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Comparing Full Day Kindergarten to Half Day Kindergarten

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Comparing Full Day Kindergarten to Half Day Kindergarten

Alisha Bazzano

Submitted in Partial Fulfillment of the Requirements for the Degree

Master of Science in Education

School of Education

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This thesis, written under the direction of the candidate's thesis advisor and approved by the Chair of the Master's program, has been presented to and accepted by the Faculty of Education in partial fulfillment of the requirements for the degree of Masters of Science in Education. The content and research methodologies presented in this work represent the work of the candidate alone.

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Abstract

This study examines half- and full-day kindergarten programs and their effectiveness in regard to a child's academic progress. Some literature finds a positive relationship between the success of a child and the minutes spent in the classroom. However, other literature debates as to how long the progress is sustained. The purpose of this study is to compare the scores of kindergarten students in both half-day and full-day programs and analyze the data to determine if one program is more successful than the other. Three assessments in language arts were given to each student, assessing uppercase, lowercase, and letter sounds. The kindergarten scores from both classes, full-day and half-day, were compared to observe if student achievement was effected by spending more academic minutes in the classroom. The data did not reveal an overall statistical significance. However, out of the four ANCOVA tests that were completed, one did show statistical significance when the scores were disaggregated by the individual students' scores. The lowercase letter assessment did discover a statistical difference. But based on the three other tests, more academic minutes in the classroom doesn't always mean more academic success for students.

Introduction

Will students enrolled in a full-day-kindergarten (FDK) program perform equally as well as half-day-kindergarten students? Whether or not an extended day in the classroom is beneficial for five-year-olds has been debated. However, educators do agree that kindergarten is the foundation for student learning. With standards being so strenuous in kindergarten, it is difficult for a teacher to find the time to fit in everything necessary for students to meet mastery in all academic areas. On the other hand, many educators, families and researchers believe a six-hour day for five- and six-year-olds is too long. Students need time to learn through play as well as instruction. Some studies show an extended day does have a positive effect on the students' academic progress but that it is not sustained by the third grade. Other studies have shown that a lengthened school day for kindergarteners is too long, leading to negative behaviors and feelings towards school. This study examined the correlation between additional minutes in the school day and increased test scores with kindergarten students. The study compared a full-day kindergarten (FDK) to a half-day kindergarten (HDK) program in two rural, Northern California towns.

Background and Need

Over 60% of all kindergarteners today are enrolled in a full-day program. Kindergarten began in the late 1800's in the United States and was originally a FDK program that had a developmental approach rather than an academic one. It remained a full-day until World War II when it changed to half-day because the workforce lacked labor. The change allowed teachers to work after their students went home for the day. After WWII, kindergarten remained a half-day program because of the "baby boom". Teachers could accommodate the increased population because they could teach in the morning and then again in the afternoon. This continued to be

the trend until the late 70's and early 80's when larger numbers of parents were both working outside of the home. Also policy makers and educators wanted kindergarten to make the shift towards a more academic program than a developmental. Full-day kindergarten began to grow in popularity around the United States (DeCicca, 2005).

The idea of kindergarten was first introduced in the United States in 1850 by a German pedagogue Friedrich Froebel (Dombkowski, 2001). Froebel's pedagogy was to focus on the whole child, promoting both developmental and spiritual characteristics. Froebel felt that kindergarten was not an academic place and should not include the three R's (reading, writing, and arithmetic).

However, by the beginning of the 1980's, the pressure to produce an academic child was beginning to be insurmountable. In addition, more households had two members working outside the home and the need for an all day program started to grow. By 1998, 55% of all attending kindergarteners were attending a full-day kindergarten program (Dombkowski, 2001, p. 540). Full-day kindergarten programs are located throughout the United States with a majority occurring on the East coast with the highest percentage being in the South. Full-day kindergarten programs are most often offered where there is a high poverty level and minority population. With standards ever increasing and school accountability enhanced, many districts are turning to a full-day kindergarten program to try and keep up with the rigor (Ackerman, Barnett, & Robin, 2005).

Kindergarten standards have become the old first grade standards and are difficult to attain. Year after year students are falling short of meeting these standards set forth by the state of California. Many districts have made the switch to full day from half day in order to meet the demands of the state standards. But is a FDK program working and meeting the academic needs

of the students? Research needs to be done to analyze the benefits of both programs, FDK and HDK, to see if one is making more of a positive difference than the other on students' academic progress.

Statement of Problem

With growing academic pressures placed on teachers and students, it is important to know if increasing the academic day for kindergarteners actually has a positive effect on their educational performance. Will this increase in minutes lead to an increase in academic scores? More is expected from kindergartners today than in the past. Does extending the day begin to close the achievement gap and place students at an advantage by increasing their academic progress? This study seeks to know if there is a positive correlation between increased academic hours and student achievement. It examines three components of the California State Standards: uppercase letters, lowercase letters, and letter sounds. California State Standards for Kindergarten 1.6 and 1.14 state the following respectively: Recognize and name all uppercase and lowercase letters of the alphabet. Match all consonant and short-vowel sounds to appropriate letters. Many students do not attain the Standards 1.6 and 1.14 by the end of the kindergarten school year but it is uncertain if increasing the daily school minutes would help students achieve this demanding goal.

Purpose Statement

The purpose of this study is to determine whether more instructional minutes lead to better academic outcomes among kindergarten students. By comparing the scores of kindergarten students in both a FDK and a HDK programs in similar schools, it may be determined that the longer instructional day is academically important.

Research Questions

This study researched the performance of kindergarteners in a full-day and half-day program by evaluating the end of the first trimester scores and the end of the third trimester scores. Each child had three scores per trimester with a total of six scores. The scores are gathered from uppercase letters, lowercase letters, and letter sounds. The assessment measured the students' awareness of: letter recognition and letter sounds. The students' scores are calculated out of 26 possible in each of the areas. By the end of the third trimester, to meet mastery in the State Standards, the kindergarten students need to be at 26 sounds and be able to recognize 26 letters in both upper- and lowercase. The study will answer the following question:

Will kindergarten students' scores be positively impacted with more academic minutes in the school day?

