The Relationship Between Extracurricular Activity Involvement and Elementary Student Performance

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Abstract: This secondary research study uses secondary data to evaluate families' social economic statuses (SES) and parents' investment in extracurricular activities (ECA) and of their children's abilities in reading, science and technology skills. Based on previous trends and possibilities, this study discussed whether children of the same SES tend to maintain similar levels of learning outcomes, while ECA investment can be a significant factor that influences differences among children of different SES levels. Data from the Early Childhood Longitudinal Study Program named Kindergarten Class of 2010-11 (ECLS-K: 2011), which was sponsored by the National Center for Education Statistics (NCES) within the Institute of Education Sciences (IES) of the U.S. Department of Education, were the main source used in this study. ECLS-K: 2011 is the third in a series of longitudinal studies of young children. Including the assessment of child development, early learning, and school progress, approximately 18,170 kindergartners from about 1,310 schools, their parents, their teachers and before- and after-school care providers participated in the program. This study focuses on information from the data collection conducted in the spring of 2016, when the majority of the ECLS-K: 2011 students were in fifth grade and their 2010-2011 kindergarten school year. Results indicated that even at the same level of SES, investment of ECA can be different and, thus, causing the differences in the study outcome. The early childhood ECA investment was study performance included reading, math and science score in the fifth grade. However, gender differences were not significant shown in this program. Further analyses indicated that the gap between early childhood ECA investments would be narrowed by investing in ECA, even at the same SES. It is concluded that ethnicity, household members and parents' highest level of education make differences in how parents invest in the ECA in early childhood education.

Keywords: Extracurricular Activities; Childhood Education; School; Longitudinal Study

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1 Introduction

With more and more people get interested in extra curriculum activity (ECA) and its influence on study, the investment of ECA is also becoming a topic that some researchers and educators care about. In early childhood education, parents play an essential role in education and school. Growing up, with the emphasis on education, nowadays, learning will not only exist in the four corners of the classroom, but it also can happen in before- and after-school activities, family education, and community. Children enter kindergarten showing wide achievement gaps by family socioeconomic status (SES) [1]. Several studies suggest that achievement gaps grow during the summer months when children are away from school [2, 3, 4]. Different SES have different ECA investments; how-

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ever, even with the same SES, families tried to use them before- and after-school ECA to help their children to maintain at the same level as others.

In this paper, the longitudinal study focuses more on the same SES with different ECA investment for a specified period. The Longitudinal Study of 2010-11 (ECLS- K: 2011) will have statics for early childhood ECA investment. SES situation and the importance of family impact on education, which SES is controlled. Compared with the previous study, it will continue to analyze the significant ECA investment differences of the 2010-11 cohort at the same level of SES that directly affected the learning outcome of the children. This study will also take a further step into the causation of the learning outcome and its relationship with ECA investment. Also, other elements such as gender, ethnicity, the household members, and the parents' highest level of education may be a considerable influence on the learning outcome. However, this study also tries to answer the question: Does the same SES have same investment in ECA? Does ECA help students with their learning directly? Does the investment in ECA directly lead to differences in learning for children from the same SES?

As for the previous paper and studies focused more on the differences and preferences of the investment of ECA caused by the different level of SES families, it is not difficult to understand that with more available salary and sources of income, the more likely a family will be willing to support the investment in children education including the investment of ECA. From the previous study, a meta-analysis of the literature related to the secondary ECA [5], there were associations between the ECA and the study outcome for the secondary school students, but the casual effects stayed unclear. Notwithstanding, this study will specifically focus more on the investment of ECA from those families who come from the same SES. This study will have the following research question: Even students may come from the same level of SES, will it be possible that with the differences in investing and involvement in extracurricular activities, the disparity may occur? This study also makes further hypothesis: Those children who will keep in the same states because of early childhood investment from a higher level of SES families. At the same time, the lower SES causes less or no investment for their future generation, the gap between different SES families becomes more prominent, the harder, the lower SES students to catch up with the higher SES children.

