ESD

'Preschool education' for rural children: lessons from the ESD[1] - North Shewa projects

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[This research has been presented at the Conference on Early Childhood Care and Education organized at Debreberhan (GETEVA Hotel) by ESD, November 24-26, 2015

November 2015

Addis Ababa, Ethiopia

[1] Education for Sustainable Development

Acknowledgements

Several people and institutions contributed to the success of the study. I cannot list all of them here. Thus, I would like to document my appreciation to all of them. Few of them however deserve my special gratitude:

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Executive Summary

Education for Sustainable Development (ESD) run Early Child Care and Education (ECCE) projects [with major focus on preschool[2] education] in 5 Woredas[3] of North Shewa Zone, Amhara Regional State, and 2 Woredas of Sidama Zone, SNNP Region starting 2009 and 2013, respectively. The major purpose of the study was to look into the ESD pre-school initiatives in North Shewa, as one aspect of ECCE, and sort out lessons that can be learned there from in the effort to scale up the initiative. It also aims at dissemination of those lessons to broader local and national stakeholders.

Quantitative and qualitative data was collected from primary and secondary sources. The principal primary sources of data for the study were grade-level-rosters and attendance registers at schools and preschool centers; preschool complete children; preschool teachers; 'Grade 1' teachers; parents; school leadership and project officers. Three ESD model pre-schools, five school-based pre-schools and three community-based centers were purposely selected considering accessibility via road transport. From the ESD-model centers those children who transferred to school in the 2012/13 Academic Year were mainly targeted for the tracer study. From the school-based ones those who transferred to Grade 1 in the 2013/14 AY were selected for the follow up study. Accordingly, 78 children from the center-based program and 62 from the school-based program were identified and followed up. Since no child transferred to primary schools from the community-based preschool centers [they started lately], it was not possible to include children whose origin were from such centers. . A matched-control design has been used to make comparisons of children's scholastic performance based on pre-school attendance and non-attendance. Key findings of the study included the following:

- **Preschool attendance and children's school performances**: children who attended preschool generally performed better during the first three primary grades than those who had not. However, the result was statistically significant only for the first grade. Similarly, children who attended preschool were found to

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[2] Refers to education program/opportunity immediately before school (mostly for those aged 4-6).
[3] Woreda is almost similar to the District

be better in terms of their social/behavioral achievements. Comparing children who were from school-based and those who are from ESD model preschools, the former were found to be superior in their social/behavioral outcomes. Besides, preschool completers are less likely to dropout when compared to those who have never attended preschool.

- **Preschool completers' scholastic achievements vis-à-vis identified 'attribute variables':** Two variables happen to be positively associated with the children's scholastic achievements at Grade 1, namely, type of preschool attended [in favor of ESD pre-school centers] and guardian's commitment to the children's schooling. At Grade 2 only one variable happened to be positively associated with scholastic achievements of the children, i.e. type of preschool attended - where those from ESD preschool centers were found to be superior. .

- **Which preschool approach?** The present study indicated that it is very difficult to go for one approach over the other. Community-based centers brought preschool close to community; school-based centers are better in terms of social/behavioral development; and the ESD preschool centers are better in terms of students scholastic achievement. Hence, it is up to the program leadership to consider the local situation; and act to benefit from the strengths of all when necessary.

- **Overall emerging impacts of the ECCE/preschool project:** ESD could experiment the workability of three different preschool approaches in an adult-centric community that considers children as additional source of labor. It seems that this situation is changing with flooding of the preschools with children. In other words, the project could convince the local community to consider sending its four year old children to preschool centers rather than to fields [e.g. to keep cattle or support family on the farm].

Finally, the implications of these and other findings of the study have been identified to guide further action both by ESD and all other concerned stakeholders. .

1. Introduction

The early years in children's lives is critically important in their later successes [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 time when the children build those basic skills such as cognitive skills, social skills, persistence, attention, self-regulation and executive functional skills (e.g. self-control) which play decisive role in their later lives. Early stimulation through proper care and education, is very important to develop these skills. For Engle *et al*, (2007) in Neuman and Devercelli, (2012);

> 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.

The period from birth to the age of eight [often referred to as early childhood] is the period during which quality care and education programs can do most to 'break the cycle of inequalities that has dominated the lives of millions of children and families' (Sylva *et al* (2004) and Munoz (2012)). Lack of proper care and education is a road block to such promises. Then, following Isaacs (2008), it can be noted that quality child care and education is an essential factor to make success in life possible for the children; to prepare the children for learning and   to overcome inequality (and inequity, for that matter) of opportunities. The most important aspects of quality in preschool education are stimulating and supportive interactions between teachers and the children and effective use of the curriculum (Yoshikawa, *et al, 2013*). Thus, as a means to prepare children for school; a response to the unique developmental needs of the children and, above all, as a right for the children; there is no alternative to providing quality ECCE.

Irrespective of this, ECCE is not prioritized both by governments and donors (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 [who are not sure about 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 those 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 uphold in their policy rhetoric.

