teachers repeating a lot of what pre-K and kindergarten teachers do. This is against the need to building on the skills that kids bring with them.

**Preschool in the national agenda on education:** Despite its importance in the later development and life of the child as reviewed above, early childhood care and education (ECCE) is not prioritized both by governments and donors in many countries (Munoz, 2012). Such state of government negligence is partly attributable to adult-centric and human capital view; a view explainable also by the influence of the international financial institutions which are not sure of the relative economic return on investment in ECCE. As a result, the private sectors dominate the ECCE sub-sector; a situation which disadvantage children whose parents/guardians cannot afford to pay and the poor majority in rural areas. This situation is contrary to the right to quality preschool education as well as the idea of free basic education which many governments, including Ethiopia, uphold in their policy rhetoric.

Preschool education<sup>1</sup> is the least developed of all the sub-sectors in the Ethiopian educational system. For instance, the 2013/14 Federal Ministry of Education (MoE) report indicated that the kindergarten proper contributed only to about 6.6% of the Gross Enrollment of the preschool education program. Observing the situation of preschool education in Ethiopia, Lemma (2019) also concluded that preschool education has made no meaningful move ever since some form of it started in Ethiopia. The preschool programs (i.e. the kindergarten proper) are concentrated in urban centers and owned largely by private for-profit providers (Tefera and Hagos, 2016; UNICEF, 2019). This situation, as also indicated above, disadvantage the poor and children in rural areas, exacerbating the already existing educational inequity.

Recognition of preschool education as a key strategy for promoting quality education in Ethiopia is a recent phenomenon. It was in connection with the fourth Education Sector Development Program (ESDP IV, 2010/2011 - 2014/2015) that Ethiopia has started to recognize ECCE as one of the tools to boost up the quality of education (MoE, 2010a). Hence, for the first time in its history, the country drafted a national ECCE policy framework which has four pillars for its implementation: parental education, health and early childhood stimulation from pre-natal to three years; preschool and kindergartens for those aged 4-6 years; and mechanisms for non-formal school readiness such as the child-to-child program (MoE 2010b). This is an inter-sectoral policy spearheaded by the Ministry of Education (with Ministry of Health and Ministry of Women, Children and Youth Affairs as key

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<sup>1</sup> In the Ethiopian context, this refers to the kindergarten proper which is normally a two-year program for children aged four to six and the o-class initiative which is a one-year program offered to children aged 5/6 prior to entry to Grade one. The child-to-child program is also part of what is labeled as preschool education (MoE, 2010).

stakeholders). The policy particularly states that the Ministry of Health (MoH) is responsible for care and stimulation during the ages 0-3/4 years, whereas the MoE is responsible for those aged 4-6/7 years. As a means to implement this policy frame, a national curriculum guideline has been prepared and the 'O-Class' approach whereby children have one year to stay in school prior to admission to grade one has been initiated. So far, the 'O-Class' is managed in most cases by untrained facilitators hired by communities/schools and, in some cases where first-cycle primary school teachers are not that scarce, one or two teachers are assigned to handle the 'O-Classes'. Yet, the general observation, as far as preschool education in the Government system is concerned, is underdeveloped and challenged by several shortages including quality of classrooms, lack of play materials, unqualified teachers, poor leadership support, and absence of the care component; among others (Admas, 2016). Attitude of community toward this sub-sector (i.e. value attached to ECCE) is the other constraining factor. That is why, as reported above, kindergarten proper is seen separately.