In terms of ECA, generally it refers to the activities that are not related to core curriculum content, aim at promoting the interests among children, especially during the before- and after-class time. With a wide variety of activities, there are also different types ECA, academic related, arts related or even housework. From the parent report in Spring 2012, questions focus on the outside school hours that children use in science, computers, math lab, or language class other than English. Or use the time in art programs, children's choirs, dancing, or theater performances. Housework related such as the frequency they help with chores. Or even the time they spend in library visiting. SES, socioeconomic status, reflects the household income. Including salaries, capital gains or any investment revenue in the form of money. Learning outcome, or to be more specifically, the cognitive performance or the scores on the report for every semester. People use reading, math and science scores to conclude the cognitive outcome, or in other words, the learning outcome of the children.

With limited information and prediction, this study presumes that with small differences among SES, the same level will not have big gap in the investment of ECA, so the outcome differences will not be as many as different SES. However, the gaps among different SES stay distinctive, with the investment, the gaps might be diminished. Even within the same SES, with the investment of ECA, especially lasting for a long time, the differences in learning outcome will be clearer.

2 Literature Review

As mentioned, ECA is now becoming more and more popular, and it has changed into an essential complement of school life for nearly every stage of students, instead of the previous unrelated activities. From the previous research and study, the participation rates are known to be very high in the United States (in 1995 approximately 60% of high school sophomores and 70% of seniors participated in at least one activity) [6], there is minimal documentation on the extent of participation elsewhere. Also, the data on the participation rate in early childhood is rare. There is also little evidence to illustrate the investment of ECA in early childhood can make a difference for the primary or secondary, even higher education.

Investigations into the impact of ECA on students date back as early as the 1930s with studies documenting the range of activities being offered in schools and questioning whether participation in particular high school activi-

ties could be related to higher achievement at college [7, 8] Notwithstanding, despite a raft of studies on ECA participation being undertaken over nearly eight decades (mainly in the United States). Those previous studies focus more on the ECA and learning outcomes independently, so the casual effect stays unknown or hard to understand. The vague relationship between ECA and learning outcomes is still a big concern in the area of early childhood education for all educators.

ECA also appears to be more related to the core curriculum in school. Extracurricular activities related to activities that are "external to the core curriculum" [8]. Bartkus, Nemelka, Nemelka, and Gardner [9] defined ECA as "academic or non-academic activities that are conducted under the auspices of the school but occur outside of normal classroom time and are not part of the curriculum" [9]. The ECA experience has become an essential component of students' school life, as many students today participate in ECA [10, 11]. It is also worth to be mentioned that the investment in ECA is not only family-oriented but also school-motivated. With more and more families emphasize, many schools invested significant resources on ECA [10, 12] and are expected to provide a wide range of ECA to offer a balanced education [12, 13]. The impact of ECA participation on students' development has been widely examined in the general education literature [5, 10-12, 14-16]. With the society the growing focus on the before- and after-school program, we should pay attention to the family investment on those programs, also the outcoming. However, the longitudinal program has not brought out a clear result of the ECA impact on the elementary students' performance with the same SES.

To know the differences in investment in ECA caused by different SES, a previous study, similar to the longitudinal program, which was carried out by the same organization but focused on a different generation. The Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), which provides nationally representative information regarding the approximately 3.9 million children enrolled in kindergarten during the 1998-99 school year (NCES 2004-037). With these representative statistics, interviews showed the summer ECA participation of families. Except for before- and after-class activity, ECA can also include community activities during the holiday. All the activities involved in reading, math, and science or other programs that are interest-orientated are included. By calculating the frequency of going to the library, we can conclude a noticeable difference and find (Tables 1, 2 and 3). From a previous study (NCES 2004-037), it has been shown that, even in the same SES, the use of the library may be different; also, according to the study, the higher the SES, the higher rate of participating in a library. In other words, the difference between different SES is apparent; however, within one SES might not be much. The overall participation rate is more similar to the Middle SES circumstances, while the higher SES has more convenient resources, so they were more likely to go to the library, while the lower SES, had little opportunity, so their participation rate drops. Similarly, we can see the SES distribution is 2:6:2, which is similar to the distribution of the SES level in ECLS-K: 2011. It won't be difficult to have the assumption that: the higher the SES, the families would be more likely to improve the investment budget when it comes to the education of the children. Not only the money gives the possibility of providing more investment, but also the area families live in, the neighborhood environment, and the supporting facilities of the communities. Based on this previous finding, this paper will continue to look at the relationship in-depth according to the same SES with different ECA investment. As for the previous study only showed a small part of ECA, the relationship between the performance and the ECA might not be persuasive findings.

