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Distance Learning Effects on the Early Elementary Student's Socio-Emotional Development and English Acquisition

Alejandra Irene Escamilla Saldaña

American School Foundation of Monterrey, alejandra.escamilla@asfm.edu.mx

Luisa Fernanda Quintanilla Herrera

American School Foundation of Monterrey, luisa.quintanilla@asfm.edu.mx

Margarita Coronado Fernández

American School Foundation of Monterrey, margarita.coronado@asfm.edu.mx

Advisor

Dr. Joan Della Valle

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DISTANCE LEARNING EFFECTS ON THE EARLY ELEMENTARY STUDENT'S
SOCIO-EMOTIONAL DEVELOPMENT AND ENGLISH ACQUISITION

by

Alejandra Escamilla

Luisa Quintanilla

Margarita Coronado

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Abstract

The COVID-19 pandemic impacted all schools throughout the world. Because of this experience, student's learning may have been affected. This study sought to find if there could have been an effect in student achievement and development after a year of distance learning. Specifically, does an ELL student's english acquisition, self-regulation and social skills scores lower after a year of distance learning? If there is a negative impact, do these lower scores get bridged to meet expectations after a year of in-person instruction and intervention? In this study, 16 teachers from PK to 2nd grade at ASFM in Monterrey, Mexico were surveyed regarding their observations of students' achievement. There were 12 questions total in a Likert scale format; 6 questions regarding students right after distance learning in September, and 6 questions about the students in May. The questions were about their observations on the student's: reading comprehension, writing expression, listening comprehension and oral expression in English, as well as their self-regulation and social skills. After conducting t-tests to analyze our data and test for significance, we found significantly lower scores than expected in all areas for September, and nonsignificant differences than the expected scores for May. Our results support our hypothesis that a year of distance learning did have a negative effect in the 4 areas studied, and that with a year of instruction and intervention in-person, students were able to bridge that gap and achieve expectations of their grade level in May.

Introduction to Research Problem

Due to the COVID-19 pandemic, students have been exposed to an unprecedented way of instruction. Never before had all students in the world stopped going to school, and switched to a fully online learning scenario. Although in some schools students were not fortunate enough to have access to online learning, at the American School Foundation of Monterrey, all students had access and received the highest quality of instruction possible. Because of this, we had a unique opportunity to assess how this experience affected, both negatively or positively, their learning growth. It was interesting to compare achievement in academics of students, and their socio-emotional growth in early elementary.

Students in early childhood education are going through key milestones in their socio-emotional development, so their lack of socialization due to online learning was worth looking into. It was important to see if there were any effects on the long run. Some students, however, may have benefitted from the digital learning experience, such as books read virtually. This may have actually increased their engagement, and learning loss may not have occurred in these cases. For this reason it was worth examining to see what can be learned from distance learning: what works, what doesn't, what can be brought into the classroom, and more. Preschool is also the time when students learn to self-regulate, and since we weren't able to practice this skill in the classroom, it might also have been affected for the incoming students who were in a distance learning setting for 15 months. Having the experience of being completely independent, however, may also have increased their self-regulation. Thus, this study took a look at two important aspects of socioemotional development: their social skills with their peers, and their self-regulation skills.

Another important aspect that we considered is that as teachers it was very hard to assess certain things that we simply couldn't see, or couldn't intervene with. For example, fine motor development was hard to assess since, at times, we weren't able to see the students actively working. Other times, we didn't know if parents had supported their students in their assignments, and finally, we were unable to intervene as we normally would. For this reason, it was also worth comparing what students should have been able to do at their respective grade level, to what they actually were achieving.

Finally, due to students not being in the classroom a full day, their exposure to English was reduced significantly. For this reason, their English language development may have also been hindered. This study also took a look at this important aspect of their learning, to see whether or not their English learning was affected by distance learning, by comparing what should have been the expectation at their grade level, to what actually is.

Because this situation is unlike anything we have ever seen, there are limited amounts of research on the effects a pandemic can have on learning. New research is constantly coming out regarding distance learning, but whether or not distance learning hinders learning, and if it will have a negative impact on students has not been looked at yet, particularly at the preschool age.