A related argument is that preschool programs designed along the urban (often Western) model are likely to be unfit for rural children. One reason for this is the obvious urban-rural gap in Ethiopia. Rural children are expected to take some kind of responsibility right from preschool years: caring for siblings, keeping young animals, looking after the backyard, etc. (Kenea, Tola, Hibo, Eman, and Jilo, 2016). Availability of resources is the other reason why the urban model is unfit for rural children. It is very difficult to provide modern and commercial learning, and play materials in all rural centers - a common difficulty even for the formal schools. A related factor could be the concern for relevance of knowledge to the rural population (Shibeshi, 2005). At this point, the argument by Pence and Nesamenang (2008) is very appropriate to remember. These writers contend that failure to blend the cultural heritages into the existing service system is the major impediment in the development of early childhood education in Africa. Therefore, if preschool education is to be expanded in rural Ethiopia, there has to be some kind of adaptation/contextualization.

**Preschool education contextualization initiative - the case project:** Education for Sustainable Development (ESD), a resident charity organization, initiated a preschool education project in five Districts of North Shewa with the objective to provide a sustainable access to reasonable quality preschool education for the local children. Modica, Ajmera, and Dunning (2010) (citing Peralta, 2006) stated, in developing countries, quality of preschool education depends upon relevance, i.e. family participation, program ownership and guidance, and the use of local resources within the context of a given community. Therefore, the project particularly endeavored to create a culturally relevant preschool education for the rural districts. The project was financially supported by a donor foundation with about 30% matching fund (in kind) from the local community. The preschool centers/sections mainly admitted children of age 5 and 6 and provided preschool lessons for two years. The preschool centers used primary school sections wherever primary schools exist nearby. Separate and low cost preschool centers constructed where there is no school in a radius of two to three kilometers from a village or community centers. As soon as it commenced, the project identified the following issues as its principal agenda to realize its mission of providing culturally appropriate preschool education for the particular rural children (ESD, 2012a):

- Win community members' support for the initiative
- Overcome challenges of shortage of material resources
- Avail preschool program which takes care of the very attributes the children bring with them to the center, and
- Get preschool educators with the limited financial capacity from the same localities.

Therefore, as extracted from the project master document (ESD, 2012b) and the evaluation of the first phase (ESD, 2016) the following actions were planned and implemented:

- i. Establishment of a pedagogical resource center wherein learning and play materials were prepared from the locally available resources

- ii. Community sensitization, awareness raising and participation. As part of the community participation, the preschool centers were managed by community-elected committees, called Project Steering Committee.
- iii. Crafting localized curriculum materials based on the national preschool education curriculum framework. Local educators, elders, and resource persons from local civil sectors took part in the process. In this process indigenous resources such as stories, riddles, songs, music, dances, play materials, cultural values and practices embedded in the community were carefully considered.
- iv. Preschool educators/'teachers' were mostly recruited from among unemployed secondary school dropouts of the same locality. They were then provided induction training for two to three weeks and were supported by trained project facilitators as they carry on their work. The whole effort in this process was to empower the educators, who are also familiar adults for the children, so that they can pedagogically innovate using the opportunity that can be garnered from the local context and thereby facilitate better learning.
- v. The methodological approaches were shaped in such a way that they are real like one wherein the children learnt through play and construction works using the locally prepared materials. Teachers were trained on how to facilitate the 'learn through play' approaches which the project adopted.
- vi. The timing of the preschool program, including the school day and the school year, was often determined by the committee in consultation with the parents. Therefore, the children could still carry out their home duties. For instance, during critical sowing or harvesting seasons the children are freed because they support their parents by taking care of their siblings as well as looking after young animals.
- vii. Project facilitators conducted planned and continued monitoring of the project implementation. There were regular review and planning sessions during which both the committee members and the preschool educators were helped to learn from reflecting on their own actions.
- viii. To overcome the problem of lack of a literate parental member at home, the project followed the lineage system whereby children who do not have a literate member in the household were made to identify a literate member from among the extended family members. The identified family member was oriented on his/her role to support the child's learning. It was these informed members who often come to the preschool centers to discuss with preschool educators about the children's' learning progresses. However, when the centers feel that the immediate guardians (e.g. biological parents are needed) they are also invited to visit the centers.