So, in this paper, more ECA investment, including all types of activities, will be included in order to bring out an overall report compared with previous findings. As for early childhood, education becomes more and more competitive; families and schools are now taking the time before entering an elementary school more seriously.

There is a shred of considerable evidence among those children who were taking good care during early childhood education. Child development experts indicate it is during these years that children develop linguistic, cognitive, social, emotional, and regulatory skills that predict their later functioning in many domains [17, 18]. It is a matter of fact that from birth to five-year-old, the first five years are commonly viewed as a critical period for developing the foundations for thinking, behaving, and emotional self-control for the future learning. With this trend and the development, this paper will also have suggestions on early childhood education and how to improve the learning outcome for the higher level. Moreover, the social hierarchy is also the variable that may affect education and closely relates to social development. This study also wants to know the possibility of eliminating the gaps and differences in social classes by focusing and paying

more attention to early childhood education. Because the tendency of future development is eliminating the gaps in young and also can affect the future, the more concentration of childhood education will be brought in the field of education for children's future development.

Table 1 Percent of children with library in the neighborhood by SES level

SES level	% of children
Low SES	64.3
Middle SES	80.5
High SES	90.7
Overall	79.1

Table 2 Percent of children visiting library by neighborhood and by SES type

SES level	Neighborhood with Library	Neighborhood with No Library	Overall
Low SES	55.6	30.8	46.4
Middle SES	69.7	52.8	66.2
High SES	81.1	71.8	80.2
Overall	69.9	46.7	66.8

Table 3 Percent of children attended library's story time by neighborhood and by SES type

	Neighborhood with Library	Neighborhood with No Library	Overall
Low SES	26.8	28.2	27.3
Middle SES	26.5	20.1	25.6
High SES	20.5	14.9	20.0
Overall	25.0	21.3	24.5

In a previous study carried out in 1987, Holland and Andre, they had a review of literature relating to the relation of the participation of ECA and adolescent development with the purpose of proving future research with logical, methodological approaches and possible directions [12]. By that time, the research area of ECA was not comprehensive even though this review brought an overall conclusion. Still, ECA and the learning outcomes were lack of evidence to prove the relationship between. Also, from the study carried out by Taylor and Ciogioji [19], the research of ECA was still under the circumstance of shortage with key terms defined and without a scientific theoretical framework. This time, the study was a reminder for the researchers and also a sign for the ECA research area. Given the information, the need for having new research and new study becomes essential and vital. However, the framework and research idea continue to influence the nowadays study, including this study.

Data from the Early Childhood Longitudinal Study Program named Kindergarten Class of 2010-11 (ECLS-K: 2011) [20-22], which was sponsored by the National Center for Education Statistics (NCES) within the Institute of Education Sciences (IES) of the U.S. Department of Education, were the main source used in this study. The program used multiple research methods, including questionnaires, interviews, and data collecting. The design of the ECLS-K: 2011 and its survey instruments was guided by a conceptual framework of children's development and learning that emphasizes the interaction among the various environments in which children live and learn and the resources within those environments to which children have access. A comprehensive picture of children's environments and experiences is created by combining information from children themselves, their parents, their school administrators, their teachers, and their kindergarten before- and after-school care providers. Those statistics help this study not only to learn and understand the preference of different SES but also to find the relationship between the investment of ECA and the learning outcome in the same SES more directly and visible. Moreover, it is vital to consider the effect of ECA in affecting the SES and learning outcomes. From the previous tendency and possibility, is there any chance for the same SES children to maintain a similar level of learning outcome, and for those in different levels of SES, can ECA be the trigger and cause to make a difference?