Review of Literature:

To inform our study, we decided to take a look at studies about distance learning effects in early childhood. Ford et al. (2021) write that distance learning was challenging in the early elementary years due to a number of factors including: low participation from students and parents, limited social interactions, and the fact that teachers didn't feel prepared to have developmentally appropriate tools to engage their students, as well as the fact that they don't

have an understanding of the virtual tools that exist for distance learning. Similarly, a study conducted in Ontario, Canada found a number of problematic themes associated with distance learning (Timmons et al., 2021). For instance, they comment on how inequitable distance learning truly was. Not all students had the same access to technology, internet connectivity or to didactic resources. There were also “deep concerns over the negative social and emotional impacts of remote learning for students” (Timmons et al., 2021). Many parents in this same study also commented about their concern with regards to the academics of their children, mentioning that they didn’t feel prepared to support their children academically, but that they felt that in the long-term their children would be able to catch up. A study taking a look at first-graders in Norway (Skar et al., 2021) found that first grade students who had been through a year of pandemic performed significantly lower than their peers who had tested a year earlier in first grade. This shows that there is a clear academic effect, at the very least in their writing skills, after a year of distance learning. Finally, all of this begets the question: can these effects be addressed, and bridged with intervention? A study conducted by Philips et al. (2021) showed that out of 5 different interventions that were conducted on preschoolers and kindergarteners, 3 were effective in early literacy measures. This shows that although not all intervention may be appropriate, certainly choosing the right intervention is crucial, however, in order to ensure student growth in the area that is being addressed. This is related to our study, since with this information we can now confirm that with appropriate and timely intervention, if gaps exist in the areas we are looking at, we can confirm that these gaps may be closed with the appropriate intervention.

Acar et al. found that teacher-child relationships are crucial in the development of self-regulation in the preschool age (2022). They found that if a teacher and a child have a close

relationship, there is a positive association with having higher self-regulation. The opposite, however, is also true. If a teacher has a conflicted relationship with the student, there is a negative association, and that child may have lower self-regulation. This shows how important building a strong relationship between student and teacher is for their self-regulation development. Distance learning negatively impacted the relationship between child and teacher, since virtually, relationships were very hard to build. Although a relationship may still have been made, it wouldn't have been as strong as if the year had been in-person. This means there could have been a negative effect on their self-regulation development. As per their social skills development, preschool has been linked to be crucial in developing stronger social skills, and social problem solving skills after receiving an SEL program in school (Dereli-Iman, 2014). Social skills, then, can be further improved in a preschool setting with adequate SEL instruction. Since students lacked this in-person guidance that they typically would have received in-person, there may have been a detrimental effect in their social skills development after a year of distance learning.

Research Problem and Questions:

Given all the previous background, we wanted to explore whether or not distance learning affects student's learning. In particular, we hoped to find whether it affects the preschooler's self-regulation, social skills, and/or their English acquisition. The former two categories were chosen based on what we perceive to be the areas that we were least able to intervene with as teachers, and the latter based on mere diminished exposure to English compared to their in-person counterparts. Finally, we wanted to see if, in the case that distance learning did have a negative impact on student learning, this gap may have been bridged by the end of the school year in-person, in May.

Research Questions

1. Does a student who was in a distance learning environment have a different amount of self-regulation skills than what is expected at their grade level?
2. Does a student who was in a distance learning environment have fewer social skills than what is expected at their grade level?
3. Does a student who was in a distance learning environment acquire less English than what is expected at their grade level?
4. If students are performing below grade level in any of the aforementioned areas, is the student able to reach grade level expectations in that area after a year of instruction and intervention?

Hypotheses

1. Students who were in a distance learning environment for a year have a different amount of self-regulation skills than what is expected at their grade level.
2. Students who were in a distance learning environment for a year have fewer social skills than what is expected at their grade level.
3. Students who were in a distance learning environment for a year have acquired less English than what is expected at their grade level.
4. If students are performing below expectations, they will bridge the gap and reach grade level expectations after a year of in-person instruction and intervention.