What does the situation of ECCE looks like in Ethiopia? Until very recently, the coverage of preschool education in Ethiopia was less than 5% of the appropriate age group (MoE, 2011). Even the 2013/14 MoE report indicated that the kindergarten contributed to only about 6.6% of the Gross Enrollment. The existing preschool programs are concentrated in urban centers and are owned by private companies. This situation, as also indicated above in respect of the experiences of other countries, disadvantage the poor [who cannot afford to pay] and children in rural areas. Until very recently, Ethiopia seemed to have relegated the responsibility of preschool education to the parents/guardians and the respective communities; with support only in terms of preparation of curriculum guidelines, limited teacher training and supervision. This situation exacerbated the educational inequity that existed in the country for long - those who afford and who have access could send their children to preschools while the majority could not. This is a paradoxical state-of-affairs for Ethiopia, a country that claims to address equity in and through education [that clearly stated equity as focus area in its Education and Training Policy].

With reference to the fourth Education Sector Development Strategy (ESDP IV), Ethiopia has recently recognized ECCE as a tool to boost the quality of education. 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 3 years age; preschool and kindergartens for those aged 4-6 years; and mechanisms for non-formal school readiness such as the child-to-child program (MoE 2010). This is an inter-sectoral policy superheated by the Ministry of Education [with Ministry of Health and Ministry of Women, Children and

Youth Affairs as key stakeholders; among others]. The policy particularly states that where the Ministry of Health (MoH) is responsible for care and stimulation during the ages 0-3/4 years; the MoE will be responsible for those aged 4-6/7 years. As a means to implement this policy frame, a national curriculum guideline has been prepared; the school-based alternative programs [e.g. 'o-class' approach whereby children have one year to stay in school prior to admission to Grade 1] has been initiated. So far the 'o-class' is managed in most cases by Para-professional teachers hired by community [schools] and, in a few cases where first-cycle primary school teachers are not that scarce, one or two teachers are assigned to handle the 'o-classes'. There are also reports on implementation of the 'child-to-child' program in some areas/regions. As a result of such initiatives, the government reports, the preschool coverage could abruptly reach 43.3% (MoE, 2013/14). Yet, the quality issue is open to question. A more recent development is that the Colleges of Teacher Education have started training of preschool teachers. The general observation as far as preschool education in the Government system is concerned is that it is underdeveloped and challenged by several shortages: quality of the learning rooms, lack of play materials, unqualified teachers, poor leadership support and absence of the care component; among others. These and many other reasons made the Ethiopian government to look for the support of project-based initiatives by civil societies, faith-based organizations and local communities. One such initiative is that implemented by Education for Sustainable Development, an Ethiopian Resident Charity organization, in two Regional States in Ethiopia: Amhara Regional State and Southern Nations Nationalities and Peoples.

1.1. Statement of the problem

The very purpose of development-based non-governmental organization is to complement the efforts of the country's government by trying out innovative practices on small scale basis within the policy framework, gain knowledge and practices ,and disseminate for scaling up. Having the situation of ECCE described above as its backdrop for initiating the ECCE projects [with the support of its donor organization], ESD run ECCE projects [with major focus on preschool[4] education] in 5 Woredas[5] of

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[4] Refers to education program/opportunity immediately before school (mostly for those aged 4-6).

North Shewa Zone, Amhara Regional State, and 2 Woredas of Sidama Zone, SNNP Region starting 2009 and 2013, respectively. Particularly in North Shewa it piloted out three forms of preschool [which evolved at various phases of the projects]. These are the ESD-model preschool centres, the school-based approach and the community-based approach. The ESD-model preschools are fairly self-sufficient centers geographically close to primary schools and yet in a separate compound. The school-based preschool classes are mostly one-room sections reserved from the primary school wherein children aged 4-6 [grouped separately in the same section] learn. They are structurally connected to the primary schools and managed by the same. The community-based preschool centre is a centre away from school and in community neighborhood, established with the intention to bring schools to communities. They are meant to solve the home-school distance using low cost building built by local communities. Studying which of these preschool education approaches is most effective and appropriate within the context of the project area could be relevant.

Besides, since the project is mainly conducted in rural areas and for children who do not have the opportunity to preschool education, it is very relevant to examine how the fact that the children got the opportunity associates with their scholastic achievements, their social/behavioral outcomes and attachment to school. Hence, this study was intended to look into the experiences of the project with a grand purpose of documenting lessons on the possibility of preschool education for rural children in Ethiopia.

1.2. Objectives of the study
This study has been designed with the following three major objectives in mind:

1) To document lessons to be learned from the ESD preschool approach on early childhood care and education for rural children.
2) To sort out the possible impacts of the preschool education on the children's later scholastic achievement, social/behavioral outcomes and school retention.
3) To document the impact the ECCE project has on the local community in terms of addressing children's early education.

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[5] Woreda is almost similar to the District

1.3. Basic research questions

Based on the above objectives, the study intended to find answers for the following major research questions:

1) Is there any statistically significant difference between children who attended the ESD preschool and those who have never been to any preschool in terms of scholastic achievements, social/behavioral outcomes and school retention[6]?

2) Is there statistically significant difference in the children's achievements due to gender, birth order of the children, presence of literate member in the family, presence of elder brothers/sisters who attend school, age at entry to preschool, relation with guardian, guardian's income, academic support at home, and guardian's commitment to the child's education?

3) Do the differences in achievement, if any, vary across the Grade levels?

4) Given the situation of the project locality; which preschool approach is most relevant?

5) What are the likely effects of the preschool project at the local community level in terms of addressing educational equity?

