UNIVERSITY OF CALIFORNIA

Santa Barbara

Development and Validation of a Culturally Sensitive Parent Engagement Measure for Latinx and White Families

A dissertation submitted in partial satisfaction of the requirements for the degree

Doctor of Philosophy in Counseling, Clinical, and School Psychology

by

Jennifer Marie Scheller

Committee in charge:

Professor Matthew Quirk, Chair

Professor Karen Nylund-Gibson

Professor Miya Barnett

June 2022

The dissertation of Jennifer Marie Scheller is approved.

_____

Karen Nylund-Gibson

_____

Miya Barnett

_____

Matthew Quirk, Committee Chair

June 2022

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ACKNOWLEDGEMENTS

My journey through the dissertation process has presented some of the most personally and professionally challenging moments. The completion of this journey and the profound growth I have obtained as a result would not have been possible without the support of my family, friends, school partnerships, my advisor, and my committee. I would first like to thank my "almost husband" Scott Jory for the incredible amount of love, patience, and strength you poured into my cup to help me through this journey. I am deeply grateful to my parents, Myung and Jim Scheller, who have made so many sacrifices to provide me with everything I could need to thrive in graduate school (including lots and lots of food). You both have supported my dreams without question and truly believed in my abilities to achieve this lofty goal of a Ph.D. Thank you to my sister Lindsey Scheller for being not only my emotional support human but also for providing unrelenting support to sharpen my focus. To my aunt, Amy Christison, thank you for your mentorship, being my sounding board, and productivity manager. I want to thank all my friends who live outside of the academic world for their love, support, and perspective that have kept me tethered to the world beyond graduate school. I am incredibly grateful for these friendships that have sustained me throughout this process.

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part of my grad and dissertation journey. Most importantly, I want to offer my sincere gratitude to those who provided invaluable support to the research endeavors of my dissertation. I would like to express my deep gratitude to my advisor, Matt Quirk, who has provided seven years of mentorship and support for my professional development and growth. You have provided experiences that have allowed me to be part of incredible community partnerships and professional relationships that has shaped my identity both as a researcher and professional. I want to offer a special thanks to Jamie Persoon and Canalino Elementary for not only welcoming me into your beautiful community but placing trust in me to collaborate with you and conduct research. The research within this dissertation was a direct result of what I have learned and experienced within this community partnership. I am also grateful to my committee members Miya Barnett and Karen-Nylund Gibson for your belief in my abilities as a researcher and the time you have dedicated to this final milestone of mine. Thank you Karen for your endless stats wisdom and the time you have spent consulting with me regarding my analyses. Special thanks are also needed for GGSE stats peer, Melissa Gordon, who also generously shared with me her time and stats knowledge. Thank you Miya for your warmth, kindness, and shared passion for research working with Latinx families. I am so grateful to you all for your patience and unwavering belief in me to see this dissertation journey through.

VITA OF JENNIFER MARIE SCHELLER
June 2022

Phone: (650) 678 8194 3601 De Soto Ave Unit 338
Email: jscheller@ucsb.edu Woodland Hills CA, 92367

EDUCATION

2015 - 2022 **Doctor of Philosophy, Clinical, Counseling, & School Psychology**
University of California Santa Barbara
APA Accredited Program & NASP Accredited Program
Emphasis in School Psychology
Advisor: Matthew Quirk, Ph.D.

2017 **Master of Education in School Psychology**
University of California Santa Barbara

2009 - 2013 **Bachelor of Arts, Psychology**, **Cum Laude**
Loyola Marymount University
Major: Psychology; Minor: Fine Arts

CLINICAL EXPERIENCE

Doctoral Psychology Intern, APA approved **Sept 2020 – Sept 2021**
Providence Saint John's Child & Family Development Center
Olga Belik Ph.D., licensed psychologist; Ashley Silvera, Psy.D., licensed psychologist; Roccio Bravo, Psy.D., licensed psychologist, David Alvarado Psy.D., licensed psychologist

Provided individual, family, and group therapy for children (ages 4-18) and their families within community mental health outpatient clinic, school-based mental health youth development program, and early childhood and development program. Conducted psychodiagnostic assessments and provided recommendations across school, clinical, and home settings. Engaged in assessment, internship training, and professional development seminars. Conducted program evaluation research for school-based mental health programs.

School Psychology Practicum Student **Aug 2017 - June 2018**
Junior High School, Santa Barbara Unified School District **Aug 2018 – June 2019** *Supervisors: Kymberly Ozbirn, Nationally Certified School Psychologist*
Dr. Erin Dowdy, Licensed Psychologist & Nationally Certified School Psychologist

Administered, scored, and interpreted cognitive, academic achievement, language, and psychological processing assessments. Produced written psychoeducation reports and presented findings at IEP meetings to develop individual education plan and accommodations for 504 plan. Provided consultation services to parents, teachers, and school staff. Conducted designated instructional services (DIS) counseling for five junior high students. Addressed students' needs at Tier 1 levels through collaboration and consultation within student success teams and implemented academic interventions and behavior programs (e.g., a behavior plan) within a general education setting.

Mental Health Practicum Student **Aug 2017- June 2018**

Elementary School, Santa Maria Bonita Unified School District

Supervisors: Kevin Chiles, Mental Health Specialist & Licensed Clinical Social Worker
Dr. Erin Dowdy, Licensed Psychologist & Nationally Certified School Psychologist

Provided a school-based mental health services to elementary aged students receiving special education services within a special day class and therapeutic learning program setting. Addressed students' needs at Tier 2 and Tier 3 levels by providing teacher and paraprofessional consultation; small group standardized social emotional learning and social behavior curriculum; classroom social-emotional and behavioral supports; individual counseling; and crisis de-escalation and intervention. Produced case conceptualization and treatment reports.

School Psychology Practicum Student **Jan 2018 – May 2018**

Preschool, Goleta Unified School District

Supervisors: Katie Larsen & Kim Grant, Nationally Certified School Psychologists
Dr. Erin Dowdy, Licensed Psychologist & Nationally Certified School Psychologist

Conducted full kindergarten transition psychoeducational evaluation for two pre-school aged students. Administered, scored, and interpreted cognitive, academic achievement, language, and psychological processing assessments. Conducted observations and parent and teacher interviews. Produced written psychoeducation reports and presented findings at IEP meetings.

School Psychology Practicum Student **Aug 2016 – June 2017**

Elementary & Junior High Schools, Santa Barbara Unified School District

Supervisors: Rebecca Norton, Nationally Certified School Psychologist
Dr. Jill Sharkey, Nationally Certified School Psychologist

Administered, scored, and interpreted cognitive, academic achievement, language, and psychological processing assessments. Produced written psychoeducation reports and presented findings and eligibility determination at IEP meetings. Provided individual and group DIS counseling services to middle school and elementary aged students. Addressed students' needs at Tier 1 levels through check and connect intervention and universal positive behavioral interventions and support systems. Provided consultation services to parents, teachers, and school staff. Developed progress monitoring tools, collected student data and observations to evaluate academic and behavioral interventions.

Psychological Assistant **Jan 2016 – July 2016**

Hosford Psychological Assessment Clinic, University of California Santa Barbara

Supervisor: Dr. Jordan Witt, Licensed Clinical Psychologist

Provided psychological assessment services for teen and adult clients. Conducted intake interviews and administered cognitive, academic, psychodiagnostic, and neuropsychological assessments. Administered, scored, and interpreted the trail making test CTMT, Conners Continuous Performance Test II, Beery-Buktenica Developmental Test of Visual-Motor Integration (VMI), Conners III, WIAT-III, WAIS-IV, NEPSEY-II, Rey Complex Figure Test (RCFT), Rey 15-Item Test, and Stroop Test. Received training in weekly and monthly supervision meetings.

Produced written psychological assessment reports integrating psychological and neuropsychological assessment results and formulating DSM-V diagnostic impressions. Provided consultation and recommendations for client.

PROGRAM EVALUATION

Program Evaluation Graduate Research Assistant **Jan 2019 – June 2020**

People's Self Help Housing Development & University of California Santa Barbara

Supervisor: Dr. Matt Quirk, Department of Clinical, Counseling, and School Psychology

Conducting program evaluation of a public housing development after school enrichment program for People's Self-Help Housing. Collaborated and coordinated with program administrators and teachers to aggregate and organize student school performance and other relevant data. Cleaned data and conducted analysis using SPSS28. Analyzed and wrote results within a technical report. Presented technical report to stakeholders and staff of the public housing development program.

Lead Associated Students Diversity Committee Member **Sept 2017 to June 2020**

Counseling, Clinical, & School Psychology Department

University of California Santa Barbara

Developed and disseminated CCSP department diversity climate survey for graduate students. Led diversity committee in developing a system and plan to manage, analyze, and report qualitative and quantitative student survey data. Produced a diversity climate report to present survey data, implications, and recommendations to improve the diversity climate of the department for CCSP students. Conducted program development and outreach programming establishing roles, programs, and resources to support diverse graduate students. Orchestrated graduate student town halls to receive feedback and recommendations from CCSP students. Formally presented the survey report data and recommendations to separate CCSP faculty and graduate student meetings. Engaged in consultation with CCSP faculty regarding the results, recommendations, and future steps of the resulting diversity climate report. Diversity survey and report contributed to the CCSP program's APA accreditation evaluation requirements.

ACADEMIC INTERVENTION EXPERIENCE

Lead English Language Development Program Coordinator & Tutor **Jan 2015 – June 2015**

Carpinteria Unified School District & University of California Santa Barbara

Supervisor: Dr. Matt Quirk, Department of Clinical, Counseling, and School Psychology

Implemented intervention for Spanish speaking ELLs to develop English language proficiency for students who start kindergarten with the lowest English language proficiency and school readiness. Tutored kindergarteners in small groups of 4 using Language for Learning Curriculum. Recruited volunteers and coordinated volunteer schedule. Provided training and informational meetings for volunteers to use Language for Learning curriculum. Maintained correspondence with undergraduate volunteers and Canalino Elementary teachers.

