Introduction
The funding from this grant supported the development of teacher candidates in the department of Education at Santa Clara University, specifically as this related to Latina/o parent outreach and support. These teacher candidates’ participation was rooted in their desire to support the literacy development of young learners and better prepare them for school expectations. The teacher candidates and the faculty lead created an intervention that involved iPads, parent training, Spanish Applications (Apps), and young learners. Over the course of 3 months, parents met with the research team, reviewed Apps that could provide development in Spanish literacy for young learners then went home and introduced the apps to their children whom utilized these Apps. We measured parent sense of efficacy with technology, child’s early literacy abilities before and after the intervention and found significant growth in both areas.

In Winter quarter (2015), additional parents were willing to participate and they brought their device to sessions. We continued to provide Saturday sessions for parents, downloading Apps for them to use with their children. This process continued on into Spring Quarter (2015), where we received additional assistance from teacher candidates that wished to participate in the research project.

Below a description of project activities, deliverables, and findings are offered as the final report for the grant activities.

Project Activities
During Fall quarter 2014 the faculty lead along with 3 graduate students from the Department of Education met to develop instruments, research Apps and device a plan to deliver support for parents residing in the greater Washington area.

Instrument Development. Three instruments were developed to gauge the efficacy of the intervention: a.) Parent Technology Efficacy Survey; b.) Parent Technology use Interview and; c.) Child literacy Assessment. These instruments are attached to this report.

The Parent Technology Efficacy Survey comprised of 17-Likert Scale items that gauged parent sense of ability to use technology and to use it to support the educational experience of their children. The instrument scale included a:

“YES!  Yes  no  NO!”

continuum and included items as; “I enjoy learning about technology” “When I hear the word technology, I have a negative feeling”. These items were administered in Spanish given parent participants were all Spanish-dominant speakers.
We administered this survey at the onset and end of the three-month period of the intervention.

The Parent Interview consisted of 13 open-ended questions that gathered demographic information about parents, their literacy activities with children, familiarity with technology. We asked questions as “What does it mean for a child to be educated?, Do you have a computer, iPad, Smart phone at home? Do you use them primarily in Spanish or English?, Do you use them for educational purposes?”

We administered the interview at each of the four meeting we had with parents.

The Abriendo Puertas PreK Assessment included 5 sections, each gauging the various literacy abilities of the children involved in the study. The sections included:

1. Name Writing
2. Upper Case Letter Recognition
3. Lower Case Letter Recognition
4. Letter Sound Recognition
5. Print and Word Awareness

We administered this assessment at the onset and end of the three-month period of the intervention. The assessment was administered in Spanish and the content was regarding Spanish literacy.

App Research. At the onset of the fall quarter 2014, the faculty lead and two research assistants conducted a search for Apps available in Spanish and that would support literacy development for children at the Pre-Kindergarten level. We identified the following as viable Apps that were introduced to parents:

- Mon Alphabet
- Caligrafia
- Letter Book
- Letter Workbook: Learn to Write the Alphabet in Spanish
- Duolingo
- Notability
- itouchLearn Words: Speech & Language Skills
- Shapes Toddler Preschool
- Skype
- Kandoobi
- Peekaboo Kids
- iBooks

We vetted and purchased several ibooks for parents to use with their children. They included: Frutas y Verduras, Números, Rana Rana

Parent Professional Support. We met with parents on 4 different occasions (9/26/14; 10/24/14; 11/7/14; 12/5/14; to review use of iPads, introduce the Apps and get feedback from parents on the uses of the Apps and iPad.
During late Winter quarter (2014), additional parents showed interest and we met with parents during this quarter and the next. A total of 8 additional meetings with parents were scheduled on Saturdays during the Winter and Spring quarter.

**Participants**
A total of 11 research assistants participated in the study and 13 parents took part in the parent sessions. During Fall quarter, we began with only 5 parents. Some parents had multiple children and hence the total children that took place was 19.

**Project Deliverables**
A total of four project deliverables were outlined in the grant proposal. They included:

1. Parents will feel empowered to support the school readiness of their children and feel prepared to share their model with other parents
2. Children will develop school readiness skills related to math and reading
3. Graduate students in Education will sharpen their research skills
4. Pilot data from the study will inform the submission of research proposal to the NAEYC

*Parent Empowerment.* Gauging parent efficacy with using technology to support their child’s school readiness was captured with the survey and interview. We collapsed items related to parent efficacy regarding technology and found significant growth in parent attitudes toward the use of technology. Graph 1 below illustrates this finding.