1.4. Scope of the study

Considering time and financial restraints, the study is conducted on two cohorts of children who attended the ESD preschool program - they are the ones transferred to Grade one in 2012/13 and in 2013/14 Ethiopian Academic Years. The cohorts are normally expected to be in Grade 4 and Grade 3 respectively during the current academic year(2015/16). The impacts of the project were seen in terms of academic achievement and social/behavioral outcomes. The sites for the study were primary schools and preschool centers/sections taken from North Shewa Projects (Amhara Regional State).

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[6] Used here to refer to reduction in the likelihood of dropping out or interrupting school before the end of the school year.

1.5. Limitations

There are several problems that constrained particularly the data collection process. Lack of well-organized data at some of the schools and preschool centers for the tracer/follow up study was a critical challenge. Hence, the team had to trace the children based on attendance registers and classroom search. Some of the teachers who taught the children have already left the Districts due to transfer. Hence, the team had to depend on the support of the teachers who were available. Some parents could not come for school meeting due to busy sawing and harvest seasons. Hence, we had to do home visits, even though that was again time taking and sometimes inaccessible. Irrespective of such limitations, e very effort has been made to come up with valid data for the study.

2. Methods of the study

The study followed the mixed methods design wherein both quantitative and qualitative methods are used. Particularly, the concurrent triangulation strategy, whereby collection of the qualitative and quantitative data happen in one phase of the research study was followed. This study 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 generated at a time during the fieldwork that took place in October 2015. The interpretation of data integrated both and used in a way that sorts out the convergence and/or divergence of the findings as a way to strengthen [or refute] the knowledge claims of the study.

2.1. Data sources

The principal primary 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 1' teachers; parents; school leadership and project officers. Besides, literature on approaches and impacts of early childhood care and education was extensively reviewed.

2.2. Sampling

To reach the sources of data the first step was to sample the preschool centers/schools. Accordingly, Cheki, Chacha, and Wushawishign from among the ESD-model preschool centers; Deneba, Siya Debir, Dibut, Andinet and Genet from among the school-based preschool providers and Muti Keransa, Alemgena and Chalelekit from among the community-based providers were taken mainly considering accessibility by vehicle. Hence, about 18% of the 62 ECCE providers [centers and schools] in the project were included. Since the community-based centers started lately [that no child transferred to school during the period sampled], they are not considered for the tracer study. Hence, the tracer study focused on the two major providers [i.e., the ESD-model preschool centers and the school-based ones]. From the ESD-model centers those children who transferred to school in the 2012/13 AY were mainly targeted for the tracer study. From the school-based ones those who transferred to Grade 1 in the 2013/14 AY were selected for the follow up study, though at Dibut children those transferred to Grade 1 in the 2012/13 AY were also considered. Accordingly, 78 children from the center-based program and 62 from the school-based program were identified and followed up.

Five randomly selected children, from among those identified for tracer study from each school, and who were available by the day the particular school visited took place, were interviewed. The parents of those children were also interviewed. One preschool teacher was interviewed at each centre. Similarly, Grade 1 teachers whose names identified from the roasters/attendance registers were interviewed as long as they are in the schools. Therefore, 45 children [preschool completers], 40 parents, 11 preschool teachers, 23 Grade 1 teachers and 11 school principals were interviewed. The interviews with each participant were much focused and took from 10 [e.g. when teachers rate each child's behavior situation] to 30 minutes [e.g. discussion with school principals]. Apart from these stakeholders, project officers and Woreda education officers were interviewed to get a general understanding of the project.

As a kind of 'matched control group,' students who did not attend any preschool education were taken from the same grade-level-rosters after making sure that they

actually had no preschool experience. The sampling of these children was at random: according to the roster list every child coming next to the children being followed up was taken as long as he/she did not attend any organized preschool program. Hence, in the analysis the scholastic achievements of these children were compared against those of the children who attended the ESD-preschool program.

2.3. Data collection process

Prior to setting the data collection tool, a week of field visit was made to the project sites to collect qualitative data that hint what points to consider for the main study and what not to include. The data that was generated from such exercise was examined in terms of the literature review based on which a data collection format was put together. The format is open in such a way that it is completed based on study of the documents [grade-level-rosters and attendance registers] as well as the interviews. Besides, indicative interview guides were prepared to facilitate discussion with all the interviewees. Center observation guide was also prepared to guide the assessment of the community-based ECCE centers.

The data collection tools were reviewed by experts in the field of early childhood care and education prior to putting them into use. Project officers have also provided their comments on the tools. After finalizing the tools, a team of researchers [with two project officers and the principal researcher] have conducted the data collection. Yet, the accuracy of the data finally rests with the principal investigator who was there throughout the fieldwork session to actively participate himself and to monitor the quality of the data.

2.4. Methods of data analysis

The quantitative data obtained from the field was entered into appropriate data sheet of the SPSS out of which descriptive statistics has been computed. Analysis of variance using independent sample t-test and One-way ANOVA [as appropriate] was also run to infer whether there is any statistically significant differences among groups along the identified variables. The field notes taken during the interviews and center observations

were read and re-read to come up with themes that match with the issues contained in the basic research questions. The themes so described were used to make possible explanation of the phenomena. This in turn helped to create understanding of the observed variations from the quantitative data.