Independent variables

1. One year of distance learning
2. One year of instruction and intervention

Dependent variables

1. Self-regulation scores in September and in May
2. Social skills scores in September and in May
3. English acquisition scores in September and in May

Definition of Terms

1. **Self-regulation:** the ability to control one's body and self, to manage one's emotions, and to maintain focus and attention (Shonkoff & Phillips, 2000 as cited in Germeroth & Day-Hess, 2013)
2. **Social skills:** Any competence facilitating interaction and communication with others, where social rules and relations are created, communicated, and changed in verbal and non-verbal ways.
3. **English acquisition:** The process by which individuals acquire the ability to perceive and understand the English language.

Methodology:

Data Collection Plan

Our data was collected in a questionnaire given to teachers in May. The survey was given to all teachers in the PK, K, 1st and 2nd grade levels, since we are interested in the effects of distance learning in Early Elementary. We did not ask Nursery teachers since it is the first grade level at our school and those students were not exposed to a distance learning setting the previous year. All the questions followed a Likert scale. The questions ranged from one to five, where three is what is expected of the student at their given grade level. One referred to significantly below grade level, and 2 was slightly below grade level. Similarly, 4 refers to slightly above grade level, and 5 was significantly above grade level. In our study, teachers will be considered experts if they have at least 5 years of experience in the given grade level. Having acquired that experience, teachers are best at identifying whether the students are where is expected, below expectations, or above expectations.

Participants

In this study, we took a look at four different grade levels: Pre-Kinder, Kindergarten, First Grade and Second Grade. Therefore, each grade level will have experienced 15 months of distance learning in their prior grade, and the Pre-K students will have never actually been in school in-person, since their first year of preschool began online. Each class has 20 students, split nearly evenly between girls and boys. Sixteen teachers responded out of a potential 32 (8 from each grade level), amounting to approximately half of teachers per grade level in each grade with the exception of Pre-Kinder that had 3 responses, and Kindergarten that had 5 responses. The vast majority of the students in our study come from a high income background, so they had access to

technology, and most of them received support either from parents or a nanny throughout their distance learning experience. All students connected on a regular basis to their classes, and had ongoing communication with their teachers.

Instruments

Because we know that teachers during May are busy with other tasks, we decided to keep the survey concise. In essence, there were 12 questions in our survey. Six of the questions pertained to students in September, while the remaining 6 were regarding the same content but in May. The 6 questions (for September and May) were about student's performance in their English acquisition, including their English oral expression, their ability to follow directions in English, their English Reading Comprehension and their English writing expression. The other 2 questions were related to their socio-emotional development. One question asked about students' self-regulation, while the other asked about the student's social skills. Before any of the questions pertaining to our study, we also collected data on the grade level of the teacher, and on how many years they had been teaching the given grade level so as to ensure expertise in the grade level. Finally, we ensured that the results were anonymous so teachers would feel comfortable providing their honest answers.

The following is a sample question from our survey regarding English oral expression: "ENGLISH ORAL EXPRESSION: Students overall in SEPTEMBER performed: 1: significantly worse than expected 2: moderately worse than expected, 3: just as expected, 4: moderately better than expected, 5: significantly better than expected" Where teachers select a number on a likert scale. Similarly, to compare results to May, teachers had to answer the same question but now about May. ENGLISH ORAL EXPRESSION: Students overall are currently

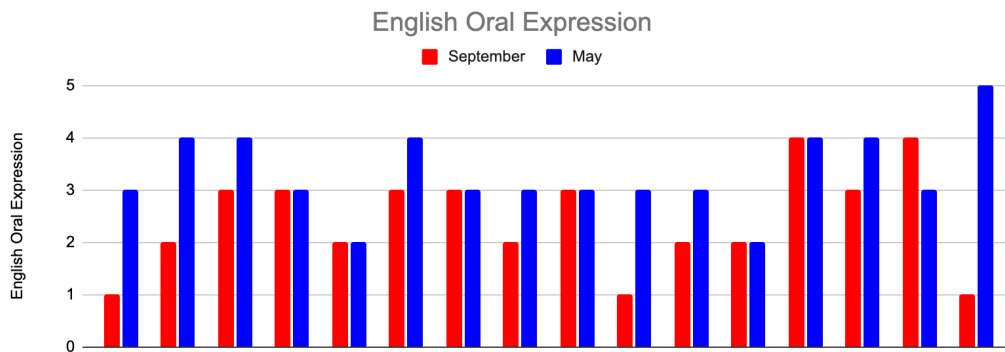
performing: 1: significantly worse than expected 2: moderately worse than expected, 3: just as expected, 4: moderately better than expected, 5: significantly better than expected.