![Graph 1: Parent Survey Results](Image)

We coded parent responses to the interviews for increased use of technology during the course of the intervention. We noted parents were more likely to name several technology mediums that they were aware of and using to support their children. One parent noted “I am getting help at my son’s library now. I know what to ask for from the librarian to help my son.” This parent participated in the project because she noted a speech problem with her son. She made reference that the iPad served as a language model for him and that she saw a dramatic increase in his speech abilities due to the use of the iPad.

A major theme from interview data was the notion that parents saw their children’s education as moving beyond just “school smart”, but being respectful to others sharing and being humble were a few words that were echoed through out the interviews.
Child School Readiness. When children were asked to write their names at the onset of the study, many experienced difficulty. Letter formation is a key skill to have upon entering school. Many children practiced writing their names in the Notability App. We saw significant results, as is illustrated below in Table 1

**Table 1: Child Name Writing**

<table>
<thead>
<tr>
<th>Name Writing</th>
<th>Pre (September)</th>
<th>Post (December)</th>
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We also saw significant development in the other dimensions of the assessment. In the graph below we illustrate findings for all the dimensions of the literacy assessment. We noted improvement in children’s understanding of early literacy skills.

**Graph 2: Child Literacy Achievement Results**
Graduate Student Research Skills. The graduate students that participated in the study were all master’s and teaching credential candidates. These research assistants learned about instrument development, data collection and data analysis. They took the lead in creating the poster that was presented at Santa Clara University and assisted with the writing of this report. They have become more critical consumers of research.

NAEYC Proposal. The research team will work this summer to submit the results for potential publication in the NAEYC journal.

Conclusion
The funding has been fruitful in supporting parents to prepare their children for school. Yet our group of 11 graduate students also were able to gain increased awareness of what Latino families bring to the educational arena, including a goal of having their children “well-educated” in their sense of this phrase, passion for supporting teachers in their work and willingness to partner with us to support our teacher candidate’s training. We will disseminate this work beyond Santa Clara University as we share results with the community of early childhood educators via the NAEYC journal and conference.
Abriendo Puertas Parent Technology Attitudes Survey

Instructions. I am going to read you some statements. I want you to point to the level of agreement you have with the statement YES!, yes, no, NO! Let's practice one together.

Practice.
Chocolate ice cream is my favorite ice cream.
YES! yes no NO!

Learning about technology is a fun activity for me.
YES! yes no NO!

I have a good feeling about technology
YES! yes no NO!

I have a hard time understanding how to use technology
YES! yes no NO!

I have had a hard time understanding technology
YES! yes no NO!

Using technology is not for me.
YES! yes no NO!

I would like to learn more about technology
YES! yes no NO!

Technology is hard for me.
YES! yes no NO!

I enjoy learning about technology
YES! yes no NO!

I think I am able to learn technology
YES! yes no NO!
When I hear the word technology, I have a negative feeling

YES! yes no NO!

I am the type of person who could

YES! yes no NO!

Technology isn’t for me.

YES! yes no NO!

When people have trouble with technology, they come to me for help.

YES! yes no NO!

Technology is an important part of my life.

YES! yes no NO!

I use technology on a daily basis

YES! yes no NO!

I enjoy using social network sites

YES! yes no NO!

I think all parents should know more about technology

YES! yes no NO!
Parent Technology Use Interview

Instructions. I am going to ask you some questions about you, technology, language and education. Feel free to ask me to repeat or clarify any question. If you don’t feel like answering a question, that is ok. This should take about 20 minutes to complete.

1. How old are you?

2. How well do you speak English? Spanish?

3. What language is used most at home? By who?

4. Tell me about your educational background? What level of schooling did you complete? Are you currently taking courses?

5. How long have you lived in the neighborhood?

6. Do you have children that attend the school? How many? What grades?

7. Why were you interested in participating in this study?

8. Are there other children that live in the home?

9. What does it mean for a child to be “educated”? 

10. What are some things that you do with your child to help develop your child’s thinking? (songs, reading the bible) [jot down any mentioned, just ask why] Is there someone else involved in these tasks? Who? Why?

11. Are any of these activities done to prepare your child for school? Which? For how long?

12. Do you have a computer at home? Ipad? Smart phone? Who uses them? For what purpose? Do you use Spanish or English to access these? Who uses in English? Who uses in Spanish?
Interview 2, 3, 4

Instructions. I am going to ask you some questions about you, technology, language and education. Feel free to ask me to repeat or clarify any question. If you don’t feel like answering a question, that is ok. This should take about 20 minutes to complete.