Theoretical Rationale

Some students are entering into kindergarten at a disadvantage because of their lack of life experiences, quality of preschool, or lack of parental involvement. With standards growing increasingly harder to achieve, students are struggling academically at an early age. Many districts have decided to offer full-day kindergarten programs to help alleviate the educational pressures. Studies have shown, however, that increasing daily instructional minutes have a short term positive effect and that over time there is no benefit to increasing the day for kindergarteners. In fact, some studies show that a lengthened day for kindergartens can have an adverse effect on both their behaviors and attitudes towards school.

It is the researcher's assumption that in the study there will be no or little difference in the two programs being compared: full-day versus half-day. The researcher believes that this study will show comparable results for the students in a half-day program in comparison to the

students in a full-day program. The researcher believes that a thorough, comprehensive curriculum and utilizing the academic minutes efficiently will be equivalent to that of a full-day program. The researcher assumes that the students at the end of the study will be able to meet the benchmarks set forth without any discernible difference in which program the kindergartener was enrolled.

Some of the issues surrounding districts deciding to move to a full-day model are costs from: supplies, aides, curriculum, transportation, additional teachers, space, scheduling. Some schools that offer a HDK program can share classrooms, curriculum, and supplies. Other HDK programs can also have a teacher teach a morning and afternoon class; when the morning kindergarteners are dismissed, the afternoon students arrive. Another expense for districts to consider when making the decision to offer a FDK program is transportation. Half-day-kindergarten programs typically only offer transportation one way if at all. When kindergarten students begin to go to school all day, if the school offers transportation, they need to be accounted for when configuring space. The benefit might not outweigh the cost associated with implementing a full-day kindergarten program for districts.

Literature Review

Many results from studies regarding the length of the academic day for kindergarteners are conflicting. Some believe a lengthened day helps close the academic gap for struggling students while others believe that if there is a benefit at all to a full-day program, that it isn't long term. Besides the academic side of the debate, many also believe that a six-hour day for five-year-olds is too long. On the other hand, many households now have two working adults outside the home and children are in childcare during those hours if they are not in school. The following studies detail the positives and negatives of a full-day and half-day kindergarten program.

Review of the Previous Research

The literature reviewed in this section focuses on the history of kindergarten, and comparing full-day kindergarten to half-day kindergarten and its effects on the achievement of kindergarteners. The research available shows conflicting results. Policy makers and school districts have been researching the effects of the impact on students in full-day kindergarten programs in comparison to half-day programs for fifty years. With increasing academic pressures placed on teachers, parents, and students, this will continue to be an important topic of discussion. This literature review explores both sides of past and most current research available.

Historical overview. Friedrich Froebel was an innovator in early education. He was the first to create a kindergarten program in Germany in 1837 (DeCicca, 2005, p. 11). He believed that students learned through nature by observation, exploration, expression, and “employing philosophies of unity and interconnectedness” (Brannon, 2007). He was the first to understand

that the optimum learning time for the brain is from birth to five-years of age. Before Froebel opened the first kindergarten class, children did not begin school until they were seven-years-old.

The first kindergarten class emerged in the United States in 1856 in Watertown, Wisconsin. One hundred years later, kindergarten was a commonplace all over the U.S. About 53% of students attended kindergarten in 1958, and eleven years later in 1969 that percentage almost doubled to 92% (Dombkowski, 2001, p. 540).

Kindergarten was originally a full-day program until World War II. During WWII there was an increased need in the work force. Because the men had gone off to war, it left a deficit in the labor force. Women began taking jobs in the industries to make up for the shortfall. And since typically teachers were women, they were needed as well. Half-day kindergarten grew in popularity because it freed up more women to work other jobs (DeCicca, 2005, p. 68). Kindergarten teachers would teach a morning class followed by an afternoon class. They would teach up to 50 students a day.

Even after WWII, HDK was still popular, mainly because there was such an increase in population with young children (i.e. Baby Boom). This allowed kindergarten teachers to accommodate the boost in enrollment by continuing to teach two classes each day and serving 50 students. It also helped keep costs down for school districts because they didn't need to hire more teachers, create space for more classes, and buy additional sets of curriculum.

However, by the 1960's and 1970's the push for FDK started to resurface again with more families having two working adults outside the home. It was more convenient and cost effective for parents to have their children in a FDK class. Policy makers saw FDK as an answer to help prepare students who were "at risk". FDK grew in popularity for both parents and policy makers because of financial and academic pressures placed on parents, students, and teachers

(DeCicca, 2005, p. 68). It was also thought that increasing the day by three hours would help children be at an academic advantage.

Full-day kindergarten programs are more popular in the Midwest and East coast with the least amount on the West coast. Full-day kindergarten programs are most often offered where there is a high poverty level and minority population because these students are seen as “at risk” students. Students who are “at risk” show academic gains; however, they are short-term especially for minority children (DeCicca, 2005, p. 67). In 1985, 67% of kindergarteners were enrolled in a HDK while only 22% were attending FDK. By 1998, there was an increase in students attending FDK from 22% to 55% while 45% were in a HDK program (Dombkowski, 2001, p. 540). According to the Education Commission of the States, 43 states mandate that HDK be offered to students while nine states require that FDK is available (Weinstein, n.d., para. 4).

Full-day kindergarten programs create more costs for districts, and this is an important factor especially with the diminishing school budgets. Costs can be incurred for transportation, curriculum, building space, teachers, paraprofessional, and other educational support (DeCicca, 2005, p. 69). However, in the 1990’s 26 states were presenting districts with financial backing to encourage the offering of FDK in their school districts.

Redefining kindergarten. Kindergarten has seen many changes since its inception in 1837. In the beginning, kindergarten was a play-based learning model. Froebel worked closely with nurses and mothers in his school because he felt “kindergarten should not be a break with, but an extension of the home” (Donofrio, 1989, p. 11). When kindergarten was introduced in the United States in 1856, kindergarten looked very similar to Froebel’s original kindergarten. However, the shift really started in the 1960’s when there was a push to lengthen the school day

because of working parents, changing society, realizing the importance of early education, and research showing a longer day helps students academically (Morrison, 2009, p. 306-307). Then in the 1980's, policy makers and educators started to push for a more academic kindergarten due to a report, "A Nation at Risk", published by National Commission on Excellence in Education (The National commission of Excellence in Education, 1983). "The report pointed at mediocre school achievement and advocated for higher expectations, lest we sink in world status" (Gallant, 2009, p. 21). Additionally, Our SAT scores saw a decline between 1968 and 1980.