By the time the data used for the present study was collected, the project had already been implemented for two rounds with each round taking three years. The data used here was collected towards the end of the second round i.e. end of the sixth year. Hence, the first batch children were already in Grade 4 in local primary schools at the time of the data collection.

The present study examines this project-based preschool initiative with the aim to: (1) appraise the contribution of the particular contextualized preschool project initiative towards improvement of enrollment situation of the rural children at the preschools, (2) examine the impacts of the preschool initiative on children's early school outcomes including attendance, academic achievement and social-behavioral skills, and (3) document lessons to be drawn from the particular project-based initiative for large-scale contextualization of preschool education to rural Ethiopia.

## **2. Research Methods**

### **2.1. Design and Approach**

The study followed the mixed research design wherein both quantitative and qualitative methods are used. Specifically, the concurrent triangulation strategy, whereby qualitative and quantitative data were collected simultaneously was applied. This study strategy allows integration of the results of the two methods during the interpretation phase (Creswell, 2003). Accordingly, the major qualitative and quantitative data used for the study were generated simultaneously during the fieldwork that took

place in the five project Districts in North Shewa. Both qualitative and quantitative data were equally important sources of evidence in pursuing the purposes of the study.

**2.2. Sources of Data:** The principal sources of data for the study were grade-level-rosters and attendance registers at schools and preschool centers/sections; preschool complete children; preschool teachers; grade one teachers; parents; and school leadership. Besides, literature on approaches and impacts of early childhood education was reviewed.

**2.3. Sampling Technique and Sample Size:** Three of the five Districts where ESD established preschool were taken considering accessibility using road transport. There are 62 preschool centers in the three districts: 28 in Basona Worana, 17 in Angolelanatera, and 17 in Siyadebirinawayu districts. Eleven preschool centers/sections were taken proportionally from the three Districts: five from Basona Worana, three from Angolelanatera and three from Siyadebirinawayu. While individual preschool centers were selected using simple random sampling procedure, care was taken to include centers that were reachable via road transport. Hence, two preschools from Siyadebirinawayu and one from Angolelanatera were replaced because they were not within reach by car. Then nine primary schools which admit children from the eleven sampled preschool centers were identified. One hundred forty (140) children who were transferred to the nine primary schools from the eleven preschools during the third year of the project were identified for follow up study. The individual pupils were identified from Grade one students' roster of the particular year. For every preschool-complete-child a match was identified. This was done by simply taking the next non-preschool attended child in the list (roster). Then, the same cohort was followed at Grades two and three. Unfortunately, the number of the identified cohort members reduced with increasing Grade level due to various reasons including dropout and some children changing their names making the trace difficult. Hence, the number of preschool attendees taken for the study was 140 at Grade one, 102 at Grade two and 81 at Grade three. The number of paired sample (non-preschool attended children) was also reduced similarly, though not proportionally (please refer to Table 3 below).

Five children, selected from among those identified for tracer study from each school, and who were available by the day the particular school visits took place, were interviewed. The parents of those children were also interviewed. One preschool teacher was interviewed at each centre. Similarly, Grade One teachers whose names identified from the rosters/attendance registers were interviewed as long as they were in the schools during the school visit. In general, interviews were conducted with 9 groups of children (preschool completers), 9 groups of parents, 11 preschool teachers, 23 Grade One teachers and 9 school principals. The focus of the interviews were mainly on situation of preschool attendance, early school attendance, social-behavioral skills of the children, and their academic performances, though any new idea is entertained as far as it is related to the objectives of the study. The interviews took from 20 to 30 minutes.

**2.4. Method of Data Analysis:** The data was analyzed using both quantitative and qualitative data analysis techniques. Percentage and mean scores were used to summarize the data; and independent sample t-test was used to compare whether there were any statistically significant differences between the academic achievements of the preschool attendees and those who did not attend to preschool on the selected school subjects. The notes taken from the interviews were read and re-read to come up with themes that are relevant to the objectives of the study. Even if the objectives are the principal references; the process was open enough to entertain any emerging issues from the interview results. The qualitative data presentation in this report was done selectively whereby only representative opinions were quoted, and the rest were used to develop understanding of the situation in general.