2.5. Ethical considerations

Attempt has been made to keep the basic ethical principles of research with/on human subjects, namely, informed consent, confidentiality and objectivity; among others. The purpose of the data collection was explained to each participant prior to requesting his/her consent to participate in the study as source of data. The reporting of result was done carefully to make sure that no human source of data was identifiable from the opinions expressed. Objectivity in interpretation and reporting as well as using non-biased language was the other means used to appeal to the need for ethical conduct of the study. Hence, it is possible to claim that every possible care has been taken to make sure that appropriate ethical principles have been attended to in carrying out the study**.**

3. Results and discussion

This section reports on the discussions of the results of the data analysis and interpretation vis-à-vis the knowledge claims of the study. It is organized under five sub-sections, namely, the ESD-preschool approach, impacts of preschool attendance, influence of various attribute variables on preschool completers scholastic achievements, relevance and effectiveness of the ESD's three preschool approaches, school-level as well as community-level impacts of the project.

3.1. The Project: the preschool component

Education for Sustainable Development (ESD) initiated early childhood care and education in rural areas of North Shewa Zone (Amhara Regional State) and in Sdama Zone (SNNPR) in 2009 and 2013 [respectively] with the financial support from FSI (major), ICDI, UBS (earlier) and PCF (only 2012/13). The first round of preschool

education, which followed the ESD-Model preschools, was those started at Cheki, Chacha, Wushawushign and Debele.

During the next phase of the project the school-based model started in 2011 schools, which later added the community-based preschool centers. The community-based preschool centers started with the aim to bring preschool service close to the community. The preschool centers/sections mainly admitted children of age 5 and 6, as reported by their guardians. Yet, there are times when younger [e.g. the 4 years old] children come to the preschool centers. The projects used community sensitization and the support of Kebele[7] structures to initiate community members to bring the children to the preschool centers. At first this was an important challenge (ref. ESD field monitoring reports) because the community wants the children for various activities (e.g. keeping cows, sheep, etc; taking care of younger siblings; attending to the house when family members are not at home; etc.). Observation at the centers clearly indicates that this situation has been improved to the extent that children flood the centers' beyond their carrying capacities.

[7] Administrative structure below the District [or the Woreda]

The facilitators or preschool educators were recruited from the locality, received brief induction before starting teaching and have gotten in-service training from time to time. Normally, there are two teachers for each centre [main teacher and a teacher assistant]. The remuneration for the teachers [which is generally less than that for regular teachers] has been covered from the project.

The preschool centers/sections follow the curriculum guide prepared by Amhara Regional State. Contained in the daily activities of the curriculum are mother tongue (reading and writing); English (alphabet and word formation), numbers, environmental science (environmental awareness, health/sanitation, social skills, etc.), aesthetics (art and music), and child plays (in-door as well as outdoor). In the rural areas the preschool day is only in the morning (from 8 am to about 12:30 pm) and the school year is similar to the regular school (i.e. follows the academic calendar of the Woreda). Normally, children attend the preschool program for 2 years and transfer to Grade 1 when they complete their 6th year of age.

The ESD-model centers can be said well-furnished. Apart from the self-sufficient physical facilities, they have in-door and outdoor play materials and locally produced as well as purchased learning materials in fairly adequate number. The school-based preschool sections have basic learning and play materials supplied by the project [including those purchased and the ones locally made/adapted] and largely use the physical facilities of the schools. The community-based preschools operate mostly in two-room *chika* blocks[8] constructed by the community. They have basic learning and play materials.

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[8] Buildings made up of wood and mud.

3.2. Preschool attendance and children's school performances

Studies indicate that preschool attendance improves scholastic achievements, social/behavioral outcomes, school retention during primary school and beyond; career success and improved income (Barnett, 1995; Sylva, 2004; Isaacs, 2008; Barnett and Ackerman, 2006). 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, community-related factors, etc.; it can generally be expected that preschool experience can at least contribute to improved learning outcomes during the early primary school years. The present study takes this minimalist expectation in trying to examine the association of the preschool experiences of the children with their scholastic achievement, social/behavioral outcomes and school retention (reduced dropout).

Table 1: Comparison of scholastic achievements of children with and without preschool

Average score of:	Preschool attendance:	N	Mean	SD	t-value
Grade 1	Yes	139	63.32	13.26	2.708*
	No	109	58.55	14.29	
Grade 2	Yes	102	66.94	8.40	.944
	No	78	65.54	11.54	
Grade 3	Yes	81	70.12	8.91	.261
	No	63	69.71	9.78	

 *$P<0.01$

The mean scores of children who attended the preschool program prior to Grade one is greater than that of those 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 1 [t=2.71, P<0.05]. Does this difference hold true for literacy and numeracy?

It is known that stimulation on early acquisition of numeracy and literacy are among the principal purposes of preschool education. According to the curriculum guide, Amharic (i.e. the mother tongue of the children) and Mathematics (locally referred to as *Hisab*)

are subject areas that are directly concerned with numeracy and literacy, respectively. Hence, if preschool education has brought any difference in scholastic achievements of the children, it has to be first and foremost bring differences in their Mother Tongue (Amharic in this case) and Mathematics scores. Attempt has been made to sort out this. The result is as presented in Table 2.