A new movement began with the U.S. government in 1981 which drove the U.S. to a "back to basics" approach. This put a heavy emphasis on mathematics and reading to help increase the country's SAT scores (Brigit, 2012, para. 9). This created a trickledown effect from the higher grades, with higher expectations being passed down to kindergarten in order to keep up with the new rigorous standards and curriculum.

If one would have walked into a kindergarten classroom 50 years ago, one might see students playing, napping, painting, or having snacks. Today one will find students in literacy circles, leveled reading groups, working with manipulatives to calculate addition and subtraction problems, or learning to write simple paragraphs at any given part of the day. This is a far cry from the way the inventor of kindergarten, Friedrich Froebel, envisioned the beginning years of learning to be. Today teachers have curriculum, pacing guides, and standards to reach.

The overall theme of the U.S. since the 1980's is: Education is the key to success. Teachers used to have the freedom of driving their curriculum. Clinton, during his term in 1993, asked for the U.S. to voluntarily have fourth graders take reading tests and eighth graders take math tests. Then during Bush's term in 2001, he established the 'No Child Left Behind' Act. This placed accountability on schools and tied it to federal funding. If schools didn't perform

and meet the standards, federal money was taken away from their school (Brigit, 2012, para. 9). This transformation has taken place to keep up with our economy and the emphasis on education. Policy makers push for a FDK program because they believe it helps close the achievement gap, allows the U.S. to be more competitive globally, and will alleviate remedial costs by boosting academic performance in an extended day (DeCicca, 2005, p. 69).

Policy makers have moved away from the Froebel kindergarten model that this country started with, to maintain the U.S. academically competitive edge in the world economy by helping our students get an early and strong start in their academic careers. Japan is one country the U.S. continues to compete with. Interestingly enough, Japan continues to value and carry out Froebel's pedagogy method in their schools (Jeynes, 2006). The U.S. classrooms have become less play oriented and more work based. The debate continues on which style is best for the U.S. young learners and what better prepares them for a successful academic career. In the meantime, the U.S. continues to research and analyze data on instructional minutes and its effects on its students in the kindergarten classroom.

Many studies have been conducted on the comparison of the FDK and HDK. Some researchers have studied the emotional side of kindergarteners in an extended day and the effects on their behavior in the classroom. Other researchers study the academic effects of the child by comparing test scores and compare HDK and FDK. Some studies have been studied over longer periods to see if the results are lasting or if they wane over the years.

Negative findings for full-day kindergarten. Long-term learning effects are less available and inconsistent with the effectiveness of the FDK compared to HDK. By the beginning of first grade, the positive effects of the students who attended FDK were gone. When observing the results from the Comparing Longitudinal Academic Achievement of Full-Day and

Half-Day Kindergarten Students study, it is important to take into account some of the variables, such as: school culture, school procedure, and curriculum (Wolgemuth, Cobb, Winokur, Leech, & Ellerby, 2006). The study compared analogous samples from HDK and FDK students a number of years after they completed their kindergarten year. The study examined the students' scores in math and reading in grades 2nd, 3rd, and 4th. The study revealed scores from the FDK were higher but faded by the end of first grade.

In another study, Cress and Davies evaluated HDK and FDK with 16 case studies. Each case study was originally in an HDK or FDK classroom; when the school year was over, the researchers continued to follow the students. The researchers continued to monitor the students' progress for up to three years after being in kindergarten. The researchers studied the effectiveness of the two programs, HDK and FDK based on the students development in the subsequent grades. Cases 1 and 2 only looked at kindergarten data. Cases 3-6 compared the scores from the kindergarten samples at the beginning of first grade and at the end of the first grade school year. In all cases, there was no discernible difference in the students' scores at the end of first grade whether they attended FDK or HDK. In Cases 7-11, with the exception of 7, data from the students that attended FDK and HDK was collected at the end of first grade and at the end of third grade. Case 7 scores were only collected at the end of first grade. Benefits from full-day kindergarten had diminished by third grade according to Randall Davies and Susan Cress. The study emphasized that the quality of the program had a greater outcome on student achievement than increasing minutes in the academic day. Cases one and two, by the end of the study, seemed to not have an advantage in either program (Cress & Davies, 2010).

Students in both FDK and HDK were prepared for 1st grade. One through sixteen cases had the same outcome with the exception of two cases (11 and 16), where the higher

achievement came from HDK day instead of FDK. Results acquired from ten of the sixteen case studies, had an outcome of little difference in the program curriculum between HDK and FDK. Both programs seemed to be providing an HDK program when minutes were added and compared. Providing FDK for disadvantaged children was successful, and it helped FDK students catch up who had not had the opportunity to be in a learning environment prior to beginning kindergarten. But the results were short term, most times disappearing before the students entered into the first grade. In instances in extreme poverty or disadvantaged living situations, FDK didn't seem to begin to close the achievement gap. When capable students are given the opportunity to learn, whether it is full or half day, they accomplish what is required of them. A student's ability to learn is important to take into account. Even if students have an opportunity to learn, if they aren't developmentally ready or cognitively able, FDK could have a detrimental effect on a child's motivation. It can give students a negative feeling towards school if they are expected to spend additional time on academics. Providing FDK will not fix the challenges surrounding student learning or decrease the achievement gap long term (Cress & Davies, 2010).

Positive findings for full-day kindergarten. Brannon surveyed parents on their perception of FDK and HDK and how it actually compared to the achievement of the two programs. He found that the parents' views on FDK or HDK didn't necessarily take achievement into consideration. Brannon wrote that children are attending a full-day kindergarten program 60% of the time, lasting between five and six hours (2007, p. 1). School districts are spending millions of additional dollars to fund these programs. There has been a rise in dual family earners in the last decade. Because of changes in the American family structure, more families prefer full-day kinder programs because of childcare and transportation issues.

Parents' perceptions of their children's maturity level played a big role in whether they enrolled their child in a full- or half-day program. Also playing a factor was the presence of a parent in the home. There was a considerable difference in scores at the end of kindergarten between full-day and half-day students with the full-day scoring higher. However, by the end of first grade, there wasn't any significance in the scores between the two programs. According to the surveys, both parents and teachers felt full-day allowed children to discover their interests, to be more creative, and the program seemed more relaxed. It has more to do with whether the curriculum is engaging and developmentally appropriate and the teacher is effective, than if it is a full-day or half-day kindergarten program (Brannon, 2007, p. 3).