3 Methodology

The research design for this study is using the original data and information from the Longitudinal Study Program as the priority resource, using a descriptive method to analyze and trying to find the relationship between the same SES families of the investment of ECA and the learning outcomes of the children more concise. It is understandable that given this large amount of numbers from children, the program is not only a useful database but also the provider of the program background. By giving a comprehensive knowledge of children, parents, and schools, the whole picture of the program stays more practical. Information such as sex, the child's race, poverty status, parent's highest level of education, family type, and primary home language of the children who were in kindergarten for the first time in the 2010-11 school year was collected. In this long-term program, the mean reading, math, and science scale scores are also provided. With the information compared, this study can make a better comparison between the same SES of the ECA investment. Thus, the learning outcomes differences will be more visible and direct.

This study is using a different theoretical framework by combining previous studies and researches. With the given time and the limited resources, designing a new questionnaire project cannot reach the goal of a national scale or a wider range in early childhood education because the data collected by the ECLS-K: 2011 program is more comprehensive and could indicate an overall conclusion. Also, by using the second review, the data will be easier to collect and analyze. There is little or related analysis for this program, so this paper will also show its originality. Those previous studies, however, using short-term or case studies for the majority of the time, the casual effect and correlation might be more concise but cannot be representative and persuasive than the program on a national scale. According to the number and the overall information, this study will help the reader to make a better judgment of the relationship between the investment of ECA and the learning outcomes. By looking at the raw statics provided by the Longitudinal Program ECLS-K: 2011, this paper is using different statistics and the only control the difference of SES and compares the results of learning outcomes in primary school until fifth grade. And also, this paper will use the statistic to make a prediction of the gap tendency. Meanwhile, with comparisons in different domains, cognitive development that has to emphasize the point in objective or subjective will be focused.

With the report of ECLK-S: 2011 (NCES 2019-130) [21, 22], the SES depends on the poverty standard given by the United States government, according to the income. There are three different levels of SES statistics used in this study. There are families below 100 percent of the poverty standard, or between 100 and 200, and those are above 200 percent; the majority, however, are between 100 and 200, and those families are above. As for the ECA in this study, it refers explicitly to the activities that have direct influences on reading, math, and science during before- or after-school time. In learning outcomes, cognitive performance will be evaluated by reading, math, and science score. In each semester, students had an overall test, which was shown in Tables 5, 6, 7 and 8.

Table 4 Definitions of terms

Extracurriculum Activity (ECA)	Except for classroom time, students have before- or after-school activity. Including family, community or school organized activities.
Learning outcome	The students' reading, math and science mean scores through the 2011 Fall in kindergarten to 2016 Spring at fifth grade.
Socioeconomic states (SES)	Household income. The SES is related to the poverty status, based on status is based on preliminary U.S. Census thresholds for 2010, which identify incomes determined to meet household needs, given the household size. For example, in 2010 a family of two was below the poverty threshold if its income was lower than $14,220.

The data of the study all come from the ECLS-K: 2011 program, collects the data from children directly. Children will have the first-grade data collected by the children trained and certified child assessors. The data mainly equal to the kindergarten items but were made little adjustment according to the higher requirements given by the primary school curriculum. It was designed to be administered within about 60 minutes per child. Child responses were entered by the assessors into a computer-assisted interviewing (CAI) program. These data will be the comparison of the fifth-grade learning outcomes through their primary school every year. Moreover, for making a more accurate assessment and data collection, the program is using two-stage data collection, instead of

the traditional one-step test collecting the scores. By using two-stage data collection, children received the first- stage of a broad range of difficulty, and it is not a specially designed test for targeted students. After distributing students for three different levels of difficulty, low, middle, or high difficulty, students will be given different cognitive tests according to their assigned level in the first stage. This assessment aims at maximizing the accuracy and minimizing the possibility of placing the level wrongly by coincidence. The number of items in reading, math, and science in each section is 167, 159, and 100. The gap of reading mean scale score for different SES children has become smaller, from 7.4 to 11.1 (Tables 5, 6, 7, 8), though it didn't indicate a steady gap growing, the possible tendency gap became more obvious with the grade became higher. The same circumstances exist in math and science mean scale score, from 8.4 to 12 and from 6.8 to 9.5. The tendency of reading means scale score gap is more than the mean scale score in math and science. It may relate to the items, and the difficulty level as the reading test is more subjective and much more dependent on cognitive development. While the other two depend more on logical and objective development. The differences between the three levels of mean scale score are making bigger gaps among children as a tendency. Also, from the raw data, the missing statistic in kindergarten fall 2010 of the science can also be the evidence to prove the difficulty level is different in the subjective and objective cognitive domain.