Table 2: Comparison of children's scholastic achievements on selected subject areas

Subject	Preschool attendance	N	Mean	SD	t-value
Amharic Grade 1	Yes	140	66.43	13.89	3.71*
	No	109	59.16	16.62	
Amharic Grade 2	Yes	102	69.90	12.80	0.92
	No	78	68.00	14.89	
Amharic Grade 3	Yes	81	72.35	12.35	1.30
	No	63	69.56	12.95	
Math Grade 1	Yes	140	65.08	14.38	2.95*
	No	109	59.26	16.75	
Math Grade 2	Yes	102	67.07	11.19	.74
	No	78	65.67	14.31	
Math Grade 3	Yes	82	67.93	10.58	-0.32
	No	67	68.55	13.3	

P<0.01

The result presented here is consistent with that presented in Table 1: the Grade 1 Amharic and Mathematics results of those who attended preschool education is superior to the scores of those who did not get the opportunity. However, the mean difference is statistically significant only for Grade 1 of both subjects [t=3.71, P<0.05 for Amharic and t=2.95, P<0.05 for Mathematics]. While the fact that the difference between children who attended preschool and those who did not normally decline 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 1. This can be learned from the following quotes directly taken from two teachers who taught the children while they were in Grade 1:

The preschool completers are very important because of two reasons: they master Amharic after staying at the centre for two years. Hence communicating with such children is not difficult. The other and more important thing is they help us in helping 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. (A Teacher from Cheki primary school).

When you teach in Grade 1 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 easy for you. They act on your behave to help the children who struggle with identification of letters and numbers. That is why every teacher in Grade 1 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 and are not put together in a single section. (A teacher from Andinet primary school)

The opinions of these teachers indicate that the children from the preschools come to Grade 1 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 1. 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 as a help 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 children sound high in this regard:

Grade 1 is simply a repetition of what we learnt in preschool. (A kid from Cheki Primary School)

We learnt counting letters and numbers both at preschool and at Grade 1 (A kid from Genet Primary school)

There are some children who come to school without attending Kindergarten. In Grade 1 we have to repeat everything we finished in the Kindergarten with them. (A kid from Andinet Primary School)

If one looks through the Grade 1 Amharic and Mathematics [or *Hisab*] student textbooks, they seem to assume a kid who has got no preschool opportunity. I believe this is an appropriate assumption as long as it is based on the reality of 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 1 should not be hindered from proceeding. The apparently pragmatic arrangements schools make (e.g. the ones described by teachers in the above quotes) obviously puts the preschool completers at disadvantage. This situation seems to explain the decline in the difference between the achievements of preschool completers and those who have had no preschool opportunity in the upper grades.

The other area where preschool education is expected to impact upon is the social/behavioral outcome. Teachers were asked to rate the social/behavioral situation of the ESD-preschool completers who gotten admitted to their class at Grade 1 based on the following criteria:

- *Social relationship with peers & teachers*
- *Attention and following directions & school routines*
- *Motivation for school/classroom activities*
- *Self-regulation (identify & control one's emotions)*
- *Self-reliance in learning [while positively relating to others]*

A three-point Likert-type scale was used and the result has been organized as follows:

Table 3: Social/behavioral development of the preschool completers against other children: teachers' rating

N	Minimum score	Maximum score	Mean	SD	t-value
81	9	15	12.1975	1.59	12.42

$P < 0.05$

Tested using the single sample t-test [with 10 point as median point] the observed mean was statistically significant ($t = 12.42$, $P < 0.01$). That means, the children who attended the preschool program were better than those who had no preschool opportunity as far as the social/behavioral development is concerned.

Comparison of the children's social/behavioral achievements has been made to see which type of preschool program arrangements best prepare children socially/behaviorally for school.

Table 4: Social/behavioral achievement of the preschool completers.

Type of preschool	N	Mean	SD	Test value
School-based	17	12.88	1.73	T = 2.03*
ESD-Model	64	12.01	1.52	

$P < 0.05$

As shown in Table 4, the observed mean difference was statistically significant [t=2.03, P<0.05]. Hence, children who attended the school-based preschool program seemed better than those who attended the model program; probably because of the very close interaction within the schools in the case of the former.

Does attending preschool have any relation with dropout? Dropout is taken here as a situation whereby a student 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 any other reason.

Table 7: dropout rate: whole batch vs. preschool completers

Dropout rate of:		Minimum	Maximum	Average
the whole batch*	Grade 1	2	10	4
	Grade 2	3	7	3.5
	Grade 3	1	6	2.5
preschool completers	Grade 1	0	2	1.5
	Grade 2	0	2	1
	Grade 3	0	1	1

Refers to the batch from which the preschool completers taken from all the schools.

As can be seen from the data presented in Table 7, average dropout rate of the preschool completers is less than that of the whole batch across all the three Grades. This is consistent with what is normally expected because early stimulation increases motivation for school work (see the work of Apps, Mendolia and Walker, 2012).

3.3. Preschool completers' achievements vis-à-vis identified 'attribute variables'

As repeatedly noted above, attending preschool has association to future positive outcomes both as learners in schools and as adults [in life and career]. However, several studies indicated that the kind and amount of such future outcome depend on several factors. Here are a few such studies. According to Isaacs (2008); Apps, Mendolia and Walker (2012); Cascio and Schanzenbach (2013); while all children benefit from preschool programs, the benefit is higher for children from lower income families. For Isaacs, (2008) again family factors such as income, motivation level, level of education and maternal employment do have some impact on how much children benefit from preschool programs. de Coulon; Meschi; and Vignolso (2008) considers about *intergenerational transfer of skills* when depicting the role of parental education on children's cognitive skills/development. For this writer, children from unschooled parents are disadvantaged compared to those from educated parents.