According to Zvoch, Reynolds, and Parker (2006), kindergarten and student literacy growth had the greatest gain with economically disadvantaged children. They studied literacy outcomes on kindergarteners in socioeconomically (SE) disadvantaged schools in a large southwestern school district. The nation currently has 65% of its students attending full-day kindergarten. The increase in FDK options have occurred due to stake holders and heightened school accountability and increasing evidence that early intensive instruction benefits students (Zvoch, Reynolds, & Parker, 2006, p. 105). In this study, kindergarteners in FDK were somewhat older than HDK students. In their study, they did find that students in SE disadvantaged school who attended a FDK program had greater literacy gains than their HDK counterpart. However, if class sizes were larger, achievement did not increase significantly (Zvoch, Reynolds, & Parker, 2006).

Lee, Burkam, Ready, Honigman, and Meisels, conducted a wide-spread study that included over 8,000 students from 500 US public schools from around the Country (2006). They did not focus on socioeconomic status but on academic development in mathematics and literacy.

They found that HDK was more prevalent and was the norm on the West coast than any other part of the country. They analyzed data from two academic domains: mathematics and literacy. After collecting the data and breaking it down, some themes started to present themselves. Full-day kindergarten was more likely to be in larger cities and was more likely to be in SES disadvantaged areas. The researchers concluded from their study that children from impoverished homes and schools enter school “at risk”. However, at the end of kindergarten, the FDK students’ test scores were equal to the HDK in literacy and just slightly lower in mathematics. The researchers observed that students who were enrolled in FDK sustained their achievement through third and fourth grades. “At risk” children (based on SES) who completed the FDK program had positive effects; while white, middle class students showed no differences in scores when compared to HDK. The gains that were made by the “at risk” children were short term, lasting only through the third and fourth grades. The study also found that girls scored slightly higher in literacy than the boys in the FDK program. First time kindergarten students had more academic gains and sustained them at a greater rate than kindergarten students who were in their second year of kindergarten because of retention. In this study, the FDK classrooms had 1.3 more hours in mathematics and 1.2 more hours in reading a week than their HDK counterparts. They did find, however, that the literacy gap continued to widen over the years between lower class students and their middle and upper class peers (Lee, et al., 2006). The researchers believe after conducting their study that, “These descriptive differences suggest that full-day kindergarten may be intended as a compensatory program for at-risk children in public schools” (Lee et al., 2006, p. 186).

Summary of Major Themes

Much of the current research on lengthening the day for kindergarten, in regards to the academic achievement, shows that at a minimum there are no gains, and at a maximum, gains are seen across the board in all scholastic areas. The studies have conflicting results to the extent of how long the gains are maintained. Some say they are only retained through the end of the kindergarten school year. Other studies say by the end of first grade, no difference is seen among the scores of the students that attended a FDK or HDK program. Additional studies suggest that intellectual gains can continue through the early elementary years but seem to wane beyond third and fourth grade. There are varied results on the influence of an extended day for students who enter kindergarten at an academic disadvantage, whether from an impoverished family, with no previous school experiences, entering as an English Language Learner, or with fewer opportunities to learn. After looking at many results from both FDK and HDK, it is not definitive that an extended kindergarten class will help close the academic gap.

How Present Study Will Extend the Literature

This study investigates middle class, rural schools in two Northern California towns to see if there is a correlation between increased minutes in a kindergarten classroom and achievement in students. The study examines a full-day kindergarten classroom compared to a half-day kindergarten classroom and the effects on the academic performance of the students. An assessment evaluating letter recognition and letter sounds was given to all students at the end of the first trimester in November and at the end of the third trimester in May, and students' scores from the HDK and FDK were compared. The students were given the same assessment three times in the school year: beginning, the middle, and the end of the school year. The results of this study can help educators and districts that are researching the benefits and deterrents of implementing either a half-day or full-day kindergarten program.

Many studies have been conducted all over the country comparing kindergarten programs; however, this particular study is unique in that it is comparing kindergarten programs in California. California is unique when looking at studies comparing FDK and HDK because there are a high number of HDK programs in California. This study will assist other researchers looking at the advantages and detriments when comparing FDK and HDK programs. With the State of California making a switch from Content Standards to Common Core by 2014, districts might be evaluating their current kindergarten program and its effectiveness. Since the majority of HDK programs are concentrated on the West coast, this evaluation will be especially important in California.

Methodology

The amount of time children should spend in the classroom during their first formal experience in school has been debated for over fifty years. Many believe that more time spent in the classroom will improve academic scores while others believe young, kindergarten-aged children need to learn through play, observation, and trial and error, outside the classroom. This study compared a HDK program and FDK program to determine if more time in the classroom increased kindergarten students' academic scores.

California State Standards require all students in kindergarten to recognize all upper- and lower case letters, the sounds associated with them and to be able to recognize all numbers up to 30 by the end of the school year ("California State Standards," 1997, p. 1). The two schools that were compared did not use the same assessment, but did assess the same skills. A pre- and posttest were given to the two classes, HDK and FDK. Three scores were collected for each student for both the pre- and post-test. Each child had six scores, three from the pretest and three from the posttest. The scores were for uppercase letters, lowercase letters, and letter sounds.

Sample and Site

The students in this study were assessed four times during the school year. The students were given the same test all four times, assessing letters and letter sounds. The benchmarks increased each time the test was administered with the ending benchmark being equal to the Kindergarten State Standard for California 1.6 and 1.14. The pretest was administered at the beginning of the school year while the posttest was given to the students at the end of the school year. Students' growth was measured and tracked on data spread sheet. School A is the treatment group, offering FDK, while School B is the control group offering HDK.

In the annual STAR test school report, School A reported 433 students in 2011 with 147 of them being socioeconomically disadvantaged and 92 of the students being ELLs. School B reported 339 students being included in the API score for 2011 with 125 being socioeconomically disadvantaged and had 23 ELLs. The API scores for Schools A and B were 831 and 842, respectively.