1. How often were you able to accomplish the iPad tasks with your child?

2. Were you the person who worked on the task with the child? If not, who?

3. Did you feel comfortable using the iPad for this purpose?

4. What made you feel comfortable? Uncomfortable?

5. How do you feel your child performed on the tasks?

6. Did your child enjoy the activities? Why or why not?

7. Which APPs did you like? Which did your child like? Why?

8. Did you use other components on the iPad? Which? For what purpose?

9. Do you feel ready to show someone else how to use these APPs?

10. Anything else you’d like to share?
Abriendo Puertas
PreK Assessment
Table of Contents

Section I.................................................................................. Name Writing

Section II................................................................................. Upper Case letter Recognition

Section II................................................................................. Lower Case letter Recognition

Section III............................................................................... Letter Sound Recognition

Section IV............................................................................... Print & Word Awareness
Name Writing

Materials:
- Paper/pencil or on iPad
- Scoring Rubric

Administration Notes:
- If child is reluctant to attempt name writing, encourage the child to “pretend” to write his/her name or collect a writing sample at a more informal time
- It is not necessary to have child draw picture of him/herself if he/she chooses not to

Instructions:
- Place the name writing section of the paper and pencil or ipad at Notability App
- Say “I would like for you to draw a picture of yourself and then write your name. When you are finished, I’d like for you to show me your name.”
- If using ipad, take a snap shot of child’s name on ipad

Scoring:
- Only score the written name
- Refer to figure below for scoring samples
- Determine which level represents the child’s name-writing skill. Record the number in the score box on the appropriate section of the summary sheet

<table>
<thead>
<tr>
<th>Score</th>
<th>Name Writing Rubric</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Name is a scribble and the picture represents both child’s picture and written name</td>
</tr>
<tr>
<td>1</td>
<td>Name is a scribble intertwined with picture. The child identifies the picture or part of the picture as his/her written name</td>
</tr>
<tr>
<td>2</td>
<td>Name is an unrecognizable scribble but name is separate from picture</td>
</tr>
<tr>
<td>3</td>
<td>Name consists of random letters and symbols. Name is separate from picture</td>
</tr>
<tr>
<td>4</td>
<td>Name consists of some correct letters and possibly some filler letters or symbols. The name is separate from picture</td>
</tr>
<tr>
<td>5</td>
<td>Name consists of many correct letters with no filler letters or symbols. The name is separate from picture</td>
</tr>
<tr>
<td>6</td>
<td>Name is generally correct and is separate from picture. Some letters may be written backwards or name may be completely written in a mirror image</td>
</tr>
<tr>
<td>7</td>
<td>Name is correct with no backwards letters or mirror image writing. The name is separate from picture</td>
</tr>
</tbody>
</table>

Upper Case Alphabet Recognition
Materials:
- Upper case alphabet recognition page
- Child summary sheet

Administration Notes:
- Use a piece of paper to show only one line at a time for those children who may be distracted by so many letters on the alphabet page. A card with a cut out may also be used.
- Direct the child to touch the letters in the proper sequence and make sure the child does not get off track. Some children may require some assistance with pointing. You may point to the letter yourself.

Instructions:
- Tell the child to put his or her finger on the first letter at the top of the page.
- Say “I would like for you to point to each letter. As you point to the letter tell me the name of that letter. If you come to a letter that you do not know you may say “I don’t know” and move to the next letter. Ready? Let’s begin…”

Scoring:
- Score the child’s responses on the Upper Case Alphabet recognition section of the summary sheet.
- Mark a slash through each letter the child identified incorrectly or did not identify. It may be helpful to write what the child says on the side of the paper.
- Count the number of letters that the child identified correctly. Record that number on the summary sheet.
- Only children who correctly name 16 or more upper case letters proceed to the lower case Alphabet recognition section.