### 3. Results and Discussion

#### 3.1. Improving Enrolment Through Community Engagement and Support

As noted earlier, the government-initiated 'O-class' approach does not seem to have been well received by rural communities in Ethiopia for various reasons including lack of awareness (Tefera and Zewdie, 2019), the opportunity cost of schooling (Kenea *et al.*, 2016), and poor quality of the experiences that children acquire at the centers (Admas, 2016). The baseline study by ESD (2012) also revealed almost the same result. As a result, the initial responses of the community towards the project was one of decline or just indifference. Regarding this, a parent said:

When the project first came to us we just did not give it our ears because we are tired of many new things that just do not work for us. However, as we closely observe we could realize that it is in fact what we need. So, the second year we went into a fight with the project because we wanted it to admit more and more children (A parent [male], 56 Years old, from preschool center 01).

This widely held opinion at the project locality has been ascertained from the attendance register of the project whereby the number of preschool attendees continuously increased yearly. Here is the number of children who attended preschool Level One during the project years.

Table 1. Number of children who were admitted to Level One in the 11 sample preschool centers during the six years of the project

Batch	Number of children
One	305
Two	461
Three	624
Four	689
Five	741
Six	689

Note: Data was extracted from preschool records

While there can be other contributory factors to this situation, the community's improved awareness and the parents' willingness to bear all the challenges of sending the children to preschool centers can be taken as important explanatory variables in such increment. The project office also claims this to be the case.

The other critical factor in the success of preschool program is the interaction and supportive relation between the preschool centers and parents. This has always been problem area in Ethiopian education. Several studies indicate that Ethiopian parents tend to leave educating the children to teachers once the children are at school (Beresu, 2006). The reality of parental engagement can take several forms including parenting, communicating, volunteering, supporting learning at home, decision making, and collaborating with the community (Epstein, 1997). Even though parental engagement is very essential across the levels of schooling, it is more so with younger children. One limiting factor often identified to be reason for low parental engagement in preschool education, even in urban centers, is low parental awareness of the possible contribution they can make (Zhang, 2006; Li, 2009). In a study of the status of early childhood education in Ethiopia, Admas (2016) also concluded that one of the most important challenges in the provision of preschool education in Ethiopia is weak partnership between families and communities. The project took this as one important factor and intervened taking the very attributes of the local community. It can be presumed that communality characterizes the Ethiopian rural community. Therefore, any relative is considered as a contributor to the upbringing of the children in the extended family (Zewdie and Tefera, 2015; Kenea *et al.*, 2016). Taking that as an advantage, the project asked the children to identify any literate member in the (extended) family to whom they wish to relate the most whenever members of the immediate family (father, mother, brother and sister) are not literate enough or are not there to support the children's learning at home. Then the identified members of the extended family were invited to

attend orientation on how to support the children and how to relate with the preschool centers. According to the preschool educators, this has immensely improved the co-working relation of the parents and the preschool centers. Here are some representative responses:

About 33% of the parents were recruited and trained from the extended family members because the children's immediate family were not able to support or do not exist. Lucky enough, these parents were found to be very active. They were happy to visit the preschool centers and always supportive of the children's learning (Project officer B from area office, 35 Years old).

Hence, the project, instead of blaming the fate of the children, could look into what is possible to overcome the challenge. Here is a related response from another participant:

If we carefully look at what we have, it is really possible to claim that we have everything that our children need to get quality education. Looking at our schools, however, we can say that many parents were hopeless and left everything to the teachers because they can't read and write. However, thanks to this project, we are now witnessing a situation where relatives are there for the children. It is kind of getting back what is traditionally said, 'the children belonged to the community.' I say, this is a great accomplishment! (A parent; 48 Years old, who is literate and member of the Project Steering Committee, from preschool center F).