The schools compared in this study were both rural schools, located in Northern California. School A is the treatment school while School B was the school being compared. School A's town had a total population of 42,236 and School B had a population total of 3,771, according to the latest census report (*American towns*, n.d.). In School A, scores were collected from one kindergarten class with a total school population of 571. School B, also had scores compiled from one kindergarten class with a total school population of 493 as reported from California Department of Education (*California Department of Education*, 2011). There were 24 students in School A's participating kindergarten class while School B's participating kindergarten class had 21 students. Three z-tests were conducted to ensure the two groups being compared were comparable but only two were usable because the English Language Learner students represented by k for HDK was less than 5 and could not calculate a p score. In comparing the ethnic breakdown of the two schools, the research found no significant difference between the proportions of Hispanic students in each school ($z = .181$, $p = .8564$) as well as for the proportion of Caucasians ($z = -.973$, $p = .3306$).

The scores collected for the study were taken from each of the students in the two kindergarten classes from the school year 2012-2013. Details about the data collected are discussed below.

The FDK classroom in School A began at 8:15 and ended at 2:00. The total instructional minutes for the FDK class were 300 daily. There were a total of 24 students in the class. The FDK class had 0 African Americans, 0 American Indians, 0 Asians, 1 Filipino, 6 Hispanic/Latino, and 13 Caucasians. There were two second-year kindergarteners. The class had 11 males and 12 females enrolled. The FDK classroom being compared had 5 ELL students and 2 students on IEPs (individualized educational plans) for speech. The FDK classroom did not have aide support, but did have parent volunteers four days a week for 60 minutes each day.

The HDK classroom in School B began at 11:05 and concluded at 2:45 daily for a total of 220 minutes of instruction every day. There were 22 students in the HDK classroom. The HDK class has 0 African Americans, 1 American Indians, 0 Asians, 1 Filipino, 5 Hispanic/Latino, and 15 Caucasians. There were no second-year kindergarteners. The class had 9 females and 13 males. The HDK class had 3 ELL students and 2 students on an IEP for Speech. The classroom received 60 minutes daily of instructional aide assistance. The HDK classroom had six regular, weekly volunteers. The HDK classroom had two volunteer spots available on a daily basis. The first shift was a 45-minute shift and the second was a 60-minute shift. Tuesday through Thursday volunteer shifts were filled, while Monday and Friday only the 60-minute positions were taken.

The data from the students in the kindergarten classes in the two schools were compared to see if there was a correlation between more time in the classroom and increased academic performance in the students' scores. The teacher from the kindergarten classroom from School A met with the researcher and provided the data from the pretest and posttest.

Access and Permission

The scores from the HDK subjects in this study were part of the researcher's classroom. The treatment group, FDK subjects' scores were obtained through permission from the principal from School A with a letter, allowing the use of the information in the three areas from each of the kindergarteners in the study. The identities of the students were protected by the researcher by only using their scores. The teacher from the FDK classroom read the scores off for each of the topics for each student. The researcher never saw the names of the students but entered their scores into an excel file for both the pre- and posttest. The Dominican University Institutional Review Board for the Protection of Human Subjects granted permission, for the research in the classroom.

Data Gathering Strategies

The scores from the students in two different kindergarten classrooms were compared. The teacher from each classroom performed a pre- and posttest with each kindergarten student individually. The pretest (baseline) was administered at the end of the first trimester in November 2012. The posttest assessment was given to each child at the end of the trimester in May 2013. Each child was given an ID number to keep his or her identity anonymous and confidential. The teachers placed all 26 letters in upper- and lowercase form in random order, in front of the student while the student identified the names of the letters. The teacher had a record sheet and recorded the correct and incorrect answers. The score was tallied against the total correct score of both upper and lower-case letters. The teacher then assessed the same child on letter sounds. The child pointed to each of the letters on the random-letter-order sheet while the teacher documented the child's answer on the record sheet. A score was calculated on the number of correct sounds out of twenty-six sounds. Long-vowel sounds are not required of

kindergarten students, along with the hard sound for g (j) and c (s). The teachers of both classrooms then registered each child's three scores on a master whole-class record form.

Each teacher performed the same assessments four times a year for report card reporting, but this study will only examine the beginning-of-the-year pretest and the end-of-the-year posttest scores for the children. The teachers assessed each child with the same assessment. The letters are also presented to the child in the same random order each time they are evaluated.

The researcher then obtained the data scores for each child for reporting periods, pre- and posttest. The researcher then entered in both scores for each student for uppercase letters, lowercase letters, and letter sounds. Each child had six scores total, three scores for the pretest and three scores for the posttest.

Data Analysis Approach

Once the data was gathered and entered into the two groups, HDK and FDK, the scores were arranged in four categories: overall scores, uppercase, lowercase, and letter sounds. Because of the pre-existing differences of the classrooms, ANCOVA tests were used to evaluate the results for each of the four tests mentioned above. The scores for each of the students was entered into an excel spreadsheet. Four tests were performed and each student had two scores per test. Each child from the HDK and FDK programs ended up with six scores total. The first test was to determine the overall scores for each student in both the FDK and the HDK. This ANCOVA test was completed to compare the individual students in the two classrooms, using the average scores for each student for the school year. Each child had two scores, beginning-of-the-year and end-of-the-year. The second test completed compared the uppercase letters. The third ANCOVA test compared the lowercase letters and the fourth compared the letter sounds.

The study compared the scores from the FDK to the HDK to see if there was a significant difference in the academic performance of the students who received more hours in their academic day. The average scores for each of the four tests were compared to see if there was a correlation between the hours a child spent in the classroom and his or her scholastic success. The data was examined and compared through the ANCOVA tests performed. The independent variable was the number of instructional minutes while the dependent variable was the academic achievement.

Ethical Standards

This study adheres to Ethical Standards in Human Subjects Research of the American Psychological Association (Publication Manual of the American Psychological Association, 2009). Additionally, the project was reviewed and approved by the Dominican University of California Institutional Review Board.

Findings

This study focused on the number of instructional minutes kindergarteners spent in the classroom and compared it to their academic progress for the school year. Four ANCOVA tests were performed, using the data from three assessments given to the kindergarteners at the beginning- and end-of-the-school year. The fourth ANCOVA test used all the scores combined from each of the assessments for each child to receive an overall score. The ANCOVA tests that were performed were: overall scores, upper- and lowercase letters, and letter sounds. This study did not find an overall significant difference in the academic achievement of the students when comparing the number of instructional minutes students spent in the classroom. When the data was disaggregated by sounds and uppercase letters there was also no significant difference found when comparing the two classrooms. However, when the data was disaggregated by lowercase letter scores, the ANCOVA test did show a significant statistical difference, shown in Table 5.