Cogmed Working Memory Training Coordinator & Coach **Jan 2012 – March 2013**

Ascension Catholic School, Inglewood, CA
Supervisor: Dr. Judith Foy, Loyola Marymount University

Engaged small groups of low-income Latino/a urban kindergarten students who were academically at risk in an intervention program using CWMT that targets working memory to preempt reading disabilities and reinforce future academic success. Majority of these students were Spanish speaking ELs. Taught students how to use CWMT program, monitored students' performance within each three-game session and progression throughout the entire training, implemented a reward system, served as a support system, and guided students to success in the program. Collaborated with teachers and school staff on students' success. Helped in training and assisting new CWMT coaches.

The Bookworm Project Kindergarten Reading Tutor **Oct 2011– April 2013**
LAUSD Schools and Ascension Catholic School, Los Angeles, CA
Supervisor: Dr. Judith Foy, Loyola Marymount University

Engaged in intervention activities by tutoring one-on-one intensively with kindergarteners at risk for reading problems using evidence-based practices to strengthen early literacy skills. Tutored culturally and linguistically diverse students, many of who were Spanish-speaking ELs. Instructed students how to recognize letter names and sounds, sight words, and develop phonological awareness through reading, various literacy games, and activities. Developed students' skills in the Five Big Ideas in reading: phonological awareness, alphabetic principle, accuracy and fluency with text, and comprehension. Adapted to children's learning habits to address strengths, weaknesses, motivational, and behavioral needs. Trained and assisted new tutors.

ADMINISTRATIVE CLINIC WORK

Hosford Clinic Student Assistant **Oct 2015 – June 2016**
Hosford Counseling and Psychological Services Clinic
Supervisor: Dyan Wirt, Clinic Administrator

Managed scheduling, registration, billing, and charting modules in Electronic Health Record system PnC. Maintained commitment to patient privacy and upheld HIPAA standards. Answered phones, facilitated correspondence between clients and clinicians, greeted clients, and took client payments. Executed filing, basic word processing, copying, and scanning jobs.

RESEARCH EXPERIENCE

Dissertation: Development and Validation of a Culturally Responsive Parent Engagement Measure
August 2019-2022
Committee Members: Matthew Quirk, Ph.D., Karen Nylund-Gibson, Ph.D., & Miya Barnett, Ph.D.,
Prospectus Approved: October 2019
Dissertation Dense Approved: June 2022

Scale development and psychometric evaluation a comprehensive and culturally sensitive measure of parent engagement in student learning for both Spanish-speaking Latinx and white families.

Expected tasks: theoretical development of parent engagement framework; item development; recruitment of schools and 600 parent participants; qualitative parent interviews; pilot administration of measure to examine intra-item correlations; full data collection of researcher development parent engagement measure and demographic survey, data analysis.

Lead Graduate Research Lab Coordinator **Feb 2017- Sept 2020**
University of California Santa Barbara, Santa Barbara, CA
Supervisor: Dr. Matt Quirk, Department of Clinical, Counseling, and School Psychology

Planned and executed fall and spring data collection of 300 elementary students' Spanish and English oral language proficiency and executive functioning data. Served as oral language proficiency assessor by administering English and Spanish oral language proficiency assessments for children ages 5-10 in kindergarten through fifth grade classrooms. Trained and supervised a team of 20 undergraduate and graduate student research assistants to administer, interpret, and score oral language proficiency assessment in English and Spanish and BRIEF executive functioning assessment. Coordinated data collection between schools and assessment team. Managed student data and established scoring, interpretation, and data entry procedures. Created and implemented training for undergraduate students to enter data and serve as inter-raters for scoring and interpretation procedures. Developed research lab handbook outlining plans, system, and infrastructure for the research lab's data collection and data management. Trained incoming graduate students on data collection procedures and lab systems.

Graduate Research Assistant **Sept 2015 – 2017**
University of California Santa Barbara, Santa Barbara, CA
Supervisor: Dr. Matt Quirk, Department of Clinical, Counseling, and School Psychology

Conducted literature reviews and annotated bibliographies regarding Spanish speaking ELLs, literacy, and language development. Attended weekly lab and individual meetings. Managed English Language Development program associated with lab. Collaborated on manuscript development for publication and conference poster presentations. Collaborated with County of Education to develop a 30-minute designated ELD program. Provided County of Education with literature review of empirically supported designated ELD instructional strategies that support oral language development for Spanish speaking dual language learners. Participated in 3-hour training provided by the County of Education to train teachers in the chosen empirically supported instructional strategies. Conducted program evaluation of language development programs and collected English and Spanish oral language proficiency data for kindergarten and first grade classrooms in the Carpinteria school district.

TEACHING EXPERIENCE

Teaching Assistant for Introduction to Research Methods **Fall 2019**
UCSB Department of Clinical, Counseling, and School Psychology
Professor: Dr. Alison Cerezo

Led one weekly sections of 30 students and attend weekly lectures. Engaged students in interactive activities, led and facilitated class discussion regarding basic applied research skills. Facilitated students in developing their own research question and proposal and conducting article critiques. Prepared and presented a full lecture educating students about survey and correlation studies and basics of psychometric research. Scored and graded course assignments. Evaluated and managed student attendance and participation.

Teaching Associate for Introduction to Helping Skills **Summer Sessions A & B 2019**
UCSB Department of Clinical, Counseling, and School Psychology

Served as instructor of record for two undergraduate courses consisting of 40 students each. Developed student understanding of beginning counseling skills, theoretical orientations, and facilitated student application of beginning counseling skills to helping relationships in the community or literature. Prepared and presented lectures, engaged students in interactive activities to develop foundational helping skills, led and facilitated class discussion regarding the theoretical orientation, ethics, components of therapy, empirically supported treatment, and development of their own helping skills. Scored and graded course assignments. Evaluated and managed student attendance and participation.

Teaching Assistant for Introduction to Educational & Vocational Guidance **Winter Quarter 2019**
UCSB Department of Clinical, Counseling, and School Psychology
Professor: Dr. Melissa Morgan Consoli,

Led two weekly sections of 40 students and attended weekly lectures. Engaged students in interactive activities, led and facilitated class discussion regarding the course content. Prepared and presented a full lecture educating students about skills within a vocational context. Scored and graded course assignments. Developed and edited midterm and final exam questions. Evaluated and managed student attendance and participation.

Teaching Assistant for Cognitive Assessment **Fall Quarter 2018**
UCSB Department of Clinical, Counseling, and School Psychology
Professor: Dr. Chunyan Yang

Assisted faculty in presenting lecture material for a class of 8 graduate students. Engaged students in interactive activities, led and facilitated class discussion regarding the course content. Provided training, demonstrations, and supervision of cognitive assessments: KABC, WISC, WAIS-IV, WJ, DAS, and UNIT. Prepared and presented lectures teaching students about factor analysis within cognitive assessments, interviews for psychoeducation reports, psychoeducation report writing, cross-battery assessment, non-verbal assessment, and early childhood/preschool assessment. Scored and graded student assignments including student reports of cognitive assessment results and student scoring of cognitive assessment protocols.

Teaching Associate for Introduction to Research Methods **Summer 2018**
UCSB Department of Clinical, Counseling, and School Psychology

Served as instructor of record for 60 undergraduate students. Prepared and presented lectures, engaged students in interactive activities, led and facilitated class discussion regarding various research methodologies, design, psychometrics, and basic applied

research skills. Developed student understanding of research methods in applied psychology. Facilitated students in developing their own research questions, research proposal, and conducting article critiques and literature reviews. Scored and graded course assignments. Evaluated and managed student attendance and participation.

Teaching Assistant for Peer Helping **Summer 2016 & Summer 2018**
UCSB Department of Clinical, Counseling, and School Psychology
Professor: Dr. Tania Israel

Led one weekly section of 15 undergraduate students and attended weekly lectures. Engaged students in interactive activities, led and facilitated class discussion regarding the course content. Scored and graded course assignments. Evaluated and managed student attendance and participation.

Teaching Assistant for Introduction to Helping Skills **Winter Quarter 2018 & Fall Quarter 2019**
UCSB Department of Clinical, Counseling, and School Psychology
Professor: Dr. Miya Barnett

Led weekly sections of 40 undergraduate students and attended weekly lectures. Engaged students in interactive activities, led and facilitated class discussion regarding the course content. Scored and graded course assignments. Evaluated and managed student attendance and participation. Managed lecture attendance data.

Teaching Assistant for Introduction to African American Literature **Fall Quarter 2016**
UCSB Department of Black Studies and Department of English
Professor: Dr. Stephanie Batiste

Led two weekly sections of 25 undergraduate students each and attended one weekly lectures. Planned sections and section syllabus based upon pedagogical research literature and course goals. Implemented pedagogical training on section development, teaching strategies, facilitated section discussions and activities, cooperative learning, grading, & teaching to diverse audiences. Scored and graded course assignments and papers. Evaluated and managed student attendance and participation.

PROFESSIONAL SERVICE

Lead Associated Students Diversity Committee Member **Sept 2017 to June 2020**
Counseling, Clinical, & School Psychology Department
University of California Santa Barbara

Developed and disseminated CCSP department diversity climate survey for graduate students. Led diversity committee in developing a system and plan to manage, analyze, and report qualitative and quantitative student survey data. Produced a diversity climate report to present survey data, implications, and recommendations to improve the diversity climate of the department for CCSP students. Conducted program development and outreach programming establishing roles, programs, and resources to support diverse graduate students. Orchestrated graduate student town halls to receive feedback and recommendations from CCSP students. Formally presented the survey report data and recommendations to separate CCSP faculty and

graduate student meetings. Engaged in consultation with CCSP faculty regarding the results, recommendations, and future steps of the resulting diversity climate report. Diversity survey and report contributed to the CCSP program's APA accreditation evaluation requirements.

Associated Students Social Committee **September 2016 – 2017**
Counseling, Clinical, & School Psychology Department
University of California Santa Barbara

Planned and orchestrated department social events. Host annual graduate student events. Disseminated wide social, mental health, and physical health related events to students. Coordinate activity planning for first year graduate student orientation, research festival, admissions recruitment day, transition and recognition ceremony.

HONORS AND AWARDS

2018-2019	Counseling, Clinical, and School Psychology Alumni Fellowship
2017, 2018, 2019	Counseling, Clinical, & School Psychology Student Travel Grant
2018	Graduate Students Association Travel Grant

PUBLICATIONS

Edelman, E., Amirazizi, S., Feinberg, D., Quirk, M., Scheller, J., Pagán, C., Persoon, J. (2022). A Comparison of Integrated and Designated ELD Models on Second and Third Graders' Oral English Language Proficiency. TESOL Journal.