Hence, the fact that children are accessed to preschool services is not enough for children's success in their education [and later career life]. In other words, there are multiple variables which in one way or the other impact up on the extent to which preschool education brings about differences in later scholastic achievements of children. Therefore, the following variables have been identified to examine if they have any association with children's scholastic achievements. These are gender, birth order of the children, presence of literate member in the family, presence of elder brothers/sisters who attend school, age at entry to preschool, relation with guardian,

guardian's income[9], academic support at home, and guardian's commitment to the child's education. Tables 5 and 6 present results of the data analysis.

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[9] *Even though the project generally defines the community members as needy, I tried to make some differentiation by focusing on how the family sees itself: moderate economic standing [self-sufficient], low economic standing [can fulfill the most basic needs, including education of children], and low [struggle even to fulfill the basic needs].*

Table 5: Comparison of Grade 1 performance across some 'attribute-variables'

Attributes	label	N	Mean	SD	Test value
Gender	Male	78	61.67	12.95	t = 1.67
	Female	66	65.45	13.45	
Birth order	First	41	66.48	12.94	F = 1.84
	Middle	75	62.39	14.11	
	Last	22	60.57	9.82	
Type of preschool	School-based	60	59.78	15.19	t = 2.81*
	ESD-Model	78	66.03	10.89	
Literate member in the family	Yes	97	63.20	13.92	t = 1.54
	No	41	63.58	11.71	
Brothers/sisters already in school	Yes	57	59.72	13.11	t = 2.73*
	No	81	65.84	12.85	
Age of entry to preschool	4th year	10	58.95	7.28	F = 0.72
	5th year	114	63.44	13.27	
	6th year	14	65.43	16.28	
Current guardian	Biological parent	103	63.38	13.11	F = 0.85
	Relatives	27	61.53	14.19	
	Employers or others	8	68.50	12.10	
Guardian's income	Moderate	32	66.69	13.71	F = 1.62
	Low	95	62.61	12.56	
	Very low	11	59.60	16.95	
Academic support at home	Yes	36	62.88	12.56	F = 0.08
	Yes, but ...	69	63.77	14.77	
	No	33	62.84	10.77	
Parental /guardian commitment	High	30	67.25	8.06	F = 2.93*
	Moderate	31	69.47	10.23	
	Low	18	63.16	7.11	

P<0.05

Three variables happen to be associated with the children's scholastic achievements at Grade 1, namely, type of preschool attended [school-based or model program]; presence of sister/brother already in school; and guardian's commitment to the children's schooling. The mean difference of the children's who attended the ESD-model preschools and those who attended the school-based program was found to be statistically significant [t = 2.81, P<0.05]. Hence, children who attended the ESD-model preschool program scored better than those who attended the school-based program at

Grade 1 level. This is in the expected direction since model schools are well furnished and better in their overall situation.

It is expected that children whose elder brother/sister is already in school will be motivated to work hard at school and to employ every opportunity the school provides. The present finding does not seem to support this since the mean scores of children who reported to have brothers/sisters already in school is lower than that of those who reported that they don't have one in school. Surprising is that the difference between the two groups was found to be statistically significant [t= 2.73, p<0.05]. One possible explanation could be that the project intervened to motivate parents who do not have the experience to send their children to school. This might initiate parents to go beyond sending to school and start to provide academic support for their children. The other possible explanation could be that when the culture of support is not there, presence of educated family member alone may not bring change.

Guardian's commitment was also found to have statistically significant association with children's performances at Grade 1 [F=2.93, P<0.05]. A Post Hoc comparison using Tukey HSD indicated that the difference lies between 'moderate commitment' and 'low commitment'. In other words, statistically speaking, guardians with 'moderate' and 'high' commitment have almost the same motivating effect on children's scholastic outcomes.

Similarly, attempt has been made to see whether those variables have any statistically significant association with the children's scholastic achievement at Grade 2 level. As presented in Table 6, it was only one variable, i.e. type of preschool, that was found to have some association.

Table 6: Comparison of Grade 2 performance across some 'attribute-variables'

Attributes	label	N	Mean	SD	Test values
Type of preschool	School-based	35	62.59	8.15	t = 4.04*
	ESD-Model	67	69.21	7.64	

P<0.05

Here too, children who attended the ESD-model preschool seemed to have scored higher than those who attended the school-based preschools and the mean difference between the two groups was found to be statistically significant [t=4.04, P<0.05].

The ESD-model preschool program is found to be successful in both Grades 1 and 2. This is consistent with a study by Sylva *et al*, (2004) which indicated that programs that integrate education and care as well as those that take place in better settings were found to be better in terms of positive impact on children's latter achievements. The fact that the ESD-model preschool programs integrate some kind of care with education and that it is better in terms of the physical condition makes it at an advantageous position.

As far as Grade 3 is concerned, **none** of the variables identified above (i.e., gender, birth order of the children, presence of literate member in the family, presence of elder brothers/sisters who attend school, age at entry to preschool, relation with guardian, guardian's income, academic support at home, and guardian's commitment to the child's education) seemed to have any statistically significant association with the children's scholastic achievements.

3.4. Comparison of the three approaches

As presented above (sub-section 3.3.) the ESD-model preschool completers are superior in their Grade 1 school average achievements over those who completed from the school-based program. On the other hand, children who completed from the school-based program are superior over those who completed from the ESD-model preschool centers regarding the social/behavioral outcomes. It is explained that the superiority of the former may be attributed to the resource situation whereas the superiority of the school-based program regarding the social/behavioral development of the children seemed to be attributable to the location within school setting. Then one may ask "What about the community-based preschool centers?"