Description of Site and Individuals

The school sites of this study are an elementary school (kindergarten through sixth grade) in a middle class rural, Northern California small town. School A offers a FDK program for the students; the students spend 300 academic minutes in the classroom. School B has a HDK program and the students spend 220 academic minutes in the classroom. The independent variable in this study was the academic hours in the school day and dependent variable was the student's achievement. The pretest and posttest scores for lowercase, uppercase, and sounds for each child were grouped by FDK or HDK. The scores were then compared.

The schools involved in the study used state adopted curriculum for both language arts (LA) and mathematics. School A used Houghton Mifflin for LA while School B used Scott Foresman for LA. Both programs are aligned with the California content state standards for

kindergarten. Both programs do a quick preview of all letters in the first three weeks of school and then introduce letters in a set order, one per week. The programs did not follow the same set order with every letter, but for the most part they were very similar.

The full day kindergarten classroom had approximately 23 students while the half day kindergarten classroom had 22 students. The FDK classroom had 11 males, 12 females, 5 ELL students, 6 Hispanic/Latino, one Filipino, and 13 Caucasians. The HDK classroom included one American Indian, 1 Filipino, 5 Hispanic/Latino, and 15 Caucasians. The HDK classroom had 9 females and 13 males. A student from the FDK was excluded because he did not begin the school year; hence there were no beginning of the year test results.

Description of Data

A possible score for each of the three tests preformed (uppercase, lowercase, and letter sounds) was 0 to 26. Table 1 shows the average score for the students at the beginning of the year. The average score for School A (FDK) was 18, School B (HDK) averaged 21. The average score at the end of the school year for School A was 25; School B averaged 26.

Table 1

Kindergarten Beginning and Ending Average Classroom Scores

	Beginning Scores	Ending Scores
School A (FDK)	18	25
School B (HDK)	21	26

Students who scored between 24 and 26 on the end-of-the-year assessments were proficient in letter recognition. Students from School B scored slightly higher than School A at the beginning and end of the school year.

Four ANCOVA tests were performed using the data from the beginning of the year and the end of the year for the following assessments: uppercase letters, lowercase letters, letter sounds, and overall scores from each classroom. A p value was found for each of the four tests. The p value was used to accept or reject the hypothesis. Table 2 shows the overall scores for each student in their classroom.

Table 2 illustrates that although School B had slightly higher scores at the beginning of kindergarten, there was no statistical significance difference between the FDK and the HDK scores because the p value was 0.333.

Table 2

Kindergarten Overall Scores from FDK and HDK

Source	SS	df	MS	F	P
Adjusted Means	1.12	1	1.12	0.96	0.332797
Adjusted Error	48.92	42	1.16		
Adjusted Total	50.03	43			

Table 3 compares the scores of School A and B from the upper-case letter assessment given at both the beginning and end of the year. In this test, there was no significant difference found between the FDK and the HDK because the p value is 0.710.

Table 3

Kindergarten Uppercase Letter Assessment from FDK and HDK

Source	SS	df	MS	F	P
Adjusted Means	0.01	1	0.01	0.14	0.710163
Adjusted Error	2.73	42	1.16		
Adjusted Total	50.03	43			

Table 4 presents the data findings from the letter sounds assessment given two times during the school year, the beginning and the end. In this ANCOVA test, the difference was not statistically significant because the p value is 0.0999.

Table 4

Kindergarten Letter Sounds Results from FDK and HDK

Source	SS	df	MS	F	P
Adjusted Means	1.48	1	1.48	5.17	0.028154
Adjusted Error	12.01	42	0.29		
Adjusted Total	13.49	43			

Table 5 shown below, shows the results from the lowercase letter data from both the FDK and HDK classrooms. The assessment was given to all of the students at the beginning and end of

the school year. In this case, the difference was statistically significant for FDK because the p value is 0.028.

Table 5

Kindergarten Lowercase Letter Sounds Results from FDK and HDK

Source	SS	df	MS	F	P
Adjusted Means	1.48	1	1.48	5.17	0.028154
Adjusted Error	12.01	42	0.29		
Adjusted Total	13.49	43			

Inferential Analysis

One research question was addressed in this study, focusing on the number of academic minutes students spend in the classroom and if it has a positive effect on student learning. This study looked at the overall progress of the students in a full-day kindergarten program and a half-day kindergarten program. It also disaggregated the data into the individual assessments (uppercase, lowercase, and letter sounds) given to the students at the beginning and end of the school year.

The research question was “Will kindergarten students’ scores be positively impacted with more academic minutes in the school day?” With the four ANCOVA test performed, only one was found to have a significant difference. The one test that found significant difference was the one which focused on lower-case letters with a p value of 0.0281. The overall ANCOVA test that compared the average scores of each student from the FDK and the HDK classes did not

find significant statistical difference whether the child was enrolled in a full-day or half-day kindergarten class.

Discussion

The purpose of this study was to compare the academic progress of students enrolled in a half-day-kindergarten class versus a full-day-kindergarten class. The overall results, when comparing each individual student's average scores from both FDK and HDK, shows no difference in academic achievement. In fact, when the data is disaggregated by test type, only one of the three tests shows significant difference. The results from this study confirm the hypothesis that students enrolled in a HDK program will perform equally as well as FDK students. Although this study has size and scope limitations, it does provide a valuable contribution to relative academic value of FDK versus HDK.

Comparison of Findings with Existing Studies

This study did not find an effect on the students' overall academic achievement based on the number of minutes a student spent in the classroom. This study only analyzed students' scores on three tests given in kindergarten two times during the school year. When comparing learning minutes and academic progress, many studies found that students didn't necessarily perform greater after spending longer days in kindergarten. Davies and Cress (2010), the study emphasized that the quality of the program had a greater outcome on student achievement than increasing minutes in the classroom. This study supports these findings that a HDK program can be as effective as a FDK program. Lee, et al. compared minutes and academic achievement; results were found to have a positive effect but weren't sustained for a long period. Zvoch's, et al. (2006) study also found a positive relationship with academic minutes and progress but only in SE disadvantaged children.

There is an important comparison to be made with this study and the studies from the literature review. The academic minutes spent in the classroom for a kindergartener isn't the

only factor to be considered for an effective program. A HDK program can be just as effective as a FDK schedule.