Edyburn, K. L., Quirk, M., Felix, E., Swami, S., Goldstein, A., Terzieva, A., & Scheller, J. (2017). Literacy screening among Latino/a and dual language learner kindergarteners: Predicting first grade reading achievement. *Literacy Research and Instruction*, *56*(3), 250-267.

CONFERENCE PRESENTATIONS

Scheller, J., Feinberg, D., & Quirk, M. (February, 2019). Bilingual Instruction: How Classroom Approach Affects Student Language Proficiency. Poster presented at the National Association of School Psychologists at the Hyatt Regency, Atlanta, GA.

Scheller, J., Feinberg, D., & Quirk, M. (August, 2018). Examining Interventions for Spanish Speaking Dual Language Learners in English Language Development. Poster presented at the American Psychological Association at the Moscone Center, San Francisco, CA.

Edyburn, K.L., Swami, S., Scheller, J., Feinberg, D., Goldstein, A., & Quirk, M. (February, 2018). Assessing Language Instruction Practices That Support Preschool Dual Language Learners. Poster presented at the National Association of School Psychologists at the Hyatt Regency, Chicago, IL.

Swami, S., Scheller, J. Contributors: Edyburn, K. L., Quirk, M., Felix, E., Goldstein, A., & Terzieva, A. (October, 2016). Early Academic Achievement and Language and Literacy Development. Poster presented at the California Association of School Psychologists, Newport Beach, CA.

Zannis, L., Medina, E., Scheller, J., Froidevaux, N., Hejran, N., Handy, C., & Judith, F. (May, 2013). *Working memory training improves inattention in kindergarteners.* Poster presented at the Undergraduate Psychology Research Symposium at Stanford University, Palo Alto, CA.

Handy, C., Hejran, N., Medina, E., Scheller, J., Zannis, L., Arrigotti, M., Froidevaux, N., & Foy, J. (April, 2013). *Working memory training improves self-regulation in academically at-risk kindergarteners.* Poster presented at the annual meeting of the Western Psychology Association (WPA) Conference, Reno, NV.

Handy, C., Hejran, N., Medina, E., Scheller, J., Zannis, L., Arrigotti, M., Froidevaux, N., & Foy, J. (March, 2013). *Working memory training improves self-regulation in academically at-risk kindergarteners.* Poster presented at the Undergraduate Research Symposium at Loyola Marymount University, Los Angeles, CA.

Foy, J., Mann, V., Handy, C., Hejran, H., Medina, E., Scheller, J., & Zannis, L. (March, 2013). *Working memory training in kindergarteners at risk for reading problems.* Poster presented at the annual state convention of the California Speech, Language, and Hearing Association (CSHA), Long Beach, CA.

PROFESSIONAL COMMUNITY & DEPARTMENT PRESENTATIONS

Scheller, J., & Akbar, K. (April, 2020). *Teacher Mindful Self Compassion and Self Care.* Santa Monica, CA.

Scheller, J., & Petrovic, L. (December, 2020). *Supporting Your Child's Learning During COVID-19: part 2 parent self-care toolkit.* Santa Monica School District. Santa Monica, CA.

Scheller, J., & Petrovic, L. (December, 2020). *Supporting Your Child's Learning During COVID-19: part 1 how to support your child.* Santa Monica School District. Santa Monica, CA.

Scheller, J., & Akbar, K. (November, 2020). *How to Talk to Kids About Race.* Santa Monica Public Library. Santa Monica, CA

Scheller, J., & Feinberg, D. (June, 2019). *People's Self-Help Housing Development Program Evaluation Report.* Presentation to the People's Self Help Housing Development Administration and Teachers. Goleta, CA.

Scheller, J., & Luis Sanchez, E. (April, 2019). *Counseling, Clinical, & School Psychology Diversity Survey Report.* Presentation to the Counseling, Clinical, & School Psychology Department. Goleta, CA.

Scheller, J., & Feinberg, D. (October, 2019). *University of California Santa Barbara Program Evaluation for Canalino Elementary School – Year Two.* Presentation of the second year Dual Language Immersion results to the Canalino Elementary Dual Language Immersion Parent Education Night. Canalino, CA.

Quirk, M., Scheller, J., & Feinberg, D. (June, 2018). *University of California Santa Barbara Program Evaluation for Canalino Elementary School – Year One.* Presentation to the stakeholders of the Canalino Dual Language Immersion program funded to Canalino Elementary by the Wendel Foundation. Canalino, CA.

Scheller, J., & Feinberg, D. (October, 2018). *University of California Santa Barbara Program Evaluation for Canalino Elementary School – Year One.* Presentation of the first year Dual

Language Immersion results to the Canalino Elementary Dual Language Immersion Parent Education Night. Canalino, CA.

PROFESSIONAL TRAINING/WORKSHOPS/DEVELOPMENT

June, 19 & 21, 2018 - University of California Santa Barbara, Department of Counseling, Clinical, & School Psychology – Dr. Maya Barnett: Parent Child Interaction Therapy Training

March 22, 2018 - National Child Traumatic Stress Network: Trauma Informed IEPs: Differential Diagnosis and Trauma-informed Assessment in Schools

March 22, 2018 - National Child Traumatic Stress Network: Integrated Evidence-Based Practices in School Interventions

March 22, 2018 - National Child Traumatic Stress Network: Cultural Considerations in Working with Latino Clients Using the Child-Parent Psychotherapy Model

March 21, 2018 – National Child Traumatic Stress Network: Cognitive Behavioral Intervention for Trauma in Schools Training

January 18, 2018 – New Vic Theater – Erika Felix, Shane Jimmerson, Tania Israel, and Some Dude: "Promoting Resilience in the Wake of Local Disasters"

June 21, 2017 – University of California Santa Barbara, Department of Counseling, Clinical, & School Psychology - Pete Flores III: "Why the Hell Are White People so Mad?" Cultural competence, implicit bias, racial and ethnic disparities in schools

April 10, 2017 – University of California Santa Barbara, Gervitz Graduate School of Education – Virginia Collier & Wayne Thomas: "Excellence & Dual Language Education"

January 18, 2017 – Santa Barbara County Education Office, Director, Literacy, and Language Support– Carlos Pagan "English Learner Network"

September 20, 2016 – University of California Santa Barbara, Graduate Division and Instructional Development Teaching Assistant Training & Orientation – "What to do if?... challenging and unexpected situations"

September 20, 2016 – University of California Santa Barbara, Graduate Division and Instructional Development Teaching Assistant Training & Orientation – "Grading Student Writing"

September 20, 2016 – University of California Santa Barbara, Graduate Division and Instructional Development Teaching Assistant Training & Orientation – "Leading Discussion Section"

October, 2016 – California Association of School Psychologists Convention – Rodrigo Enciso: "Patterns of Strengths and Weaknesses Basics: Contemporary Assessment of SLD" Skills workshop for PSW

October 10, 2016 - University of California Santa Barbara, Graduate Division and Instructional Development – Lisa Berry: "Preparing your CCUT portfolio"

May 17, 2016 – University of California Santa Barbara, Multicultural Center Graduate Division and Instructional Development – John Park, Ines Casillas, Jeffrey Stewart, Kathleen Moore, & Paul Amar: "Controversy in the Classroom: Pedagogical techniques for a divided society"

May 13, 2016 – English Learner Network, Santa Barbara County Education Office – Just Communities, ELPAC, ESSA, Matt Quirk USCB associate professor guest speaker

October 14, 2015 – University of California Santa Barbara, SAGE Center for the Science of Human Resilience – Ed Diener: "The Exciting New Science of Well-Being"

PROFESSIONAL AFFILIATIONS

September 2015 – Present	Student Member of the American Psychological Association
September 2015 – Present	Student Member of the National Association of School Psychology
September 2015 – Present	Student Member of the California Association of School Psychology

LANGUAGES

Spanish – conversationally fluent

ABSTRACT

Development and Validation of a Culturally Sensitive Parent Engagement Measure for Latinx and White Families

by

Jennifer Marie Scheller

Latinx students and their families represent a large and growing population within the U.S. education system and experience significant opportunity gaps, inequities, and barriers in pursuit of academic achievement. Parent engagement (PE) is an important mechanism to increase academic outcomes and close opportunity gaps. However, efforts to accurately measure and understand Latinx PE are inhibited by existing PE measures that are based upon euro-centric middle-class frameworks of PE that do not consider the culturally situated PE behaviors or barriers to engagement unique to Latinx parents. Deficits in PE measurement also exist for the general white population that include a lack of comprehensive and salient domains of PE that are multidimensional and contain behavioral indicators of PE that are important to PE outcomes. The present study contributes to the PE literature for elementary-aged students by developing and validating a culturally sensitive PE questionnaire (CSPEQ) to improve PE measurement in two ways 1) creating a culturally informed PE measure for Latinx families and 2) creating a comprehensive PE measure that captures multi-dimensional PE domains with salient PE behavioral indicators that could also be potentially used for White families. Factor analyses were conducted to assess whether the CSPEQ's factor

structure is consistent with the theorized PE dimensions for both Latinx and White parent groups. An additional objective included the examination of the instrument's psychometric properties through invariance testing to discern if the constructs of the CSPEQ are being measured in the same way across Latinx and White parents of elementary-aged children.

The separate group CFA results indicated that the theoretical PE models may be different for Latinx and White parents, including differences across Latinx and White parent model fit, areas of localized strain, and parent endorsement of item response categories. Overall, the results of the CFA indicated that the theorized model does not support the Latinx parent data after failed efforts to improve model fit for the Latinx group CFA. Research objectives to further conduct multiple groups invariance testing were abandoned to prioritize the exploration and identification of a theoretically interpretable factor structure for Latinx parents through EFA analyses. The results of the EFA produced a reliable and theoretically supported 4-factor PE measure consisting of 35 items that reflect culturally embedded PE behaviors for Latinx parents across home and school settings. These PE domains include Bien Educado, School Engagement, Academic Supports, and Academic Socialization. Key findings of the EFA demonstrate that PE is a multidimensional construct that can consist of culturally informed Latinx PE behaviors and PE behaviors that are salient indicators of positive student outcomes. The CSPEQ affirmed the culturally centered PE behaviors of Latinx parents supported by the research literature and illuminated how those PE behaviors are related to various dimensions of PE across home and school. Taken together, the development and validation of the CSPEQ provide significant steps to conceptualizing and measuring PE for Latinx families in culturally responsive ways that can more accurately capture Latinx PE.