This study is using secondary data to analyze, which is saying, the accuracy and the reliability of the data fully depend on the original program. Also, with the limitation of time, it is hard to track for long-term studies. The longitudinal program continues doing research in serious. Thus, it is hard to test or track the origin of each item. Also, this study is lacking other resources support, such as long-term tracking of taking the same ECA in the same SES, or different ECA with different difficulty. Levels in the same SES. According to different definitions, ECA can include a wide range of activities and programs, by the current data and information, this study cannot make the judgment on the types of the ECA, the quality of the ECA, and the difficulty level of ECA. This study and also the future research should also focus more on the content of ECA. The data from the families, schools, and communities is not enough, with more supportive data, the casual effect will be more obvious and clearer.

As for the investment of ECA, the tendency seems to be the opposite as the previous assumption. The lower SES tend to participate and support more at the beginning of the childhood education; however, as time goes by, the participation rate drops. The middle level stays steady, and it has not shown anything abnormal, while the higher-level income families have an up-ward participation rate in ECA, which is surprising.

4 Results and Discussion

From the previous researches and studies, the causal relation of ECA and learning outcome remain unknown. This study focuses more on the long-term development and the investment of ECA with the same SES; differences are still obvious. Even more, the mean scale scores in different subjects indicate the differences in a cognitive domain: the subjective development needs more initiative training while objective development needs more external help, such as ECA or other related programs that can help or trigger their interest in learning and courses in school. From the change of the mean scale score, it is not hard to make the assumption that the learning outcomes have distinctive differences in terms of different SES for children.

Table 5 Mean reading scores by poverty status and academic year

Income below poverty	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
below 100%	50.7	65.2	89.4	107.0	115.6	124.4	131.2
between 100% and 199%	53.5	68.7	95.7	112.8	121.1	129.3	136.5
at or above 200%	58.1	73.7	102.0	119.4	127.2	135.2	142.3

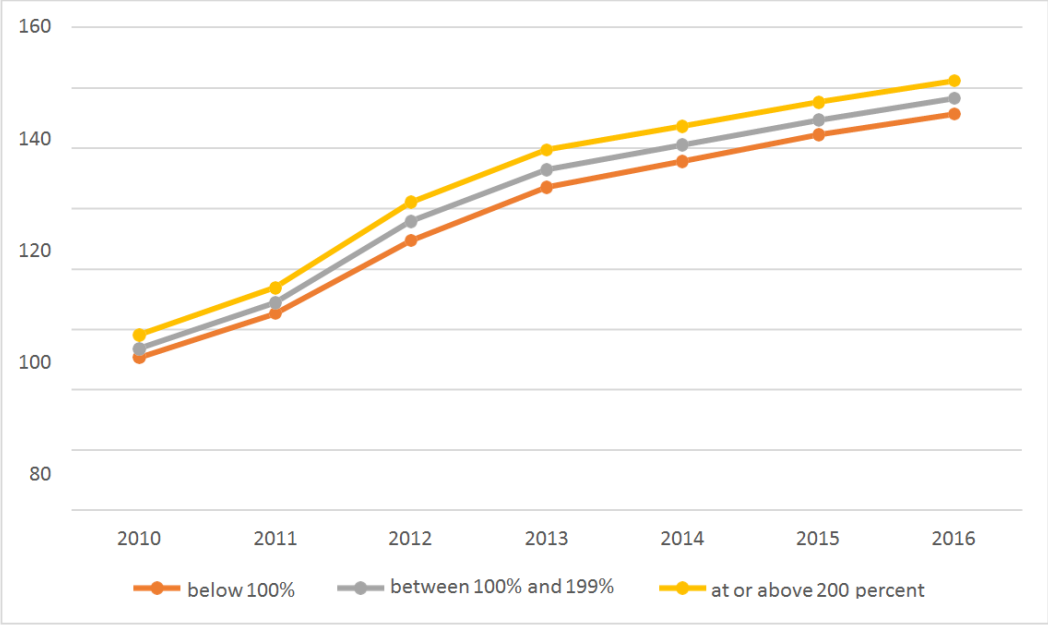

Figure 1 Mean reading score of ECLS participants with different poverty status from 2010-2016.