The presence of literate family is essential not only for home-based support but also for its serving a role model of literacy practices for the children. Regarding this, Li (2009) writes literate environment is one of the critical factors in children's quality of learning and development. The words of one of the preschool educators clearly indicate the same:

It is painful to fail to get someone who would help the children do what they are assigned to do at home. By devising such an extended family engagement model, we could solve this difficulty. Not only that, some of the biological parents reported that having the extended family members onboard helped the children to see their learning as a serious business. No doubt, this has worked well for us (Preschool Educator 1, 24 years old).

Almost similar view was expressed from another preschool educator who said "The extended family engagement model is an opportunity we missed previously" (Preschool Educator 6, 22 years old).

These representative responses generally indicate that the project could fill gaps created due to lack of literate environment at home by relating its approach to the very characteristics of the particular community.

From the data presented here it seems possible to draw a lesson that the approach the project followed to adapt the preschool intervention to the community could improve preschool enrolment and create good condition for the children's learning. More particularly initiating active community engagement (e.g. through involving community representative), creating awareness, relating the curriculum and the learning activities to the context of the learners and devising strategies that would help parental engagement and support (e.g. 'lineage-based' parental engagement) were found to be very attractive strategies. Hence, there is a need to consider these for larger scale implementation in rural areas of Ethiopia.

### **3.2. Early School Attendance**

One important concern regarding the impact of preschool experience on early schooling is the status of attendance of the preschool completers against those who did not get the opportunity. Early school attendance is used to refer to the amount of sustained attachment to school during the early Grades, i.e. first to fourth grade in formal schools. One way of assessing the situation of early school attendance is examining dropout cases. Dropout is taken here as a situation whereby a child discontinues his/her studies before the end of a school year. In other words, it excludes those who fail to show up for the next academic year since that is difficult to trace because of mobility of parents/guardians or other reasons. Reports indicate that dropout at Grade one is one of the most critical challenges in Ethiopia (MoE, 2014 and Oromia Education Bureau [OEB], 2014). In the present study, this situation has been examined by comparing Grade one dropout rate for preschool attendees against that of the whole batch.



Table 2. Average grade one dropout rate in the sample schools

Batch	Reported grade one dropout rate - whole school (%)	Grade one dropout rate for preschool attendees alone (%)
First (2013/14)	11.2	1.02
Second (2014/15)	9.8	0.87
Third (2015/16)	9.91	1.29
Fourth (2016/17)	7.9	0.72

Note: The data presented here was compiled from the schools' attendance registers and homeroom teachers' reports. Note also that the fifth batch (2017/18) data was not complete and that for the sixth batch (2018/19) was not ready at the time of the data collection.

As can be seen from the data presented in Table 2, the average Grade one dropout rate of the preschool completers is by far less than that of the whole school of the particular batch in the sample schools. This is consistent with what is normally expected because early stimulation increases motivation for school work (Apps *et al.*, 2012). These writers, based on their study, asserted that preschool attendance generally increases the number of friends and children's satisfaction with school work; which in turn improves continued attachment to school. This is about the role of preschool attendance in school readiness. School readiness is referred to as the development or achievement of certain basic skills that help the child function both in academic and social expectations (Hagos and Tefera, 2015). It involves five dimensions: physical health and well-being, social competence, emotional maturity, language and cognitive development, communication skills and general knowledge (Janus and Offord, 2007; Mead, 2017). Therefore, preparation in these areas or dimensions of development could possibly reinforce more preparation for the schooling of preschool completers than those who never been to preschool.