Limitations of Study

There were some limitations to this study that could have affected the results. One of the limitations to the study is the small sample size. Because the scores were only collected from two classrooms, this study is not a nationally represented sample. The scores used from this study included middle class, rural schools and the results might have been different with all socioeconomic groups being represented. Both teachers tested the same material but used different state adopted curriculum and this could have had an influence on the results. This study only looked at student progress based on the minutes attended each day whereas other studies additionally looked at socioeconomics in relation to academic progress. Only three areas in language arts were focused on in this study while other studies examined several academic areas.

Implications for Future Research

Future research could be done at the school site study by following the students beyond kindergarten to chart their progress. As the state begins to shift from State Standards to Common Core, the school sites could continue to evaluate the incoming kindergarteners to see if the heightened expectations affect students' progress. The school sites could also poll the parents on whether their child attended preschool prior to entering kindergarten. Parents could also be polled on how much time they spend reading with their child. If the schools continue with the study, they could use the information to not only guide them in the decision to extend the kindergarten day or not but also to observe the importance of preschool.

Other implications to a kindergartener's success could be the amount of days s/he spends in the classroom. This study could be broadened by looking at the attendance of students who

are enrolled in both programs to see if there is a difference between the two programs, HDK and FDK. In the study of Parents' Perception (Brannon, 2007), more families prefer FDK due to childcare and transportation issues with the majority of families having both parents out of the home and in the working force (Brannon, 2007, p. 3). The study could look at the attendance patterns of both programs and examine if one has a better attendance rate over the other. Schools have been hit hard with many educational budget cuts and rely heavily on the ADA (average daily attendance) of the students.

This study shows an example of possible future studies that could be conducted all over the United States where districts still have HDK programs in place. An option to broaden this study would be to cover more academic areas and the socioeconomic status of the families. This information would provide valuable data to help schools make a decision that would best serve their school, students, and families.

Overall Significance of the Study

In conclusion, this study has shown that a HDK program is as effective as a FDK program in a middle class, rural school in Northern California. This study shows that students enrolled in a HDK who spend less time in the classroom than students in a FDK, can be academically successful and reach the language arts standards in three categories: letter sounds, upper- and lowercase letter identification. With the study providing results demonstrating that a HDK can be just as effective, the district in this study can continue to provide effective instruction while being able to teach other programs concurrently.

References

- Ackerman, D. J., Barnett, W. S., & Robin, K. B. (2005). Making the most of kindergarten
NIEER. Retrieved from <http://nieer.org/resources/policyreports/report4.pdf>
- American towns*. (n.d.). <http://www.american towns.com/ca/hiddenvalleylake/info>
- Brannon, D. (2007). Parents' perceptions of the benefits of full-day and half-day kindergarten.
International Journal of Arts & Sciences, 1-4
http://openaccesslibrary.org/images/Man3_157-2005_2_2_1-4.pdf
- Brigit (2012). Kindergarten: the changes from play to work. Retrieved from
<http://commons.trincoll.edu/edreform/2012/05/kindergarten-the-changes-from-play-to-work-2/>
- Cress, S., & Davies, R. S. (2010). *Understanding the diminishing academic advantage of full-day kindergarten* (Doctoral dissertation). Retrieved from <http://ehis.ebscohost.com/eds>
- DeCicca, P. (2005). *Does full-day kindergarten matter? Evidence from the first two years of schooling* (Unpublished doctoral dissertation). McMaster University, Hamilton, Ontario, Canada.
- Dombkowski, K. (2001, November). Will the real kindergarten please stand up?:defning and redefning the twentieth-century USkindergarten. *The History of Education*, 30, 527-545.
<http://www.eric.ed.gov/ERICWebPortal/search/>
- Donofrio, R. I. (1989). *The effects of the all-day everyday kindergarten program versus the half-day everyday kindergarten on student developmental gains in language, auditory, and visual skills* (Unpublished doctoral dissertation). Northern Arizona University, .
- Friedrich Froebel - the inventor of kindergarten. (n.d.). <http://www.froebel.com.au/en/about-froebel/friedrich-froebel/>

Gallant, P. A. (2009). Kindergarten teachers speak out: “too much, too soon, too fast!”.

<http://ehis.ebscohost.com.ezproxy.dominican.edu/eds/>

Jeynes, W. H. (2006). Standardized tests and Froebel’s original kindergarten model. *Teachers college record*, 108, 1937-1959.

<http://www.tcrecord.org/library/abstract.asp?contentid=12717>

Lee, V. E., Burkam, D., Ready, D. D., Honigman, J., & Meisels, S. (2006, February). Full-Day versus Half-Day Kindergarten: In Which Program Do Children Learn More? *American Journal of Education*, 112, 163-208. Retrieved from <http://ehis.ebscohost.com/eds>

Morrison, G. (2009). *Early childhood education today* (11th ed.). (Ed.).

<http://www.education.com/reference/article/changing-kindergarten/>

The National commission of Excellence in Education. (1983). *A nation at risk: the imperative for educational reform* (ED226006). Washington, DC: Government Printing Office.

Weinstein, A. (n.d.). Can school districts eliminate kindergarten?

<http://www.education.com/magazine/article/school-districts-eliminate-kindergarten/>

Wolgemuth, J. R., Cobb, B. R., Winokur, M. A., Leech, N., & Ellerby, D. (2006, May-June).

Comparing longitudinal academic achievement of full-day and half-day kindergarten students. *The Journal of Educational Research*, 99, 260-269.

<http://ehis.ebscohost.com.ezproxy.dominican.edu/eds/>

Zvoch, K., Reynolds, R. E., & Parker, R. P. (2006). *Full-day kindergarten and student literacy growth: does a lengthened school day make a difference?* (Masters thesis).