Table 6 Mean Math scores by poverty status and academic year

Income below poverty	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
below 100%	31.5	45.6	67.8	84.6.	98.4	106.7	113.5
between 100%	35.1	49.4	72.6	89.9	103.9	112.6	119.5
and 199% at or above 200%	40.4	55.2	78.9	97.2	110.9	119.2	126

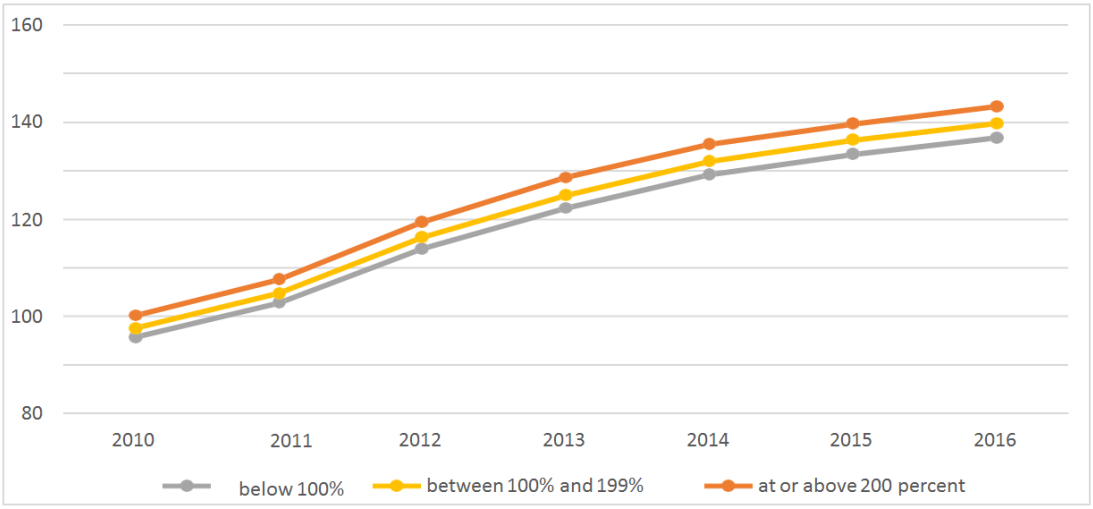

Figure 2 Mean Math score of ECLS participants with different poverty status from 2010-2016.

Table 7 Mean Sciences scores by poverty status and academic year

Income below poverty	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
below 100%	-	30.2	38.2	47.8	55.4	62.3	68.9
between 100% and 199%	-	33.6	42.6	52.5	59.6	66.7	73.4
at or above 200%	-	37.0	47.2	57.2	64.8	71.5	78.4