According to the project workers, the community-based preschool programs were established to overcome the problem of home-center distance. Some villages are far from the schools/centers where the preschool programs organized. This necessitated the project to work with local communities to establish the centers. In that sense the centers could overcome the physical limitations on younger children. They also involve more active involvement of the local community and that sustainability is not big a problem. However, because they are far from the schools and also they are low cost; they luck some of the advantages the other two approaches enjoyed. It may also be unfair to compare the two in terms of scholastic as well as social/behavioral outcomes. One can say, they are relevant in their own ways.

3.5. School - and Community-level impacts of the project

In many developing countries, write Hong et al (2015), regional gap of early childhood education, especially the gap between the urban and rural areas, was still enlarging. Ethiopia is not an exception to this. There is no doubt that equity is an important concern in Ethiopian education - particularly the gap between rural and urban as well as center and periphery needs to be carefully addressed. The government is taking cost-effective actions (such as the 'o-class') which may open up opportunity for preschool to a good proportion of Ethiopian children. Yet, the gap along quality is expected to continue even widening. Within a country, the economic, political, and cultural, etc. differences complicate the issue of equity in education. Hence, it is time to think about and try out what approach can work in certain context and scale it up. The ESD approach provided alternative avenue for this.

Ethiopian rural parents need children for their adult-centric purposes: 'children are often productive right from the day they start walking up right.' Hence, sending them to preschool would be an expensive decision. The ESD activity could overcome such traditional thinking. Community members were empowered to think for themselves about the value of early education for their children. They became supportive to the extent that the preschool centers are over flooded by children. It is out of such change that the community-based preschool centers could be set up by the communities. When

communities become supportive to preschool education, it in a way ensures a continuum of ECCE services.

The preschool centers also came at a time when the local government was about to start the 'o-class' approach. Hence, the centers were good references to start with. The Woreda Education Officers recognize that the preschool centers are also centers for experience sharing in the effort to build local capacity in this area.

At school level, where there are huge number of children coming to Grade 1 without any formal preparation for schooling the preschool completers served as 'standard setters' 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. In peripheral Woredas where the children come without any functional skills in using Amharic, the preschool children who have already exposed to the language; help their peers for quick acquisition of the language.

4. Conclusions and implications

From the present study it has been noted that the preschool completers are generally better in terms of their scholastic achievements than their peers who have got no opportunity for preschool education, particularly at Grade 1 level. They are also better in terms of social/behavioral development as well as attachment to school [in terms of reduced risk of discontinuing school during an academic year]. Preschool completers from the ESD-model preschool centers are superior to those who are from the school-based in terms of their scholastic achievement, whereas those who completed their preschool from the school-based preschool are superior in terms of social/behavioral development. Parental/guardian's commitment to the children's schooling was found to be a very significant correlate of the achievements of the children.

We [Ethiopians] had preschool education (including the church, the mosque, the elders and other family members, etc. as providers). The power of those educators has almost

now gone, thanks to the pressures from the twenty-first century 'phenomena.' The Ethiopian Government's preschool education policy is tolerant to diversity of approaches [e.g. consider the four pillars **parental education**, health and early childhood stimulation from pre-natal to 3 years; **preschool and kindergartens** for those aged 4-6 years; and mechanisms for **non-formal school readiness** such as the child-to-child program]. Hence, we cannot just depend on the single prescription: the 'o-class' with those under resources preschool sections within the impoverished primary schools. It is time to diversify the providers. To tryout multiple approaches, review their successes and scale up the most promising ones. ESD has tried three of the possibilities which have demonstrated some successes and pitfalls. I believe there can be tens of alternative approaches. It is up to the region [the Government] to critically consider the results of this study and move forward with what works in a specific context. The 21st century never allows us to be tied up with only one form of an approach that may not work in all settings.

Here are therefore some implications [regarding scaling up of the results achieved by the ESD preschool projects]:

1) Resource in the form of in-door and outdoor play materials are very essential for success in terms of scholastically preparing children for school. Having the kind of resources ESD furnished into its model centers may not be possible for all schools/centers. However, it is possible to build local capacities to prepare adapted learning and play materials from locally available resources. The ESD Pedagogical Resource Centre can be a good example to be learnt from.

2) Community-based programs are relevant in many rural areas because of distance and topography [in some regions rivers]. They are relevant also because they are owned by the local community. They can also be taken as the modern form of our traditional centers of preschool learners [e.g. centers where *Yenetas* taught letters and numbers]. However, such centers need to be considered as satellite centers connected to the adjacent schools rather than stand alone. This will have multiple benefits, as ESD experimented. The centers get professional support as well as

resources. The educators will associate with the teachers and will take their roles seriously. They will also act with preparation for school in mind - so have clear institutional purpose.

3) No doubt that teacher qualification and mobility [burnout] at all levels of schooling is a problem and will continue to be a critical challenge for the education system. Preschool will not be an exception. The ESD approach of recruiting from the locality may be a good approach to adapt. ESD used brief initial orientation and a continued in-service program. On scaling up, the kind of frequent in-service training ESD used may not be feasible. Hence, it is good to have a package of initial training; until such time that adequate professionally trained teachers come to the preschool centers.