<http://www.sciencedirect.com/science/article/pii/S0885200607000580>

Appendix A
Beginning of the Year Scores for Each Child

Upper Case	Lower Case	Sounds	Upper Case	Lower Case	Sounds
24	19	0	26	26	20
25	24	0	25	22	16
24	24	0	24	24	25
25	23	0	26	24	25
26	26	12	26	26	21
23	23	0	23	22	23
26	26	26	26	22	26
25	26	12	26	26	26
9	5	0	26	26	25
17	19	0	26	25	25
22	23	0	26	26	23
23	22	5	20	24	25
26	26	24	26	25	26
24	24	13	21	21	11
26	23	8	26	24	18
24	19	5	25	26	13
26	25	18	26	26	24
26	23	13	26	25	18
26	26	24	26	24	24
25	21	17	25	25	23
26	25	5	18	15	15
18	13	0	25	25	23
26	22	8	24.72727273	24.04545455	21.59090909
23.56521739	22.04347826	8.260869565			
School A			School B		

End of the Year Scores for Each Child

26	25	24	26	26	24
26	26	25	26	26	26
25	26	22	26	26	26
26	26	25	26	26	26
26	26	26	26	26	26
26	26	25	26	26	26
26	26	26	26	26	26
26	26	26	26	26	26
26	26	24	26	26	26
25	24	22	25	26	25
26	26	25	26	26	26
26	26	26	26	26	26
26	25	26	26	26	26
26	26	18	26	26	25
26	26	26	26	26	26
26	25	23	26	26	26
26	26	26	26	26	26
26	26	26	26	26	26
26	26	26	26	26	26
26	26	26	26	26	26
26	25	26	26	26	26
26	25	26	26	26	26
26	23	9	26	26	25
26	25	26	25.95454545	26	25.77272727
25.91304348	25.52173913	24.08695652			
School A			School B		

Beginning of the Year Averages

Upper Case	Lower Case	Sounds	Avg.	Upper Case	Lower Case	Sounds	Avg.
24	19	0	14.33	26	26	11	21.00
25	24	0	16.33	25	22	16	21.00
24	24	0	16.00	24	24	12	20.00
25	23	0	16.00	26	24	10	20.00
26	26	12	21.33	26	26	2	18.00
23	23	0	15.33	23	22	3	16.00
26	26	26	26.00	26	22	22	23.33
25	26	12	21.00	26	26	26	26.00
9	5	0	4.67	26	26	16	22.67
17	19	0	12.00	26	25	2	17.67
22	23	0	15.00	26	26	5	19.00
23	22	5	16.67	20	24	8	17.33
26	26	24	25.33	26	25	22	24.33
24	24	13	20.33	21	21	11	17.67
26	23	8	19.00	26	24	18	22.67
24	19	5	16.00	25	26	13	21.33
26	25	18	23.00	26	26	24	25.33
26	23	13	20.67	26	25	18	23.00
26	26	24	25.33	26	24	24	24.67
25	21	17	21.00	25	25	22	24.00
26	25	5	18.67	18	15	3	12.00
18	13	0	10.33	25	25	12	20.67
26	22	8	18.67				

School A

School B

End of the Year Averages

Upper Case	Lower Case	Sounds	Avg.	Upper Case	Lower Case	Sounds	Avg.
26	25	24	25.00	26	26	24	25.33
26	26	25	25.67	26	26	26	26.00
25	26	22	24.33	26	26	26	26.00
26	26	25	25.67	26	26	26	26.00
26	26	26	26.00	26	26	26	26.00
26	26	25	25.67	26	26	26	26.00
26	26	26	26.00	26	26	26	26.00
26	26	26	26.00	26	26	26	26.00
26	26	26	26.00	26	26	26	26.00
26	26	24	25.33	26	26	26	26.00
25	24	22	23.67	25	26	25	25.33
26	26	25	25.67	26	26	26	26.00
26	26	26	26.00	26	26	26	26.00
26	25	26	25.67	26	26	26	26.00
26	26	18	23.33	26	26	25	25.67
26	26	26	26.00	26	26	26	26.00
26	25	23	24.67	26	26	26	26.00
26	26	26	26.00	26	26	26	26.00
26	26	26	26.00	26	26	26	26.00
26	26	26	26.00	26	26	26	26.00
26	26	26	26.00	26	26	26	26.00
26	25	26	25.67	26	26	26	26.00
26	25	26	25.67	26	26	26	26.00
26	23	9	19.33	26	26	25	25.67
26	25	26	25.67				

School A

School B

24	26
25	26
24	25
25	26
26	26
23	26
26	26
25	26
9	26
17	25
22	26
23	26
26	26
24	26
26	26
24	26
26	26
26	26
26	26
26	26
25	26
26	26
18	26
26	26

upper case school
A

26	26
25	26
24	26
26	26
26	26
23	26
26	26
26	26
26	26
26	25
26	26
20	26
26	26
21	26
26	26
25	26
26	26
26	26
26	26
25	26
18	26
25	26

upper case school
B

19	25
24	26
24	26
23	26
26	26
23	26
26	26
26	26
5	26
19	24
23	26
22	26
26	25
24	26
23	26
19	25
25	26
23	26
26	26
21	25
25	25
13	23
22	25

lower case school
A

26	26
22	26
24	26
24	26
26	26
22	26
22	26
26	26
26	26
25	26
26	26
24	26
25	26
21	26
24	26
26	26
26	26
25	26
24	26
25	26
15	26
25	26

lower case school
B

0	24
0	25
0	22
0	25
12	26
0	25
26	26
12	26
0	24
0	22
0	25
5	26
24	26
13	18
8	26

11	20
16	16
12	25
10	25
2	21
3	23
22	26
26	26
16	25
2	25
5	23
8	25
22	26
11	24
18	18

5	23
18	26
13	26
24	26
17	26
5	26
0	9
8	26

sounds school A

13	13
24	24
18	18
24	24
22	23
3	25
12	23

sounds school B

Appendix B

SIGNATURE PAGE

Applicant Name: Alisha Bazzano

Project Title: Comparing Half Day and Full Day Kindergarten

Signatures:

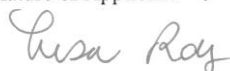
I acknowledge that all procedures will meet relevant local, state, and federal regulations regarding use of human subjects in research. I am familiar with and agree to adhere to the ethical principles in the conduct of research with human subjects as set forth by the Dominican University of California IRBPHS Handbook.



Signature of Applicant

4.13.13

Date



Signature of Department Chair

5/6/13

Date



Signature of Faculty Advisor*

5/6/13

Date

Signature of Dean of School**

Date

*Your signature indicates that you accept responsibility for the research described, including work by students under your supervision. It further attests that you are fully aware of all procedures to be followed, will monitor the research, and will notify the IRBPHS of any significant problems or changes.

**Review by Dean is required for faculty researchers but not for student investigators unless this is a procedure of the School within which the student is majoring.

Please print and scan this signature page for your file and return electronically to casey.halcro@dominican.edu or in person to Casey Halcro in Guzman 210.