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Chapter 1: Introduction

Statement of the Problem

Latinx students and their families are a large part of the U.S. education system, and this population continues to grow. The Latinx student population increased from 11.0 million in 2009 to 13.8 million in 2018 and is the second largest ethnic student population representing 27% of all students (Irwin et al., 2021). This growth is likely to continue as public elementary and secondary school enrollment of Latinx students was predicted to increase up to 29% between the years of 2013 to 2025 (Irwin et al., 2021; Kena et al., 2015). Despite this, the U.S. education system continues to face challenges to progress toward academic equity and close opportunity gaps for Latinx students (Galindo, 2021; Jang, 2019; Jeynes, 2015, 2017; Lee, 2002).

Latinx students experience significant opportunity gaps in comparison to their White English monolingual counterparts (de Brey et al., 2021; Education Trust-West, 2010; Galindo, 2021; Gandara & Contreras, 2009; Irwin et al., 2021; Kena et al., 2015; Suárez-Orozco & Suárez-Orozco, 2009). The opportunity gaps between White and Latinx students manifest as early as a child's entry into formal schooling (Chernoff et al., 2007; Kena et al., 2015; Rumberger & ArDLLano, 2007). Opportunity gaps persist even in secondary schooling (de Brey et al., 2021; Fry, 2003; Irwin et al., 2021; Vélez & Saenz, 2001). Research has examined that these gaps even continue into higher education (Chernoff et al., 2007). For instance, less than 17% of Latinx students obtained a bachelor's degree in 2015 (Gándara & Mordechay, 2017).

There is an even larger opportunity gap between Dual language learners (DLLs) and non-DLL students. The U.S. Department of Education identified opportunity gaps between

DLL and non-DLL students that are even wider than the gap between students that do and do not qualify for free or reduced lunch (Irwin et al., 2021). This gap between DLL and non-DLL students has remained unchanged since reported in the Condition of Education in both 2011 and 1998 (Kena et al., 2015). Many of these students who struggle are Spanish-speaking DLLs, composing 77.6% of all DLLs (Irwin et al., 2021). Consequently, opportunity gaps manifest across both racial-ethnic and linguistic lines, which have placed Latinx students at a high risk of experiencing academic challenges. In fact, oppression and inequality of opportunity exist on a multitude of identities that the Latinx student and family population hold beyond just language (Jang, 2019).

Latinx students face a myriad of challenges to their educational attainment due to the identities they hold, including immigration and documentation status (Cross, et al., 2019; Diaz-Strong & Ybarra, 2016; Enriquez, 2017), school economic segregation (Fuller, et al., 2019), peer or school discrimination (Adair, 2015; Bennett et al., 2019; Stein et al., 2019), and cultural incongruence of family-school partnerships (Barajas- López & Ishimaru, 2020). As the terminology opportunity gap suggests, educational disparities are simply a symptom of these immense inequities of access and opportunities that facilitate academic achievement and intergenerational wealth (Welner & Carter, 2013). Such opportunity gaps were long identified as achievement gaps, more specifically, the gap in educational scores and outcomes across student groups, frequently racial and ethnic groups (Carey, 2014; Shukla et al., 2022). A majority of the research and literature that focused on achievement gaps engendered the practice of gap gazing. Gap gazing includes research highlighting the existence of the gap as well as identifying the factors related to the gap (Gutiérrez, 2008). However, this invalidates the systemic racism, segregation, and marginalization of Latinx

students that engenders educational disparities. Instead, the emphasis should be less on gap gazing but rather looking at the inequities of access and opportunities (Gutiérrez, 2008; Shukla et al., 2022). As a result, emerging literature has provided a shift from this deficit perspective and moves towards identifying barriers, adopting strengths-based approaches, and systemic reform (Galindo, 2021; Jang, 2019; Rodriguez, 2001; Shukla et al., 2022).

The inequities experienced by Latinx students have been further exacerbated by the emergence of a global pandemic (Landivar et al., 2022). The pandemic began after the emergence of the December 2019 outbreak of COVID-19 in China. The spread of COVID-19 reached a global level in January 2020 when the World Health Organization (WHO) announced it to be an international public health emergency (World Health Organization, 2022). The pandemic caused public schools to close and alter the mode of instruction to remote or a combination of remote and in-person instruction. Parents have become overburdened with the demands of supporting their children through remote learning in addition to the strain from economic and health challenges resulting from COVID-19 (Garcia & Weiss, 2020; Saracho, 2022;). The pandemic has created not only a health but an economic crisis that has widened the historic racial inequalities experienced by Latinx families in employment, income, housing, health care, access to education, the digital divide, and intergenerational wealth (Landivar et al., 2022; Saracho, 2022; Tienken, 2020; Wilson, 2020). These inequalities further exacerbate the opportunity gap for Latinx students. For instance, the shift to remote instruction required access to sufficient internet and tools for online learning. Latinx students were more likely to be one of the 6.8 million students without adequate access to the internet or who did not have internet access at all (Irwin et al., 2021; Tienken, 2020). Latinx students also consisted of a large percentage of students who

had to use smartphones to access the internet, a tool that is not likely to engender successful learning (Tienken, 2020). Such findings are problematic given the research that provides evidence that the effectiveness of remote education is dependent upon stable internet access (García & Weiss, 2020). Even with the reopening of schools, the socioeconomic divide created larger inequities. Across the U.S, researchers found that Latinx students had less access to in-person instruction in comparison to their White peers. These researchers also identified that student access to in-person schooling had impacted Latinx mothers' employment rates (Landivar et al., 2022; Saracho, 2022).

If the U.S. education system is to recover and thrive in the future, then measures must be taken to close academic opportunity gaps and implement systemic changes that foster access and opportunities for Latinx students and their families in our public schools.

Salience of Parent Engagement

Parent engagement (PE) has been identified in the research literature as a salient factor to promote academic achievement for Latinx students. PE has been strongly supported to engender positive outcomes on academic achievement throughout the decades (Araque et al., 2017; Auerbach, 2009; Fan & Chen, 2001; Hill & Tyson, 2012; Jeynes, 2003, 2005, 2007, 2011, 2017, 2018; Lee & Bowen, 2006; Lopez, 2012; Noguera, 2001; Zellman & Waterman, 1998). In addition to academic achievement, existing research evidenced that PE is associated with a multitude of positive student outcomes such as social-emotional functioning, school readiness, academic attitude, self-efficacy, and motivation (Auerbach, 2009; Jeynes, 2003, 2018; Noguera, 2001; Parker et a., 1999; Robles et al., 2019; Smith et al., 2019).

PE is a salient focus within schools, education policy, and the research literature due to the empirical promises of PE as a viable mechanism to at least partially address opportunity gaps and increase protective factors for students. School efforts to increase PE include the adoption of school-wide PE framework strategies (Alameda-Lawson & Lawson, 2019; Bower & Griffin, 2011; Epstein, 1995), interventions (Sheridan et al., 2010; Yull et al., 2018), and other structural changes to schools that aim to promote better family-school partnerships and communication (Rudo & Dimock, 2017). PE in education has garnered the attention of a multitude of school professionals as it is targeted within school settings by leadership, school psychologists, and counselors (Froiland, 2021; Griffin & Steen, 2010; Heinrichs, 2018; Torre & Murphy, 2016).

The importance and understanding of PE have evolved even further with the impact of COVID-19 on schools, their families, and communities. Schools and parent engagement have been affected by the pandemic at its very foundation (Jalongo, 2021). With school closures and remote instruction, students for years did not receive face-to-face time and instruction with their teachers. Parents could no longer engage in their child's education in traditional ways by volunteering or visiting the school due to school closures. Even teaching in various content areas was drastically changed to accommodate remote teaching (Saracho, 2022). As a result, parents were responsible for larger decision-making and involvement in their child's education. The shift in parent responsibility for carrying out children's remote education at home evolved the types of home-based PE behaviors (Grossman, & Grossman, 2012; Jalongo, 2021; Ribeiro et al., 2021; Sonnenschein et al., 2020). In addition to these changes in home-based PE behaviors, parents faced a variety of other barriers and challenges to support their child's development and learning. For instance, childcare became a

significant barrier depending on families' financial and employment situations (Sonnenschein et al., 2021). Children with disabilities, who lacked resources, or carried vulnerable identities were impacted even more by school closures. The special education student population experienced a severe lack of access to assessment and special education services in their schools (Barnett et al., 2021). Parents were also given the challenge of supporting the exacerbated mental health and quality of life that children experienced across the world (Jalongo, 2021; Saracho, 2022; Styck et al., 2021).

The aspects and challenges to our understanding of PE have drastically changed as a result of the pandemic, however, the importance of PE has remained. Research suggested that for elementary-aged students PE was particularly salient in the success of remote instruction in order to meet their higher levels of need for assistance and supervision (Dorn, 2020). Sonnenschein and colleagues studied perceptions of teachers regarding the COVID-19 distance learning that suggested a large barrier for remote instruction was parent engagement (2022). This indicates that parent engagement is a critical component of the changes and demands of successful child education in this changing world.

The importance of school PE and its benefits are highlighted within education policy by the US Department of Education. Title 1 Section 1118 of the No Child Left Behind Act (NCLB, 2014) mandates that schools develop and implement policies to facilitate PE while also emphasizing that responsibility for student achievement is shared amongst school staff, parents, and even the students themselves. Specifically, schools must provide PE activities and programs. Additionally, schools are expected to build the capacity for PE by planning and engaging in practices that foster PE. States must have plans in place to help schools identify and use effective PE practices. Policies also dictated that schools develop ways to

evaluate such PE programs and policies. However, the ability of schools and districts to evaluate such policies and practices is dependent upon the accurate measurement of PE behaviors.