Findings of Our Study:

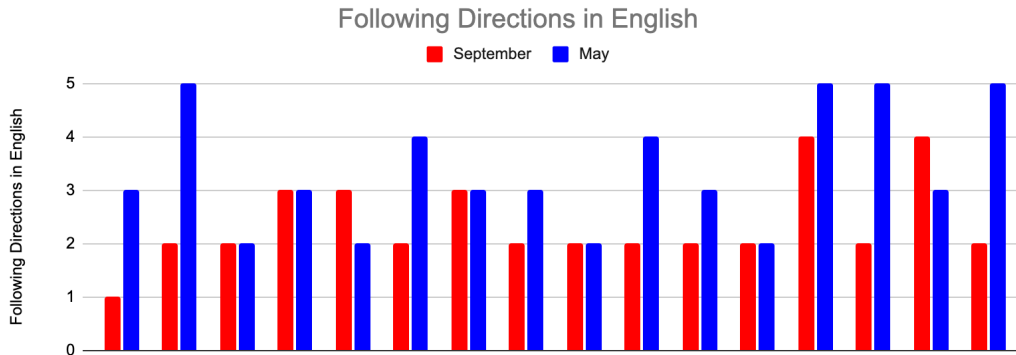
Data Results

We received a total of 16 responses out of a possible 32. Of these responses, 3 corresponded to the Pre-Kinder grade level, 5 to Kinder, and 4 to both 1st and 2nd grade. To look at whether or not students had shown growth between September and May, we analyzed the results of their responses by using two-tailed paired *t*-tests to compare the results. All of our different content areas revealed significant results. All our results have a corresponding bar graph to illustrate the distribution of responses from teachers. In the graph, each paired bar in red and blue is the response of a given teacher. Red refers to their response of the students regarding September, while blue is of the same students, but in September.

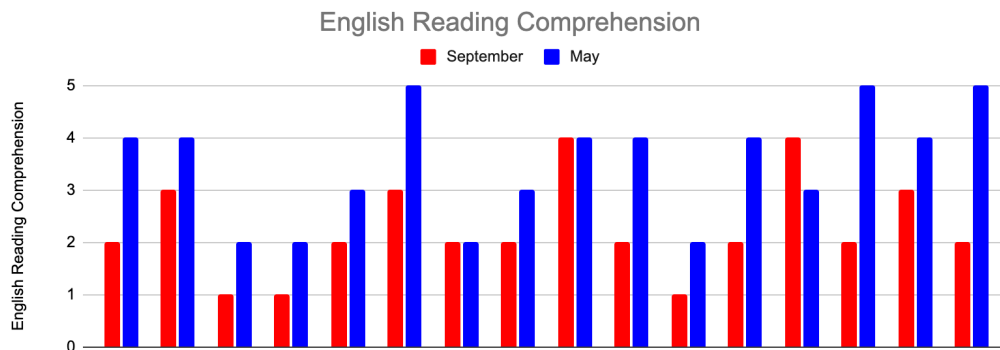
Their English acquisition was measured with 4 different questions. There was a significant increase in performance of student’s English oral expression from September ($M = 2.44, SD = 0.96$) to the end of year in May ($M = 3.31, SD = 0.79$), $t(15) = 2.907, p = 0.011$ with an effect size of $d = 1.005$.