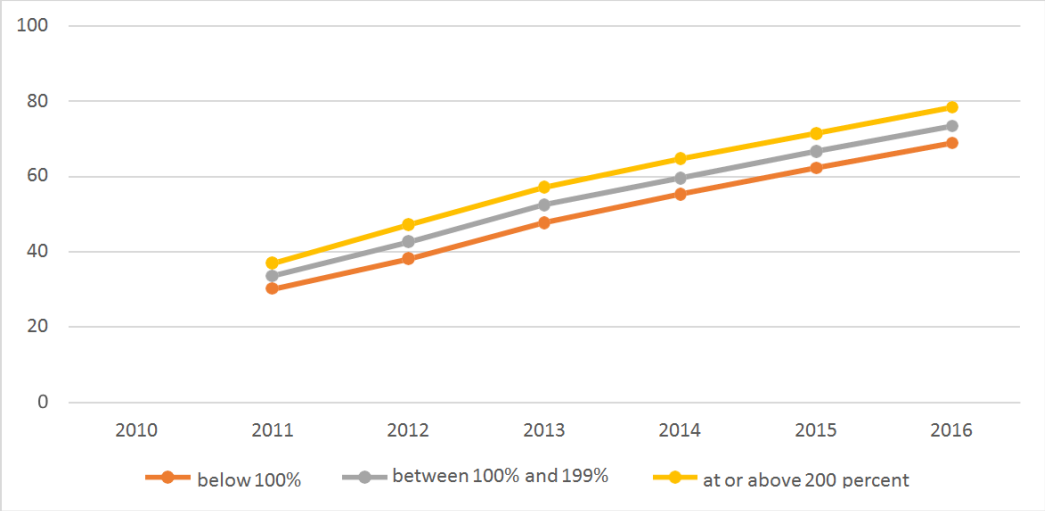

Figure 3 Mean science score of ECLS participants with different poverty status from 2010-2016. SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K: 2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, spring 2014, spring 2015, and spring 2016.

Table 8 ECA investment for children who were in kindergarten for the first time in the 2010–11 school year and in fifth grade in the spring of 2016, by child and family characteristics: spring 2012, spring 2013, spring 2014, spring 2015, and spring 2016 from three SES by percentage

Income	**2010**	**2011**	**2012**		**2013**		**2014**		**2015**		**2016**	
Below poverty			**Y**	**N**	**Y**	**N**	**Y**	**N**	**Y**	**N**	**Y**	**N**
below 100%	-		57	20	47	22	55	30	50	33	42	35
between 100% and 199%	-	-	25	23	30	22	27	23	32	20	33	18
at or above 200%	-	-	18	56	23	56	18	47	18	47	25	47

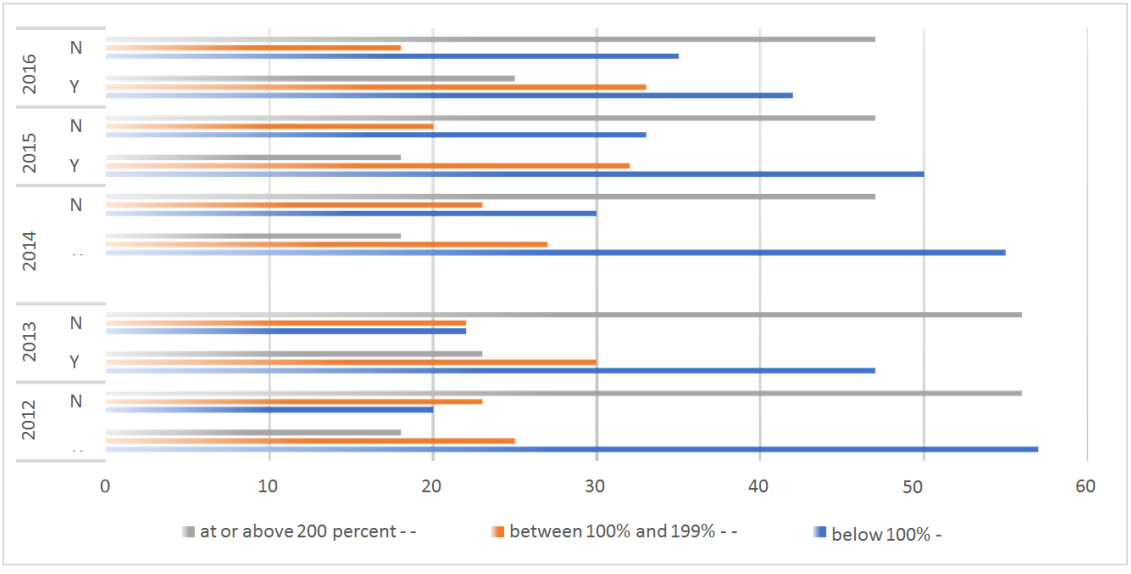

Figure 4 ECA investment for children who were in kindergarten for the first time in the 2010–11 school year and in fifth grade in the spring of 2016, by child and family characteristics: spring 2012, spring 2013, spring 2014, spring 2015, and spring 2016 from three SES by percentage

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K: 2011), fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, spring 2014, spring 2015, and spring 2016.