### 3.3. Academic Achievement of the Children

Many studies indicate that preschool attendance improves scholastic achievements during primary school years and beyond and, predicts career success and improved income (Barnett, 1995; Sylva *et al.*, 2004; Isaacs, 2008; Barnett and Ackerman, 2006). By academic achievement it is to refer to the academic performance result in the selected 'school subjects' or learning areas during the early Grades, i.e. Grades 1-3. It is assessed using the recorded test results obtained from school rosters. The result is based on classroom teacher-made tests and normally scored out of 100 on each of the selected 'school subjects.' For UNICEF (2019) preschool completers are more than twice as likely to be on track in early literacy and numeracy skills than those who miss out from preschool services. Where the amount of such outcomes may vary with several other variables, including the quality (input and process) of the program, parent/guardian-related factors and community-related factors, it is expected that preschool experience can contribute to improved learning achievement at least during the early primary school years. The present study takes this modest expectation in trying to examine the association of the preschool experiences of the children with their academic achievement during early school years.

Table 3. Comparison of academic achievements of children with and without preschool based on Grade-level average scores on all school subjects

Average score of:	Preschool:	N	Mean	SD	t-value
Grade 1	Attended	140	63.32	13.26	2.708*
	Not attended	109	58.55	14.29	
Grade 2	Attended	102	66.94	8.40	.944
	Not attended	78	65.54	11.54	
Grade 3	Attended	81	70.12	8.91	.261
	Not attended	63	69.71	9.78	

\*P&lt;0.01

The mean scores for children who attended the preschool program are generally greater than those for the ones who did not attend the preschool, which is in the direction expected. However, the difference between the two groups is statistically significant only for Grade One. That means children who attended preschool demonstrated better academic achievement than none attendees only at Grade. One may say the observed mean difference for the other grades might have happened due to some error factors not identified here. Whether this same result holds true for Amharic and Mathematics separately was also examined and reported below.

It is known that stimulation on early acquisition of numeracy and literacy are among the principal purposes of preschool education. According to the preschool curriculum framework, Amharic, which is the mother tongue for most of the children in the project locality, and Mathematics are subject areas that are directly concerned with literacy and numeracy, respectively. Consequently, any impact on academic achievements of the children in preschool education could be attributed to Amharic language and Mathematics scores. Attempt has been made to sort out this and the result is as presented below.

Table 4. Comparison of children's academic achievements on selected subject areas

Subject	Preschool:	N	Mean	SD	t-value
Amharic language Grade 1	Attended	140	66.43	13.89	3.71*
	Not attended	109	59.16	16.62	
Amharic language Grade 2	Attended	102	69.90	12.80	0.92
	Not attended	78	68.00	14.89	
Amharic language Grade 3	Attended	81	72.35	12.35	1.30
	Not attended	63	69.56	12.95	
Numbers Grade 1	Attended	140	65.08	14.38	2.95*
	Not attended	109	59.26	16.75	
Numbers Grade 2	Attended	102	67.07	11.19	.74
	Not attended	78	65.67	14.31	
Numbers Grade 3	Attended	82	67.93	10.58	-0.32
	Not attended	67	68.55	13.3	

P&lt;0.01

The result presented here is consistent with that presented in Table 3. The Grade One Amharic and Mathematics mean scores of those who attended preschool education is superior across all the three grades compared to the mean scores of those who did not get the opportunity. However, the mean difference is statistically significant only for Grade One of both subjects ( $t=3.71$ ,  $P<0.05$  for Amharic and  $t=2.95$ ,  $P<0.05$  for Numbers/Mathematics). While studies indicate that the difference between children who attended preschool and those who did not normally declines over time (see study by

Isaacs, 2008 and Yoshikawa *et al.*, 2013), that will not occur right after the first Grade. Hence, there can be additional explanation for the children in the project area. One important explanation could be absence of continued reinforcement on what the children bring to Grade One. This can be learned from the following quotes taken from two teachers who taught the children while they were in Grade One:

The preschool completers are very important because they help us in supporting other children learn to identify letters and numbers. If you have preschool completers you do not have problem in achieving the objective of enabling every child identify the letters and numbers before the semester ends (Teacher 4, from Cheki primary school, with 11 years of teaching experience).