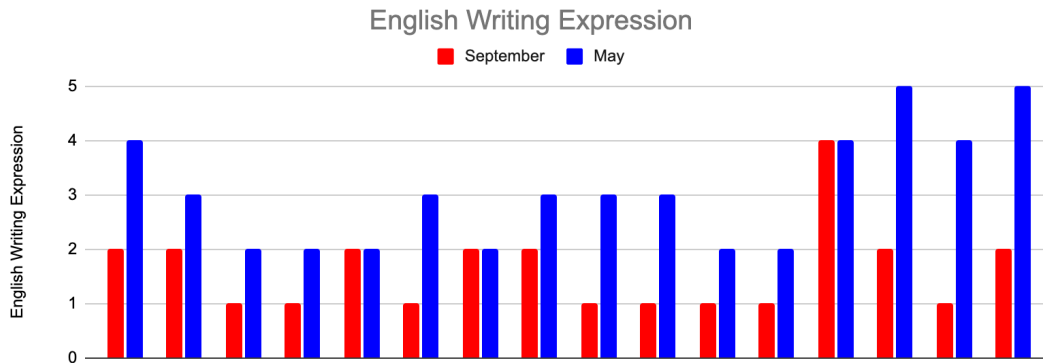
For student's ability to follow directions, or their understanding of oral English, teachers also reported a significant increase. In September, teachers reported a mean of 2.38 ($SD = 0.81$) while in May that had increased to a mean of 3.38 ($SD = 1.15$), $t(15) = 2.928$, $p = 0.010$, $d = 1.005$.



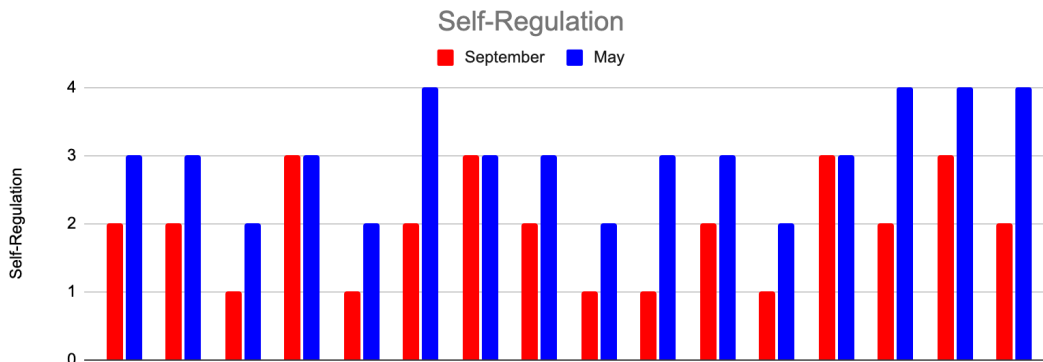
With respect to their reading comprehension, students had an even higher significant increase in their performance. The reported mean for September was 2.25 ($SD = 0.93$), and for May it increased to 3.50 ($SD = 1.10$), $t(15) = 4.697$, $p < .001$, $d = 1.227$.



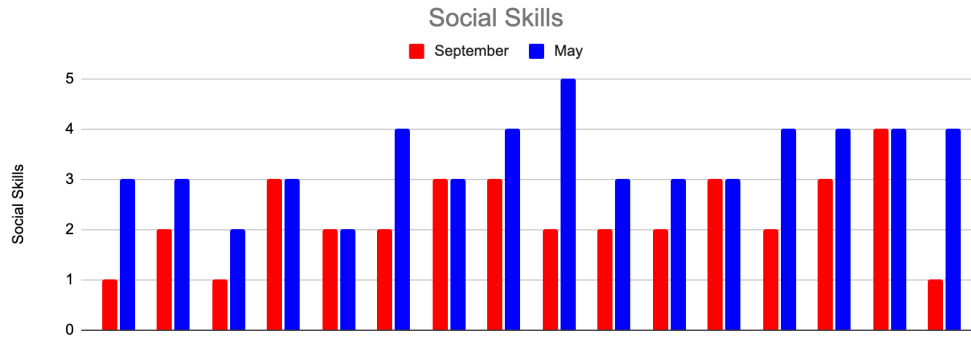
Similarly, their writing expression increased in an extremely significant way from September ($M = 1.63$, $SD = 0.81$) to May ($M = 3.06$, $SD = 1.06$), $t(15) = 5.578$, $p < .001$, $d = 1.227$.