4) Preschool completers are obviously more qualified than the skill requirements the Grade 1 curriculum assumes. Therefore, there is a need for the Grade 1 teachers learn how to apply differentiated instruction whereby they can help different groups of children to advance at their own pace in the same room. This needs to continue even into the higher Grades. Alternatively, it is possible to have preschool completers together in a different class. Teachers benefit much if a curriculum adaptation manual or handbook prepared to help smoothen this transition from pre-school to Grade 1.

5) Ethiopia is moving to further push for child rights to education. Prior to that, there is a need to win the hearty support from parents/guardians. ESD has experimented with that and has been able to win the support of the community. For every effort to expand preschool education there has to be community sensitization and mobilization. Political support [and commitment], beyond just teachers home visits, is very essential for this.

6) Parents/guardians/family members need to provide academic support, not just sending to preschool and leaving everything to the teacher. In other words, effort has to be made to create a literate environment at home for every child. The present study indicated that guardians' commitments brought difference (+VE) in the children's academic achievements. Hence, even if the principal guardians [e.g. fathers and mothers] may not be literate, it is possible to train any literate or semi-

literate member (s) of the family with whom the child most associate on how to provide academic support.

7) Connecting with community health posts is a very essential precondition for early meaningful care and education. Then it is relevant to consider what administrative mechanisms can be in place to facilitate such close working relations. Alternatively, it is possible to provide pre-school teachers with holistic training that helps them provide reasonable care and support for the children; whenever health posts are not possible.

8) In many sub-urban areas [e,g, like Chacha] there are community members who can afford. It may be fruitful to consider encouraging private investors to tray expanding low-cost rural private preschools. If successful, this can make reasonable 'cost-sharing' even in rural areas.

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Annex I: Sampling Frame

Data source	Level I	Level II	Level III	Remark
1. Preschool teachers	Sort pre-schools by type	Select representative sample from each		
2. Centre committee members		Take committee for each of the centers selected under #1 above.		
3. School	Sort schools by type of feeder pre-schools	Select representative sample from each		
4. Children (at school)		Sample sections	Select sample by pre-school attendance	
5. Teachers			Take individual teacher	
6. Parents			Take sample for 50% of the students sampled under #3 above	
7. School Principals			Take the principal of the particular school	

Annex II: Child Profile Assessment Tool

1) Name of the child: _____

2) Gender: _____

3) Birth order (1st, 2nd, etc.): _____

4) Name of pre-school attended: _____

5) Age at entry to the pre-school: _____

6) Duration of/in pre-school education: _____

7) Years attended pre-school (Eth.C.): _____

8) Name of school (at the present): _____

9) Year transferred to school (Eth.C.): _____

10) Grade level attending (at the present): _____

11) Parent's/guardian's situation:

    a. With whom the child lives (list by kind of relationship):
_____
_____

    b. Income situation (how the family sees itself, estimated monthly income):
_____
_____

    c. If there is anyone who can read/write from among the parents/guardians (please specify):
_____
_____

    d. If there are older children already attending school (identify gender):
_____
_____

12) If there is anyone who can provide academic/learning support at home:
_____
_____

13) Scholastic achievement:

Grade level	Math/Numbers	Amharic	Average/All subjects
1			
2			
3			

14) Social/behavioral achievement: How do teachers rate the child?

Indicator	Better	No difference	Weaker
a. Social relationship with peers & teachers			
b. Attention and following directions & school routines			

c. Motivation for school/classroom activities			
d. Self-regulation (identify & control one's emotions)			
e. Self-reliance in learning [while positively relating to others]			

15) Parental commitment to the child's education (vision, aspiration, response to school, everyday acts):

Please rate ⟹	3) High	2) Medium	1) Low

Please describe responses:

_____

1. **Interview - parents**
    a. Name of the child: _____
    b. Birth order of the child
    c. Duration of pre-school the child attended
    d. If there is anyone in the family who can read & write
    e. Support to child: who supports the child at home?
    f. Aspiration/vision for their children: Why educate?
    g. Quality of service at the pre-school (play, education, rest, health care, etc.)
    h. Family income situation
2. **Interview - teachers**
    a. Academic achievement of pre-school completers: compare
    b. Any challenge: Two groups of students in the same class (pre-school/non-pre-school)
    c. Social/behavioral development of pre-school completers: compare
    d. Dropout: who dropout most (by pre-school attendance & by Grade level)
3. **Interview - committee**
    a. Establishment of pre-school center
    b. Getting children into pre-school
    c. Attendance & completion
    d. Level of parental support
    e. Quality of service at the pre-school (play, education, rest, health care, etc.)
    f. Transition to school: any challenge, any positive lesson, etc.
4. **Pre-school teachers**
    a. Teacher factors: recruitment & training, any concern?
    b. Getting children into pre-school
    c. Attendance, dropout & completion
    d. Level of parental support
    e. Quality of service at the pre-school (play, education, rest, health care, etc.)
    f. Transition to school: any challenge, any positive lesson, etc.
5. **Interview project workers**
    a. Establishment of pre-school center
    b. Project intervention: awareness raising, teacher preparation & development, etc.
    c. Getting children into pre-school
    d. Attendance & completion
    e. Level of parental support
    f. Quality of service at the pre-school (play, education, rest, health care, etc.)
    g. Transition to school: any challenge, any positive lesson, etc.
    h. Dropout: is it a challenge during and after pre-school?
6. <u>**Dropout data**</u>**:**

Name of the school: _____ _____.	Dropout	Grade 1	Grade 2	Grade 3
	Total (#)			
	Pre-school completers (#)			

Reasons for dropout:_____**.**