Also, this study has to point out the differences in cognitive development in terms of subjective and objective. Reading can be understood as the subjective cognitive course, and it shows the understanding ability, vocabulary, definition matching, and comprehension. Math and science, both of them can be the representative course for logical thinking and rational thinking ability. The tendency of the gaps has clearly shown the possible future direction, whether it is upwards or downwards for the children. With the investment of ECA, the learning outcomes still have a gap.

However, the gaps have not grown faster as the tendency in the first two years in 2010 and 2011. With the investment of ECA in primary school, the growth of gaps stays in control. This study also concerns social equality. What if educators encourage the future before- and after-school activities to support and help the in- class activities, to keep the same level SES students at the same level, instead of gaps that create by families' differences in investment. Moreover, with the tendency of different investment that different SES families have, potentially, the pressure for lower-income families increase. Also, it has shown in Tables 5, 6, 7 and 8, that different SES led to different preferences in choosing to attend or not attend the ECA. The much income families can get, not necessarily means the higher possibility for them to invest in ECA, but provides greater and much more freedom to choose. Also, ECA won't be the only activity for all the families to spend in the field of education. This study confirms the tendency gap may grow bigger during childhood development, even during the time before they went to primary school. As the previous research paper and studies indicate, cognitive development started early in human life; the first five years can make a big difference and continue to affect learning outcomes. But with the ECA, this study could also have the conclusion that different SES may eliminate the gap with the help of investing in other programs rather than the in-class activities only. Moreover, this study also finds the tendency of willingness to invest in ECA for different levels of SES. The lower SES tends to involve at a high rate, but declines at a steady pace; the middle and higher SES grows its participation rate slowly. As far as people concerned, once the ECA can be proved to support and improve the learning outcomes in a reasonable range and ECA has its positive non-substitutable effects in education, families will certainly increase their investment in ECA. This study also wants to call for attention to the investment in ECA. It is possible that by a certain time and method, the ECA can be an ideal supplement for the class and school activities. The study will not only be effective with the four-corner house but also can be outside classes. Moreover, it is ideal for families and schools to cooperate, to make promotion in ECA before- and after class. With help from school and community, families will find the ECA not a burden but a choice for more forms of education and schooling.

5 Conclusion

This secondary data analysis study uses the program to prove and test the hypothesis of the same SES different investment in ECA and its correlation with the learning outcome for early childhood children to primary school. The tendency trend of developing greater gaps among children stays valid, and it also predicts the possible rules in early childhood education. The gap between different SES families and students still cannot be eliminated by the investment of ECA or other approaches.

However, the tendency of minifying the future gap between study stays positive. Although this longitudinal program provides comprehensive data nation-wide, still, the individuals, children, and families by cases stay unknown. To bring a further discussion and a more persuasive reference for future use, studies of community in-depth or individual face-to-face interviews and case studies are essential. More overall research will help early childhood education to design more appropriate ECA in the future, and it will help families, schools, and communities in building a study-friendly environment for children.

Different variables may also lead to a totally different result, such as urban or rural schools, Catholic or Christian communities, traditional family, or gay and lesbian families. Although the ECLS-K: 2011 collected a wide variety of types of families, still, further study should also consider the possibility under different circumstances, especially nowadays, children face more change factors than before. For the education area, the first year of childhood education should be taken into account for cognitive development more seriously. Thus, the ECA market and the cooperation with families, schools, and communities will be more practical and useful for helping the children to eliminate the gap among SES. Society is still growing at the speed that many families and individuals cannot

predict, so the education of children becomes more important than before if families want their children to have benefits in competing with others. For example, with computer related ECA, students also can be benefited in their academic study [23]. Moreover, the focus and concern about early childhood education should be a continuous hot topic worldwide. The Longitudinal research project is and will continue to use different generations, and these children will be the targets of long-term data collection. This can provide more information on the ECA domain and academic results. In addition, the study still cannot use mathematical research methods to assess and analyze the causal effects of learning outcomes on children. As for the ECA and its relationship with a learning outcome, future research should focus more on causal correlation deeply and closely, to bring the attention of ECA further in the field of early childhood education.

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