Student’s socio-emotional development also had a significant increase. Their self-regulation dramatically increased from a reported mean of 1.94 ($SD = 0.77$) in September, to a mean of 3.00 ($SD = 0.73$) in May, $t(15) = 6.249$, $p < .001$, with an exceptionally high effect size of $d = 1.413$.

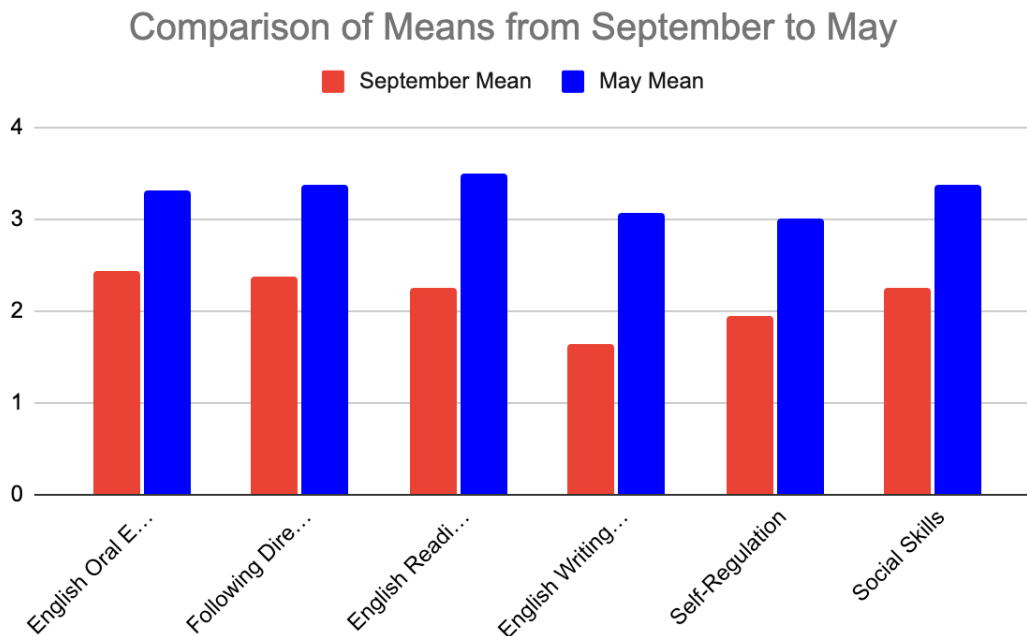


Finally, their social skills increased significantly from September ($M = 2.25$, $SD = 0.86$) to May ($M = 3.38$, $SD = 0.81$), $t(15) = 4.392$, $p < .001$, with a very high effect size of $d = 1.353$.



After analyzing the data of growth from September to May, we looked at the data separately within each time frame to compare it to what would have been expected ($\mu = 3.00$), to see if distance learning had had an effect on student learning in these areas. We used a two-tailed one-sample *t*-test to compare each content area both in September and in May. Interestingly, all results from September deviated significantly from the expected mean, while none did so in May. For oral expression, results in September ($M = 2.44$, $SD = 0.96$) were significantly lower than the norm, $t(15) = 2.33$, $p = 0.034$, $d = -0.583$. In May, there was no significant difference between the sample and the norm. Similarly, in their ability to follow oral directions in English, the reported mean of 2.38 ($SD = 0.81$) was significantly lower than the hypothetical mean of $\mu = 3.00$, $t(15) = 3.101$, $p = 0.007$, $d = -0.765$. This was also true in their reading comprehension in English performance ($M = 2.25$, $SD = 0.93$), $t(15) = 3.226$, $p = 0.006$, $d = -1.691$. For their writing expression, students also performed significantly lower than the expectation ($M = 1.63$, $SD = 0.81$), $t(15) = 17.677$, $p < 0.001$, $d = -1.691$. With regards to their socio-emotional skills, results also yielded significant differences to what is expected. In their self-regulation, students performed much lower than expected in their grade level ($M = 1.94$, $SD = 0.77$), $t(15) = 5.507$, $p < 0.001$, $d = -1.377$. The same holds true for their social skills performance in September, where

students were significantly lower than expected in previous years ($M = 2.25$, $SD = 0.86$), $t(15) = 3.488$, $p = 0.003$, $d = -0.872$.