When you teach in Grade One, the major challenges are having children follow directions and helping them identify letters and numbers. If you have a few children who are from preschool, life will be easier for you. They act on your behalf to help the children who struggle with identification of letters and numbers. That is why every teacher in Grade One wishes to have some children who have attended preschool. As a result, the children from preschool are distributed as fairly as possible across the sections of first Grade and are not put together in a single section (Teacher 7, from Andinet primary school, with 14 years of teaching experience).

The opinions of these teachers indicate that the children from the preschools come to Grade One better prepared for school. Where that is true, the opinions also seem to imply that there is a tendency to focus on helping those children who do not have prerequisite preparation for Grade one. No particular means is there to help the preschool completers advance at a pace already achieved in preschool. For instance, while they make use of the children in supporting other 'unprepared' children, teachers can also apply differentiated instruction that helps every child to advance at his/her own pace and level of achievement. The opinions of the school children who took part in the interviews sound high in this regard:

Grade one is simply a repetition of what we learnt in preschool (Preschool attendee 5 from Cheki Primary School, eight years old). We learnt counting letters and numbers both at preschool and at Grade one (Preschool attendee 2, from Genet Primary school, nine years old). There are some children who come to school without attending Kindergarten. In Grade One we have to repeat everything we finished in the Kindergarten with them (Preschool attendee 5, from Andinet Primary School, eight years old).

If one looks through Grade One Amharic and Mathematics students' texts, they seem to assume a child who has got no preschool opportunity. I believe this is a valid assumption as it considers and accounts for the majority of the rural children in Ethiopia. However, those who got the opportunity for preschool and thus were able to complete some of the skills contained in Grade one should not be hindered from advancing at their own pace. The apparently pragmatic arrangements schools make (e.g. fairly distributing the preschool completers across the sections) obviously puts the preschool completers at disadvantage. This situation seems to explain the fast decline in the difference between the academic achievements of preschool completers and those who have had no preschool opportunity after the first grade. This should not, however, implicate that preschool education is mainly meant to teach subjects. If they learn anything of the subjects, it is part of the process of socialization and an aspect of the attempt to introduce the children to the basic skills of learning (including numeracy and literacy) and thereby help them become ready for school.

### **3.4. Social Behavioral Outcomes**

The other area where preschool education is expected to impact upon is the social/behavioral outcome of the children. Social-behavioral skills refer to skills of classroom social relations and commitments of the children to their own learning as assessed by the teachers. The indicators used consisted of social relationship with peers and teachers; attention and following directions and school routines; motivation for school/classroom activities; self-reliance in learning (while positively relating to others); and care for personal hygiene. Teachers were asked to rate (on a three-point likert-type scales) the social/behavioral situation of the project-preschool completers who were admitted to their classes at Grade one based on a list of criteria. The result is organized as in Table 5.

Table 5. Relative Social/behavioral development of the preschool completers: teachers' rating

Criteria	Along the particular criteria:			
	Those not attended preschool are better	No observable difference	Those who attended preschool are better	Total
1. Social relationship with peers and teachers	0	6	17	23
2. Attention and following directions and school routines	0	7	16	23
3. Motivation for school/classroom activities	1	7	15	23
4. Self-reliance in learning (while positively relating to others)	0	6	17	23
5. Care for personal hygiene	0	7	16	23
Total	1 (0.8%7)	33 (28.69%)	81 (70.43%)	115 (100%)

The result presented in Table 5 clearly shows that majority of the teachers (70%) reported that the project-preschool completers are superior in their social/behavioral outcomes as far as the identified indicators are concerned. Similar opinions were given by the teachers during the interviews. For instance, Teacher 4 (from Cheki Primary School, with 11 years of teaching experience) stated, "I think one of the major achievements of the preschool program is socializing the children to the school norms. As a result, the children have no problem regarding discipline or social relationships." Similarly, Teacher 7 (from Andinet Primary School, 14 years of teaching experience) asserted, "The children come to school well trained on what is expected of them when they join Grade one. As a result, they are good models for those children who did not get the opportunity for preschool." Both teachers appreciated the value added by preschool experiences in the social/behavioral skills acquisition of the children. A stronger opinion was heard from another respondent:

Transition from home to school classroom is very important in a child's life. Many of the children dropout or hate schools because of failure to adjust to the situation. So, preschool preparation of this kind is very helpful. I could see the benefit in my class (Teacher 5, from Genet Primary School, 16 years of teaching experience).