Problems in PE Measurement

Current and traditional measures of PE limit researchers and educators from accurately understanding the construct for both the general population and Latinx families. The ability to accurately measure PE for the general population is inhibited by a multitude of shortcomings across PE measurement. A problem with traditional PE measures is the lack of dimensionality and identification of specific PE behaviors known to predict achievement (Boonk et al., 2018; Cooper & Crosnoe, 2007; Henry et al. 2011; Hill et al. 2004; Jeynes, 2018). It is important to know what specific PE behaviors are associated with positive student outcomes in order to inform interventions or school systems to target specific and meaningful forms of engagement. Furthermore, the majority of existing PE measures and frameworks do not represent the ways in which Latinx families engage in their children's learning primarily due to the Eurocentric foundations of the PE construct.

White middle class and Eurocentric norms govern expectations of PE in schools and measurements, which is often limited in scope to attending school orchestrated events, conferences, or volunteer work (Fan et al., 2012; Lewis & Forman, 2002). These norms are evidenced within the existing measures of PE, as academic achievement of European-Americans is better predicted by traditional measures in comparison to Latinx Americans (Desimone 1999; Valadez 2002). Traditional frameworks and measures of PE in education that focus exclusively on behaviors consistent with European American perspectives limit our understanding of PE and neglect culturally responsive nuances that might help better

understand the various ways that Latinx parents engage in their children's educational development. In addition, traditional measures have not adequately examined associations between PE and children's academic outcomes, particularly in terms of how these associations might look differently across racial-ethnic groups (De Von Figueroa-Moseley et al., 2006; Huntsinger & Jose, 2009). As a result, the Eurocentric behaviors identified in current traditional measures might not be predictive of achievement or representative of Latinx families.

Traditional PE measures have also failed to take into consideration the barriers that many Latinx families face that shape their PE behaviors. Latinx families experience inequities across financial and mental health domains (Anderson & Minke, 2007; Gilbert et al., 2017) in addition to academic achievement. The United States' second largest child population living in poverty is Latinx children (DeNavas-Walt & Proctor, 2015). These economic disparities have been worsened by the pandemic. For example, in early 2020, the Latinx population experienced the highest unemployment rates because of the pandemic (Wilson, 2020). Latinx families were also less able to secure childcare or academic support for their children during the pandemic due to a lack of opportunities in employment or financial reasons (García & Weiss, 2020; Jalongo, 2021). Immigrant Latinx families are also more likely to face challenges with acculturative stress and language barriers due to low English proficiency (Hernandez et al., 2012). Language barriers can present challenges to Latinx PE, as parents with less English proficiency have been found to demonstrate less education related home involvement (Gilbert et al., 2017), have less confidence in involving themselves in their child's homework, and are less likely to engage in school-based activities (Smith et al., 2008). Again, these barriers were further intensified by the pandemic with the

increased parent responsibility to support their children's education at home and understand what is going on in their child's virtual classroom. For example, research findings identified significant barriers to student access to remote instruction to include parent limited English language proficiency and literacy skills (Sonnenschein et al., 2022).

Eurocentric foundations of PE measures and the US education system have created barriers to traditional forms and expressions of PE for Latinx families. Specifically, the way in which parents initiate and participate in activities of PE is dependent on cultural knowledge about the U.S. education system that Latinx families may not have (Delgado-Gaitan, 1991, 2004). The cultural discrepancy between family and schools also engenders persistent incongruence between teacher and parent perceptions or expectations of what educational engagement entails. These multifaceted barriers attribute to Latinx families' low levels of PE (Smith et al., 2008). Thus, it is imperative that measures of PE for Latinx families are informed by the way in which Latinx family engagement practices can be culturally situated and shaped by such barriers.

Foundational structures of U.S. education are derived from white middle-class ways of thinking and consequently definitions of PE that in turn marginalize Latinx families and their PE efforts. The development and use of these traditional Eurocentric PE measures have produced culturally biased measurements that perpetuate a deficit perspective of Latinx families in schools and across the research literature. Specifically, previous research on and efforts to increase PE have often illustrated a deficit perspective of Latinx family engagement (Valencia & Black, 2002). Schools often perceive that Latinx and other minority families have nothing to contribute to the student's education or have no interest in being involved (Adair, 2015; Cooper, 2009). Historically the research literature has presented findings that

Latinx parents have some of the lowest levels of PE across racial and ethnic groups (Turney & Kao, 2009).

Research examining PE frequently takes an etic approach that compares this euro-centric universal definition and measurement across all groups of students (McWayne et al., 2013). Latinx students may not reap the benefits of such research as its measures, definitions, or findings do not accurately capture or reflect the true nature of PE in Latinx populations. Significant gaps exist within Latinx PE research with regards to the types of family practices that should be considered as engagement in a child's education and which of those are most indicative of students' success in schools. Without an adequate understanding of what constitutes PE behaviors and activities, specifically practiced by Latinx parents, schools will lack valuable information that would allow them to better target the most appropriate and impactful PE behaviors that might facilitate meaningful change in Latinx student outcomes. Thus, attempts throughout the literature to examine changes in Latinx PE may be futile without the identification and examination of how Latinx parents are uniquely involved in their child's education.

Need for Culturally Responsive Parent Engagement Measurement

In moving away from gap gazing approaches and adopting systemic and strengths-based approaches, schools must evaluate the cultural and socioeconomic contexts of the school system that require reform. A systemic explanation of inequity posits that the current school definitions, measurement, and practices surrounding PE are centered on whiteness that engenders opportunity gaps. More specifically, it prevents institutional experiences of Latinx parents to engage, or being seen in the ways that they engage with their children's learning. Schools cannot make genuine efforts within their school practices to address PE

barriers or utilize the strengths of Latinx PE behaviors if they do not reconstruct their cultural, white-centered notions of PE but also the measures used to understand it. Continued use of inadequate measures of PE will only further the deficit-based perspective of Latinx families in education and perpetuate racist systems that ultimately contribute to the opportunity gap. A change in PE measurement tools can simultaneously change the way schools systemically conceptualize the construct of PE and gather accurate culturally informed data about the Latinx families they serve.

Taking into consideration the unique cultural nuances of Latinx PE and the numerous barriers to engaging in their child's education, it is imperative to have more culturally sensitive measures of PE in schools. Definitions and subsequently the measurement of PE needs to be re-evaluated in ways that include the PE practices of Latinx families and as well as other culturally and linguistically diverse families (Abdul-Adil & Farmer, 2006; Griffin, 2011; Jackson & Remillard, 2005; Mattingly et al., 2002). Additionally, PE measures need improvement to more accurately measure the construct for white families that are largely representative of the general population target in traditional measures (Boonk et al., 2018). The present study addresses such research gaps by developing and validating a comprehensive and culturally sensitive measure of PE in student learning for both Spanish-speaking Latinx and white families. The development of this measure addresses the lack of psychometrically sound instruments to assess multidimensional levels of school-related PE. This measure also addresses the lack of understanding of how Latinx families uniquely participate in their child's learning and how specific forms of Latinx PE behaviors facilitate positive academic achievement and other child development outcomes.

Chapter 2: Literature Review

The present review focused on the research literature addressing PE in elementary school education both broadly and with specific focus on Latinx families and students. This review delineated the definitions of PE specifically within the context of behaviors or observational indicators of engagement and explicated the theoretical foundations of PE in education. Furthermore, a culturally situated examination of Latinx PE perspectives and behaviors is discussed. PE outcomes literature was also reviewed to highlight its importance in education and identify the PE behaviors related to student achievement and development for the general population and Latinx families. Lastly, an overview of the current challenges in PE measurement as well as the available culturally sensitive and inclusive PE measures was provided to identify areas of need that is addressed in the present study.

Definitions of PE

PE is identified as a multi-faceted construct in the literature by educators, researchers, and within education policy. It has generally been defined as the various ways that parents support their children's education and learning across community, home, and school contexts (McWayne et al., 2016; Epstein, 1995; Jeynes 2018). Parents' behaviors consist of both indirect and direct ways to promote their children's learning (Kim & Sheridan, 2015). PE has been traditionally conceptualized within two overarching domains: home-based and school-based.

School-based engagement. PE behaviors at school are the most commonly conceptualized and emphasized component of PE. School engagement is understood as the parent behaviors within, or related to, the school setting that support their child's learning. Traditional examples include participating in or attending school events, activities,

organizations, parent teacher conferences, field trips as well as volunteering in classrooms (Boonk et al., 2018; Epstein 1995). Other typical conceptualizations of school engagement behaviors include participating in parent-teacher associations (PTA) or other school governance positions. Communication between parents and teachers regarding children's academic performance has been another traditional longstanding component of PE in schools (Barge & Loges, 2003; Ensle, 1992; Epstein, 1995; Hong & Ho, 2005). Initial and even current definitions or school perceptions of PE have been limited to PE activities at school. This over emphasis on school-based engagement is reflected in the research literature that frequently examines PE as one a dimensional construct by measuring it through solely school-based behaviors (Cooper & Crosnoe, 2007; Henry et al., 2011; Hill & Taylor 2004; Lee & Bowen, 2006; McBride et al., 2009).

Home-based engagement. As a result of the expanding research literature, broader definitions of PE have emerged. This includes the incorporation of home-based PE. Educational engagement at home is generally understood as how parents create a home learning environment that supports their child's educational attainment (McWayne et al., 2004). Parent home-based behaviors includes monitoring or assisting children with homework, discussing school-related matters with children, and engaging with children in intellectual activities (Pomerantz et al., 2007). Research has also acknowledged parent attitudes toward education and communication of academic expectations as a facet of PE (Grolnick & Slowiaczek, 1994; Hill & Tyson, 2009). This broader definition of PE encompasses parent's academic goals they have for their children and their own education related attitudes, beliefs, and values (Catsambis, 2001; Englund et al., 2004). The recognition of these broader PE concepts introduces a notion of what later was to be recognized as

academic socialization. Academic socialization entails the various ways parents communicate "expectations about educational attainment, cultivating academic and career aspirations, connecting schoolwork and current events, and discussing learning techniques with children" (Hill & Tyson, 2009). Despite the emergence of boarder PE conceptualizations, definitions of PE and involvement still remain ambiguous and inconsistent throughout the literature (Fan & Chen, 2001).