The two-paired one-sample t -tests that were performed to look at May's results all yielded no significant results.

Discussion

After analyzing our data, it became clear that there were significantly lower differences in students' performance after the pandemic, and a significant increase in results from September to May. May results, however, were not significantly different to what would have been expected every other year in May. This serves to show that firstly, students had a significant gap in their learning in September due to the effects of distance learning, but secondly, and perhaps even more importantly, students were able to bridge that gap that existed in September by May. This means that all of our hypotheses were supported. Our results indicated that students showed

significant growth in all the areas, although they had even more growth in the areas that were lower to begin with. These two areas were reading comprehension and writing expression in their English language development, and in their self-regulation. Although all the areas tested brought about significantly lower than expected results, these three areas were drastically lower. Despite these low results, however, all tested areas were not different to the expected in May. This means that students were able to grow enough in these areas to get to the expected level. Perhaps this is why the growth in those three areas had an even stronger effect size than the others.

Overall, our study provided a very optimistic outlook on distance learning and its effects. It seems that although it may have posed negative effects at first glance, with the needed intervention and with getting back in-person, students were able to recuperate from the loss they had experienced in their learning. This not only shows how high students' resilience can be, but it also serves to show how effective intervention can be in getting students to grade level expectations.

Implications

Knowing what we discovered in our study, it becomes clear that distance learning did have a detrimental effect on students' learning, and as such, the gap must be addressed, and more importantly, bridged. It also becomes apparent that students who may appear to be above grade level, can quickly reach grade level expectations, or even surpass them when they receive the appropriate intervention. Although this study wasn't measuring intervention effects per se, in many ways, it demonstrates the efficiency of it. Most students were performing below grade

level in September, and students needed to act accordingly. With their timely intervention, most students are performing at, or above grade level expectations in these areas measured.

Other project considerations

As we conclude our discussion of our results, it should be noted that all of the questionnaire results were conducted in May. Although we did ask teachers about their observations in September, teachers were responding to these questions in May. This means that teachers were acting upon recall of their observations, rather than direct observations. With this in mind, it is important to recognize that they may have been biased, or may have exaggerated (or understated) their observations of a student's progress. Something else worth mentioning, is that the scores in writing expression may have been as low as they were in September, since writing also requires different skills in order to be successful in it, such as fine motor skills. So it may have been that, in combination with the English acquisition, that affected their writing expression.

All of the results, however, clearly indicate significant results, so even if a few teachers may have skewed the data, the results are clear: students displayed significantly lower results in September, to then achieve significant growth and to have no significant differences to the expected by May. Other challenges we encountered were that in May, teachers are burnt out and may not be as willing to participate in studies. We had to continuously reach out and ask them to complete the survey, and, even so, we only got half of the reach we would have wanted when we sent out our survey.

Conclusions and recommendations for future study

In conclusion, this study was informative in revealing how distance learning truly harms an early childhood student's learning progress, as well as how timely intervention is effective in

addressing gaps that students may have. This study, however, measured the effects of distance learning only in Early Elementary aged students. Because of this, we specifically looked at their development of the English language (since, at the school studied, students are mainly English as a second language learners), and their self-regulation and social skills — all key areas that develop in these ages. Because of this, our results are only representative of these age groups. It is unclear if similar effects could have happened in the older grade levels, extending to even Middle School or High School. Similarly, it may not even be the case that a gap existed in those ages to begin with in September. Because of this, it may be worthwhile to look at distance learning effects at older grade levels, and see if the effects were bridged by May, just like in the Early Elementary group. Likewise, this study only looked at very specific areas, and it is also worth considering to look at different areas that this study overlooked, like mathematical reasoning, scientific thinking, fine motor skills, and more.

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