All these opinions are consistent with the quantitative result presented above. The opinion of a parent also complements the same:

I have five children and only the last one got the opportunity for preschool. When I took him to school after completion of the preschool, I found out that he is the happiest of all. He never wanted to be absent from school (a parent, from Cheki area, 42 years old).

These results are in fact consistent with studies by UNESCO and UNICEF (2012) which have identified that children who have participated in quality ECCE exhibit tremendous gains in their overall social, cognitive and intellectual development. Similarly, Samuelsson, Sheridan and Williams (2006) in their work recognized the social-behavioral outcomes during early schooling and beyond as essential outcomes of the preschool curricular experiences.

## 4. Conclusions and Implications

### 4.1. Conclusions

Ethiopian rural parents need children for their adult-centric purposes: 'children are often productive right from the day they start walking on their feet.' Hence, sending them to preschool would be an expensive decision given the opportunity cost. Parents' lack of adequate awareness of the value of early life stimulation on later development is also another explanation. The project's activity could overcome such challenges. Community members were empowered to think for themselves about the

value of early education for their children. They became supportive to the extent that they demanded the preschool centers to admit more and more children starting from the second year of the project's cycle. At school level, where there are huge number of children coming to Grade One without any formal preparation for schooling, the preschool completers served as 'setters of the standards' which could serve as reference for the children. As reported above, the children helped their underprepared peers to identify letters and numbers as quickly as possible even though that happened to be a disadvantage for the preschool completers since they were not allowed to advance at their own pace.

In general, the study documented that the particular preschool initiative has adapted preschool program to a rural community in Ethiopia along curriculum, pedagogical approaches, resource use, and engagement of core stakeholders. The results have been documented in terms of improved academic achievement during early Grades (particularly at Grade One), better social/behavioral skills, and reduced Grade One dropout. Community-level impact in terms of receptivity to preschool initiatives has also been documented. Based on that, it is possible to conclude that adaptation of preschool provision based on community's assets seems a feasible alternative for the rural area. A lesson that could be drawn from the particular project initiative is that devising alternative preschool program delivery in the interest of addressing local needs (i.e. relevance) as well as overcoming shortages of inputs works well for rural Ethiopia. On the other hand, the project failed to consider one important traditional initiative of the community in the project area: the priest school approach. The priests are the most important religious leaders in the project area. They could be important gate points in the effort to educate the community.

#### **4.2. Implications**

The present study implies that in the efforts to expand preschool education and reach out to the great majority of Ethiopian preschool age children in rural Ethiopia, it is very essential to look inward with flexible eyes: the local resources and the tradition have much to offer as long as there is genuine commitment on the part of the government and its stakeholders. Such efforts need to pay attention to attractiveness and acceptability of the program in terms of local relevance, what it does for the children and 'cost' to the rural population.

Preschool education should be promoted as a topic of discussion among the wider public and within the policy circles to overcome the challenges of the opportunity cost of sending children to preschool.

While preschool is a stage of development by its own right, it is also a phase for preparation for early schooling i.e. primary education. Therefore, care should be taken so that preschool and primary school are interfaced (as continuum) and a continuous reinforcement of learning happens.

Future research on preschool education should consider mechanisms to revitalize traditional preschool education centers such as church and mosque. The future research should also consider the role of elders and other family members in the more communal population of rural Ethiopia.

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