<table>
<thead>
<tr>
<th>Score</th>
<th>Upper Case Alphabet Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Does not identify any letter</td>
</tr>
<tr>
<td>26</td>
<td>Identifies all letters</td>
</tr>
</tbody>
</table>

Spring Developmental range for 3 year olds 4-8; year olds 12-21
<table>
<thead>
<tr>
<th>M</th>
<th>G</th>
<th>S</th>
<th>Q</th>
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<tbody>
<tr>
<td>B</td>
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<td>K</td>
<td>E</td>
<td>I</td>
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</tbody>
</table>
Lower Case Alphabet Recognition

Materials:
- Lower case alphabet recognition page
- Child summary sheet

Administration Notes:
- Use a piece of paper to show only one line at a time for those children who may be distracted by so many letters on the alphabet page. A card with a cut out may also be used.
- Direct the child to touch the letters in the proper sequence and make sure the child does not get off track. Some children may require some assistance with pointing r you may point to the letter yourself.

Instructions:
- Tell the child to put his or her finger on the first letter at the top of the page.
- Say “I would like for you to point to each letter. As you point to the letter tell me the name of that letter. If you come to a letter that you do not know you may say “I don’t know” and move to the next letter. Ready? Lets begin…”

Scoring:
- Score the child’s responses on the Lower Case Alphabet recognition section of summary sheet.
- Mark a slash through each letter the child identified incorrectly or did not identify. It may be helpful to write what the child says on the side of the paper.
- Count the number of letters that the child identified correctly. Record that number on the summary sheet.
- Only children who correctly name 16 or more upper case letters proceed to the lower case Alphabet recognition section.

<table>
<thead>
<tr>
<th>Score</th>
<th>Upper Case Alphabet Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Does not identify any letter</td>
</tr>
<tr>
<td>26</td>
<td>Identifies all letters</td>
</tr>
</tbody>
</table>

Spring Developmental range for 3 year olds 3-5; year olds 9-17
| s | g | m | f |
| b | r | l | ñ |
| h | w | t | q |
| j | c | o | v |
| p | x | d | u |
| a | y | n | z |
| k | e | i |   |
Letter Sound Recognition

Materials:
- Letter sound recognition page
- Child summary sheet

Administration Notes:
- Use a piece of paper to show only one line at a time for those children who may be distracted by so many letters on the alphabet page. A card with a cut out may also be used
- Only children who correctly name 9 or more lower case letters proceed to Letter Sound Recognition

Instructions:
- Turn to the Letter Sound Page of the Child Packet
- Say “See these letters? I want you to tell me the sound the letter makes. Here’s an example: This is the letter ‘M’ I would say /m/ because that is the sound the letter makes. Put your finger on the first letter and tell me the sound the letter makes. If you don’t know you can skip it and go on to the next one. Are you ready…?"

Scoring:
- Score the child’s responses on the Letter Sound recognition section of summary sheet
- Mark a slash through each letter the child identified incorrectly or did not identify. It may be helpful to write what the child says on the side of the paper.
- Count the number of sounds that the child identified correctly. Record that number on the summary sheet.

<table>
<thead>
<tr>
<th>Score</th>
<th>Upper Case Alphabet Recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Does not identify any letter</td>
</tr>
<tr>
<td>26</td>
<td>Identifies all letters</td>
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Spring Developmental range for 3 year olds 3-5; year olds 9-17
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<th>B</th>
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Print & Word Awareness

Materials:
- Book on ipad
- Child summary sheet

Administration Notes:
- Use a book with large font
- Only children who correctly identify sounds of 9 or more letters proceed to Print & Word Awareness

Instructions:
- Turn to the Print & Word Awareness Child Packet

Item 1
- Holding up the book, Say “Lets read this book together. I want you to help me read it.”
- Say “show me the name or the title of the book. Point to the name of the book.”
- Score as correct if child points to title

Item 2
- Say, “The name or the title of this book is _____. Point to each word as you say the title. Point to each word in the title of this book just like I did.”
- Score as correct only if the child points to each of the words in the title separately

Item 3
- Say, “I see some little word and some long words in the name of this book.. Show me the little word. Point to the smallest word”
- If child points to just one letter in the word, the child may be prompted once: “show me the whole word.”
- Score as correct if the child points to the smallest word in title

Item 4
- Turn to page with two identical words (and, but) , “Two of the words look just the same. Can you show me the two that are alike? Point to the two words that look the same
- If the child points between the two words, ask the child to point to each word individually “Point to both words that are the same.”
- Score as correct if the child points to the two separate words

Item 5
- Turn to the first page in the book
- Say, “I am going to read some pages of the book. Watch me point to each word as I read.”
• Read page 1 and 2 aloud, point to each word
• Stop at page 3 of the book
• Do not point to any items on page 3
• Ask the following questions while looking at page 3: “Where do I start to read on this page? Show me where I start to read”
• Score as correct if the child points to the first word on page 3.