Limitations of PE Definitions. Vague and generalized definitions of PE include "parent participation in the educational processes and experiences of their child" (Jeynes, 2003) or how parents participate in school activities, demonstrate interest in child's schoolwork, and value education (Paulson, 2009). It has also been defined as "a broad range of educational beliefs, attitudes, and practices of parents and has been defined as a parent's commitment of resources to the academic arena of children's lives in the home and school spheres" (Grolnick & Slowiaczek, 1994). However, definitions such as these frame engagement as attitudes or beliefs rather than behaviors, while other definitions are more specific to parent behaviors. For instance, education policy has provided vague definitions of PE that generalize it as "the participation of parents in regular, two way, and meaningful communication involving student academic learning and other school activities" (Section 9101(32), ESEA. 2004). This definition of PE centers on the communication between parents and their school. Such discrepant and vague definitions illustrate the challenge of conceptualizing a construct that has not been defined using specific behavioral terms. PE definitions and thus its measures have conflicting components when encompassing both behaviors and attitudes or beliefs. Such conceptualizations are problematic as researchers have posited that beliefs and attitudes are representative of facilitators to PE rather than the

actual behaviors or indicators of engagement (Hoover-Dempsey & Sandler, 1995, 1997; Hoover-Dempsey et al., 2005; Boonk et al., 2018) Additionally, there is no consensus on which of the behaviors or domains of engagement are most important and are to be included within the measurement of such a complex construct (Jeynes, 2018; Goodall & Montgomery, 2014).

Other challenges to operationalizing and measuring PE is that PE is often used interchangeably with parent involvement and with little differentiation (McWayne, 2004, 2013, 2017; Jeynes, 2017). A few researchers recognized that these concepts are related but distinct from one another. Specifically, some literature characterized PE as an extension of parent involvement in which parents are not just participating in their children's schools but working with their schools in a partnership (Ferlazzo, 2011; Goodall & Montgomery, 2014; Yul et al., 2014). As Ferlazzo (2011) described "A school striving for family *involvement* often leads with its mouth, identifying projects, needs, and goals, and then telling parents how they can contribute. A school striving for *engagement*, tends to lead with its ears, listening to what parents think, dream, and worry about" (p. 10). However, across the literature there is no consensus or consistency in the way in which these two different constructs are operationalized.

Parent Engagement Defined. Goodall and Montgomery (2014) provided critical new definitions of PE and involvement that exist together along a continuum and discussed the differences between involvement and engagement. The authors specified a continuum along which a progression is made from parental involvement with schools to parental engagement in children's learning. Involvement is clarified to be a more passive participation in children's learning that centers around the school and parent relationship, whereas

engagement requires more ownership, action, and commitment directly influencing a child's learning and thus emphasizes the parent-child relationship. Engagement is the ultimate goal at the end of this continuum, as engagement often entails the direct parenting behaviors that influence student learning. However, the various ways parents support or participate in their child's education along the progression of this continuum, including being involved at school, ultimately contribute to parents directly engaging with their child to impact their learning.

In placing involvement and engagement along the same continuum the authors maintained that engagement and involvement are both ways in which parents participate in their child's education that engenders their academic success. Thus, it is justifiable to include both terminologies when constructing a measure of how parents participate in their child's education, both at home and school. It is more important to measure and capture all constructs of this phenomenon that are predictive of children's success in school, regardless of whether they fall into the purview of "engagement" versus "involvement," as these will likely continue to be debated across the fields of education, social science, and psychology (Jeynes, 2018). For the purpose of the present measurement development efforts, PE is the primary terminology used to represent both concepts.

Goodall and Montgomery (2014) highlighted that although school-based engagement is important, there needs to be more focus on the ways in which parents participate in their child's learning at home. Recent research findings have illuminated how the home environment and home-based PE, are pivotal to children's academic success (Goodall & Mongomery, 2014; Jeynes, 2018; Sylva et al., 2008). In acknowledging the necessity to focus on home-based engagement, the development of this study's PE measure sought to expand

upon definitions and dimensions of home-based engagement. PE definitions for the purpose of the measure included both involvement and engagement that lies within a continuum and built upon the two overarching traditional domains of home and school-based engagement. PE was also conceptualized as parent behaviors that are direct indicators of PE rather than parent perceptions, beliefs or attitudes. More specifically, the items of the present study's measure included indicators or behaviors of PE that are most predictive of achievement for both Latinx and white families.

Parent Engagement Theoretical Frameworks

The multi-dimensional components of PE have been outlined in a variety of theoretical frameworks. These frameworks delineated multiple facets of PE, including specific behaviors or activities when parents are involved in their child's education. The use of such theoretical models not only facilitates explicit definitions of PE, but they have also identified processes by which PE influences educational outcomes including a wide range of indicators, facilitators, and outcomes. Currently there are three prominent theoretical models of PE: Grolnick & Slowiaczek (1994), Epstein & Sanders (1990, 1995, 2002), and Hoover-Dempsey (1995, 1997, 2005, 2010). While other PE frameworks exist, the present literature review focused on these three as they are the most widely cited and used within the measurement of engagement or have been adopted by schools to inform and evaluate their programs related to PE. Furthermore, additional frameworks do not augment or introduce new concepts or theory beyond these three frameworks. For instance, other existing frameworks remain predominantly focused on conceptualizing PE in terms of "school-based" and "home-based" engagement.

Grolnick & Slowiaczek. The Grolnick and Slowiaczek (1994) model defined PE in terms of home and school-based engagement dimensions, including *Behavioral, Cognitive Intellectual,* and *Personal* forms of engagement (See Figure 1). *Behavioral Involvement* encompasses both home and school-based engagement and reflects the traditional forms of what is typically thought of as engagement. For example, parents participating or volunteering in school events and homework help at home. The second component of this model is *Cognitive Intellectual Involvement* that incorporates the ways parents expose children to intellectually stimulating experiences or activities. Cognitively stimulating activities include reading to children, having children practice academic skills that will help them at school, going to museums or libraries, and exposing them to current events. Lastly, *Personal Involvement* entails the academic socialization of children and parent expectations or beliefs surrounding academics and schools. This form of engagement also includes parenting behaviors of actively seeking out information about their child's educational activities at school.

A unique component of this model is the acknowledgement that parent attitudes and communication of academic expectations are a facet of PE. The underlying mechanism of this form of PE is that achievement is influenced indirectly by changes to student academic attitudes and motivations as a result of parents clearly communicating their expectations and aspirations. At the time of the theory's development, this was a significant change and contribution to the conceptualization of PE as much of the focus was on school-based engagement.

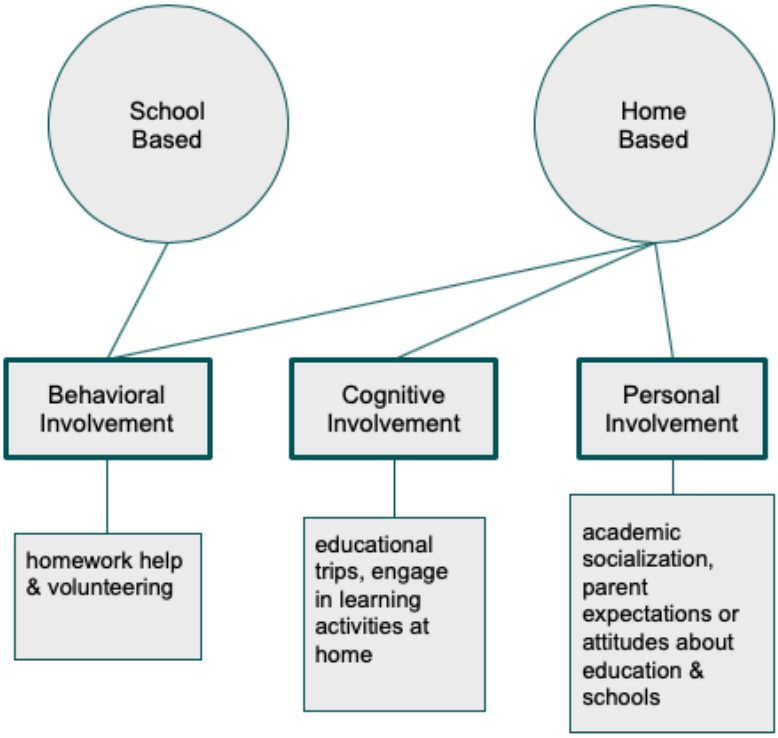

Figure 1. Grolnick & Slowiaczek Parent Engagement Framework

A significant shortcoming of this model is that it lacks specificity regarding what behaviors might be considered relevant to each dimension. For instance, Kohl, Lengua, and McMahon (2000) pointed to the problematic combination of home-based and school-based PE behaviors within the same category of *Behavioral Involvement.* The broad all-encompassing dimensions that overlap and lack of specificity removes the ability to examine specific outcomes and PE behaviors. Overall Grolnick and Slowiaczek do not have a sufficient number of dimensions of PE to identify and differentiate the variety of parent behaviors. Additionally, there is no specificity as to whether parent attitudes and expectations are to be conceptualized as behaviors. The present study's measurement development efforts focused upon identifying how such forms of engagement can be identified as a behaviors.

Despite these criticisms, the framework offers a critical missing piece of PE by including salience of parent expectations and academic socialization.

Epstein. Epstein's theory of parental involvement (Epstein, 1990, 1995, 2002) delineated six types of parental involvement within the context of family-school partnership: Parenting, Communicating, Volunteering, Learning at Home, Decision-Making, and Collaborating with Community (See Figure 2). Epstein proposed home-based types of parent engagement (Parenting and Learning at Home*)* as well as school-based forms (Communicating, Volunteering, Decision-Making, and Collaborating with Community). The PE behaviors identified in the framework provided several dimensions of engagement and the ways in which those behaviors are initiated by schools. Underlying this framework are the "*Practices of partnership*" or processes of how to facilitate meaningful PE and in what ways the school is responsible for fostering such engagement.

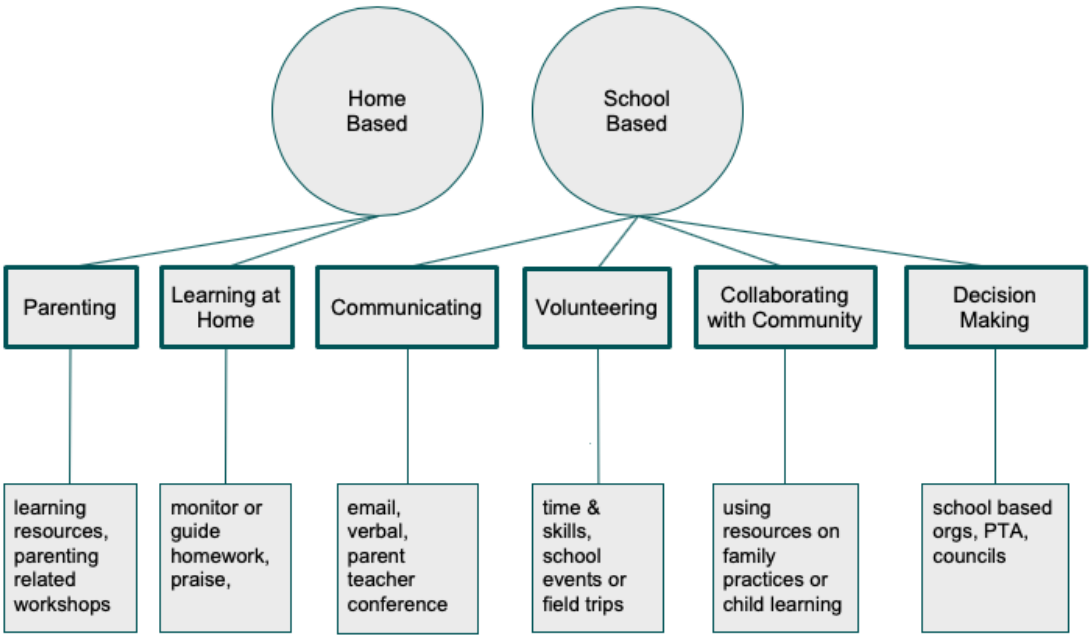

Figure 2. Epstein Parent Engagement Framework

The first engagement form, *Parenting*, entails the ways that parents create supportive home environments. This includes providing a student adequate resources to learn at home or the space to do homework. Additionally, this type of engagement behavior can also be parent attendance at workshops that increase their knowledge of their child's development or ways to support them. School practices that facilitate this form of engagement entail the provision of family support programs, parent education training, parenting workshops, and any other sharing of information that provides suggestions for parenting practices (Epstein, 1995).

The second home-based type of engagement outlines how parents facilitate *Learning at Home* through homework help and curriculum related activities, decisions, and planning. This does not entail when parents teach academic content to children. Instead, it is the ways parents provide guidance or monitoring over homework, encouragement or praise, and discussing and listening in ways that promote learning (Epstein, 1995). According to the model, schools can initiate this form of involvement by sharing resources that will facilitate parent ability to help with homework.

The third type, *Communicating*, addresses effective communication in the transactions between home and school. This can be communicating verbally in person or through emails with teachers or school staff as well as attending parent-teacher conferences or PTA meetings. Creating effective forms of communication across home and school regarding student achievement or school programs are among the essential school practices identified by Epstein (1995). For example, schools can utilize technology to disseminate information and communicate with parents or ensure consistent use of language translators.

The fourth form encompasses parent *Volunteering* efforts, time, skills, and resources in or outside of the school. Volunteering efforts can be understood as freely donating time in

leading the PTA, chaperoning a school event or field trip, or helping in the classroom. Volunteering skills can be parents using their skills to contribute to student learning such as beautifying school grounds or coming in to teach a topic to classrooms. Partnership practices for this form of engagement necessitate the creation of volunteer programs or other school structures that aim to recruit and coordinate parent volunteers.

The fifth type of PE specifies how parents engage in *Decision-Making* with the school as active members of councils, committees, and other school-based organizations. This form of engagement can happen when parents work with school staff to make decisions that directly or indirectly impact children's learning. Schools foster this area of engagement by ensuring that parents have ways to include parents in the school-related decisions. Practices that Epstein highlights are the development of school-based organizations or committees (i.e. PTA) and parent representatives or leaders to create spaces in which parents can make decisions.

The last form of engagement involves parent behaviors in *Collaborating with Community* with regard to resources that support family practices; children's learning or development; and school programs (Epstein, 1990, 1995). School practices to facilitate this form of involvement includes integrating community resources and services through school partnerships with community organizations and businesses. This also includes a sharing of information regarding community resources, services, and programs with the families.

Epstein's theory connected several forms of PE to the roles and responsibilities of the school to improve upon parent behaviors to engender better PE practices with resources, teaching, guidance, and communication. Consequently, much of this theoretical framework is utilized in the development, implementation, and examination of PE and school partnership

intervention. Research has also evidenced a relationship between the implementation of Epstein's model and academic achievement (Barnard, 2004; Ingram et al., 2007; Lopez & Donovan, 2009).

However, criticisms of Epstein's model addressed its narrow emphasis on the school perspective of engagement that is highly based upon school and teacher-initiated engagement (Kohl et al., 2000; Bower & Griffin 2011; Jeynes, 2005). The first issue this presents is that the framework lacks identification of specific PE behaviors in favor of school and teacher initiatives. The PE behaviors previous described within the model are derived from areas of PE that schools seek to address. Kohl (2000) indicated that the model can primarily serve as a guideline "for formulating corresponding dimension of parent behaviors" (p. 4). While the framework helps to create dimensions of PE, the six types of engagement did not explicitly delineate PE behaviors. Furthermore, the theory did not specify the most salient PE behaviors that are predictive of positive student outcomes such as academic achievement. Another issue regarding the focus on school initiated practices occurs within the context of school-family partnerships. Bower and Griffin (2011) criticized that PE in Epstein's framework is "defined and evaluated in the school's terms rather than the families' terms" (p. 20). Involvement practices as determined by the school can be problematic in a dimension such as Collaborating with Communities as the ways in which the school dictates families to collaborate with the community can potentially only benefit the schools and their own programs instead of the families themselves and their children's learning. In placing the school at the focus, the role of how parents perceive themselves as being involved in their child's education is neglected within the model's engagement types. Forms of PE that could be missing from the model include culturally situated parenting behaviors that are

particularly beneficial to Latinx students and their families. Considering that schools frequently define PE through a white middle class lens, Epstein's model could be lacking in its ability to capture the ways in which Latinx families conceptualize PE. For instance, Bower and Griffin (2011) have examined the relevance of Epstein's theory within high minority and high poverty student populations, including Latinx students, and identified that the framework may not be adequately representative of such populations. Beyond Bower and Griffin's study, there is little research looking at the ability of Epstein's model to adequately represent Latinx PE.

Jeynes (2018) addressed other limitations in Epstein's model as a framework for building family school partnerships and increasing PE. Specifically, the dimensions highlight school initiatives with only two of its dimensions being related to home-based school involvement. Research examining Epstein's model within the context of schools serving larger populations of low income and minority students found the most common practices were home-based involvement, specifically "parenting" and "learning at home" (Ingram et al., 2007). The emphasis on home-based involvement activities within this population suggest that these forms delineated in the model would be important additions to the dimensions of PE to be included within the proposed measure for Latinx families. The lack of home-based PE dimensions is further problematic as the literature has strongly indicated that home-based involvement is one of the most salient forms of engagement that predicts academic achievement for the Latinx and general (i.e white) population (Altschul, 2011; Boonk et al., 2018; Jeynes 2018). The salience of PE in the home as reflected in the research is therefore not adequately represented within this theory. Additionally, Epstein's theory alone does not reflect Latinx PE practices as home-based engagement are the most

commonly engaged behaviors of Latinx families. The sole use of this framework to develop measurement of PE behaviors would not be able to adequately capture the salient ways in which Latinx parents engage in their child's learning.

Hoover-Dempsey. The Hoover- Dempsey and Sandler model (1995, 1997, 2005, 2010) provided a framework that examined the processes of PE behaviors by encompassing how and why parents engage in their child's education, mediators of PE and its positive outcomes. The model illustrates the processes through multiple sequential levels beginning with the motivations of why parents engage in particular forms of PE and the amount of involvement activity (See Figure 3). These motivators include personal psychological motivators, contextual motivators of perceived invitation to be involved, and perceived life context motivators.

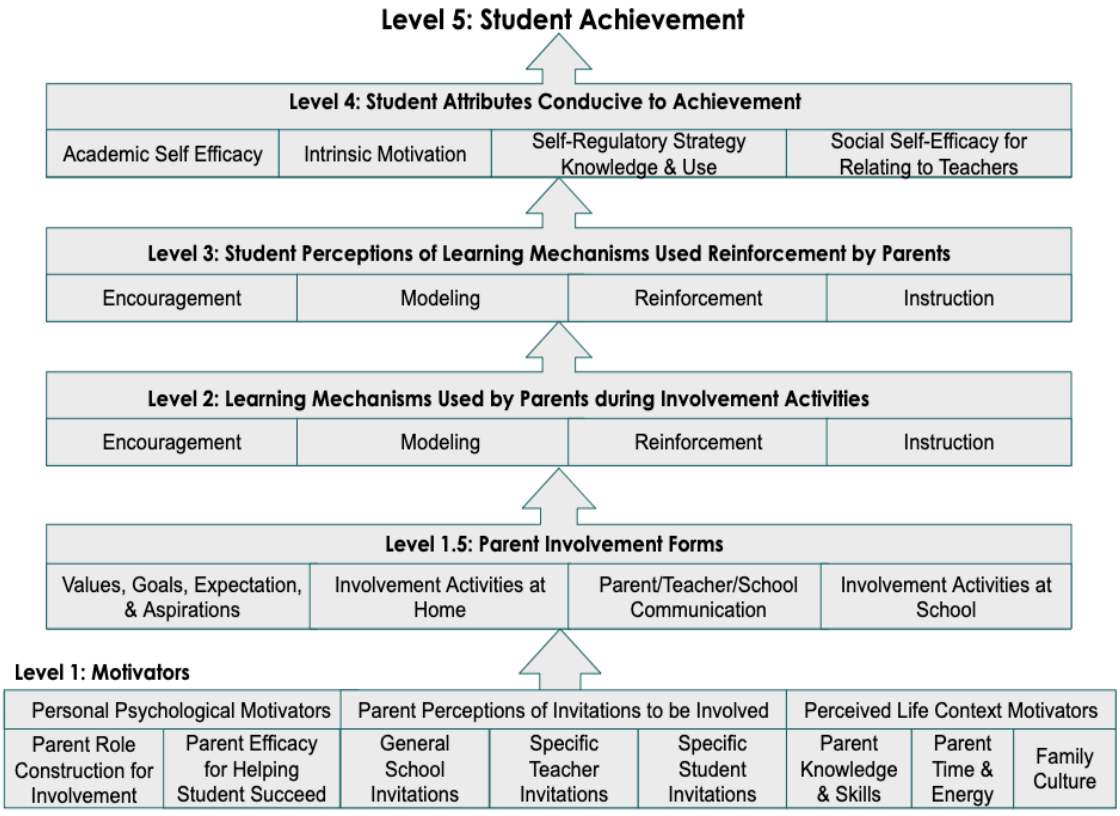

Figure 3. Hoover-Dempsey Parent Engagement Framework

Personal psychological motivators are specifically the parent's role construction and parent sense of self efficacy to help their child in school. *Parent role construction* is the parent beliefs of their roles in their child's education as a result of their experiences and expectations from the social systems they reside in (Walker et al., 2011). Role construction can be understood as parent's beliefs in who is primarily responsible for their child's educational achievement such as the teacher or both the parent and teacher. This also includes how many and what types of activities related to their child's learning the parent believes they should be doing (Chrispeels & Rivero, 2001; Green et al., 2007; Murray et al., 2014). A *parent's sense of self efficacy* is the degree to which a parent feels capable that they are able to engage in their child's learning and believes that their involvement can ultimately help their child's achievement. Self-efficacy beliefs include parent perceptions that they are able to engage in numerous activities to support their child's learning and can exert positive change to their child's achievement (Garcia-Coll, 2002; Walker et al., 2011). High levels of parent self-efficacy beliefs serve as a motivator by increasing levels of PE (Hoover-Dempsey et al., 1992; Hoover-Dempsey et al., 2005). Social systems such as family and school systems shape such personal motivators by presenting experiences that dictate how the parent conceptualizes their ability to help their child's academic success or role in their child' learning (Garcia-Coll, 2002; Walker et al., 2011).

Contextual motivators of perceived invitation to be involved in children's education are derived from child, teacher, and school invitations. *General invitations from the school* are the many ways that allow the parent to feel welcomed including the parent perceptions of school climate, positive interactions with staff, and responsiveness to parent needs (Walker et al., 2011). The school staff sets a precedent for the school climate through their behaviors

and attitudes that determine how parents feel as contributors of their child's education and as members of the school community (Hoover-Dempsey & Sandler, 1995, 1997; Walker et al., 2005). *Specific teacher invitations* to PE are also recognized in the form of teacher-parent information sharing and communication that informs parents on how to support their child's education and connect the parent to the school and their child's learning efforts. At the basis of these invitations are the nature of the relationships, whether positive or negative, between the family and teacher that impact the degree of PE behavior. PE is increased by strong teacher-parent relations and teacher out reach to share information that encourage involvement (Patrikakou & Wissberg, 2000; Kohl et al., 2002; Simon 2004). The Hoover-Dempsey model also identifies specific *student invitations* as a salient motivator that dictate PE behaviors. Students invite their parent's involvement through their explicit requests and their behaviors. Children make explicit verbal requests when making negative statements about school or stating that they do not understand material or ask for parent help. Children also invite involvement with behaviors pertaining to school performance and learning such as procrastination, or poor school performance. Parents will then vary their involvement depending on the needs of their children that are indicated by such invitations from their children.

PE behaviors are also motivated by parent *perceived life context motivators* that include parent knowledge and skills; time and energy; and family culture. Parents develop perceptions of the knowledge and skills they have and compare it to the particular skills and knowledge that is needed within various involvement activities. Similarly, parent level of engagement is also influenced by time and energy parents have and whether it is enough to allow them to engage across various home and school activities. If these various life context

motivators do not match with the engagement activity, the theory posits that parents will be less likely to do them. In particular, research identifies that Latinx families can be greatly impacted in their PE practices when they doubt that their knowledge and skills will be helpful in their child's education (Hoover-Dempsey et al., 2005). Time and energy of Latinx parents is significantly predictive of PE levels across home and school (Walker, Ice, & Hoover-Dempsey, 2011) and has presented itself as a significant barrier for low-income Latinx families (Garcia Coll et al., 2002; Dearing et al., 2003). Lastly, family culture plays a large role in dictating beliefs of PE and thus the degree or forms of PE activities that are practiced by parents. Culture contextual motivators are a particularly salient contribution of this model and to measurement development as Latinx cultural values significantly informs Latinx PE behaviors (Auerbach, 2006; Hill & Torres, 2010; Goldsmith & Kurpius, 2018; Reese, 2002; Olmedo, 2003). In fact, family culture is arguably an overarching influence or motivator that cuts across all of the three motivators of engagement. Culture should be a concentric circle encompassing motivators or facilitators of PE rather than being situated in life contexts.

The aforementioned motivators of PE represent the facilitators of PE that dictate the degree and form of engagement behaviors, while the following Level 1.5 presents the actual behaviors or indicators of PE. Level 1.5 of the Hoover-Dempsey model identifies 4 forms of PE behaviors: Values, goals, expectations, and aspirations; Involvement activities at home; Parent teacher school communication; and Involvement activities at school. Parent communication of values, goals, expectations & aspirations to their children are recognized within the framework to influence student's own educational attitudes and behaviors. Parents can communicate personal and family values as well as aspirations, expectations, and goals

for student achievement. Involvement activities at home include typical home-based engagement practices such a discussing school related experiences or monitoring and reviewing homework. Parent, teacher, and school communication reflects upon the effectiveness of communication between teacher and parents that incorporates careful listening, respect, and responsivity of the school towards parent ideas, questions, and concerns. Involvement activities at school vary in a broad array of activities that parents participate within the school setting, from volunteering to school governance.

The model goes beyond the PE behaviors and presents the mediators of PE and its positive outcomes including academic achievement, attributes and skills associated with learning. Levels 2 through 5 illustrates this pathway of the resulting mechanisms of the parenting behaviors up through the impact of engagement on student school related outcomes. Level 2 encompasses how parents then implement the four forms of PE using traditional learning mechanisms that are derived seminal theories of how individuals learn including: modeling (Bandura, 1986), encouragement (Durbin et al., 1993; Pomerantz et al., 2007), reinforcement (Skinner, 1989), and instruction (Rogoff, 1998; Vygotsky, 1978). These mechanisms that the model presents are important in the process of item development when thinking about how forms of engagement will be enacted as behaviors. Level 3 reflects the ways in which students perceive and are receptive of their parent's engagement practices or mechanisms of learning described in Level 2. Level 3 acknowledges the transactions between parent and child as well as the contexts that PE practices occur in by stipulating that students must be aware and receptive to their parents attempts to engage in their learning in order for changes in PE outcomes to occur. Lastly level 4 and 5 illustrate proximal and distal outcomes of PE. Student attributes conducive to achievement are the more proximal outcomes that

ultimately lead to student achievement and include academic-self efficacy; intrinsic motivation to learn; self-regulatory strategy knowledge and use; and social self-efficacy for relating to teachers. The inclusion of proximal outcomes highlights the indirect process of PE behaviors that lead to the salient academic outcomes centered in the research literature.

Meta-analytic research examining PE behaviors most salient of achievement outcomes have demonstrated the accuracy of the processes outlined in the Hoover-Dempsey model. In particular, across the literature it was evident that such achievement outcomes are indirectly impacted by student attitudes, motivations and other more proximal outcomes of PE behaviors (Boonk et al., 2018). Research has also evidenced the utility of applying Hoover-Dempsey's framework of PE to Latinx families (Walker et al., 2011). This theoretical framework is particularly valuable in its ability to identify facilitators and barriers to better understand PE for Latinx families. Murray and colleagues (2014) demonstrated the utility of Hoover-Dempsey's framework to examine PE practices of families of color as a result of unique barriers and facilitators. The processes outlined in this theoretical framework can allow for a broader understanding of PE behaviors that moves away from schools simply dictating what types of PE practices they need from parents. Role construction as a motivator and significant predictor of PE behavior has been established in the literature for Latinx families (Walker et al., 2011). In fact, parent perceptions of what their role is in their child's education plays a significant role in PE behaviors (Sheldon, 2002). Seeing that role construction precedes PE behaviors, researchers should utilize the literature exploring Latinx parent beliefs on their role in their child's education to develop new theories on Latinx PE behaviors and subsequently more appropriate PE measures for Latinx families.

Essentially, the behaviors that are predicted or related to role construction should be reflected in the measure's construct. In particular Latinx culture significantly shapes parent role construction and warrants careful examination of cultural values that inform the roles and therefore behaviors of Latinx PE practices. It is worth noting that problems of measurement emerge from the research examining the PE dimensions of the Hoover-Dempsey's model. Specifically, the dimensions of PE behaviors are measured using only one or two dimensions with very few items to capture the variety of behaviors that can occur in each domain (Hoover-Dempsey et al., 1992; Walker et al., 2011). Such issues highlight the need for improved measures of PE under this theoretical framework.

Comparison of theoretical frameworks. Overall, the Grolnick-Slowiaczek's framework is the least comprehensive of the three models in its number and specificity of dimensions. However, it introduced the importance of PE behaviors related to academic socialization. In comparison to Grolnick-Slowiaczek and Hoover-Dempsey, Epstein's theory delineates the PE dimensions more distinctly without the overlap that occurs in Grolnick-Slowiaczek and captures these dimensions in a way that is more behavioral. A notable component of Epstein's model is the emphasis on what schools can do to improve the partnership between families and schools by taking the responsibility of how to support and facilitate PE behaviors. However, the model's dimensions of PE are generated by the school and center around how the school will engage parents in these particular PE behaviors. Conversely, the Hoover-Dempsey model is less constrained to what schools dictate as PE. The benefits of Hoover-Dempsy over Epstein's model include a relative lack of emphasis on school directives as well as its specification of the facilitators that inform the PE behaviors. Identifying facilitators allows for a better understanding of Latinx PE behaviors that are not

only culturally situated but also dictated by systemic marginalization of Latinx families based upon race, class, and language (Hill & Torres, 2010; Murray et al., 2014). Additionally, facilitators can be utilized to draw connections to PE behaviors and what school programs can do to foster engagement by understanding these links. Furthermore, it adds to the frameworks by outlining the indirect process of PE outcomes both distal and proximal. However as previously indicated, Epstein provides far more dimensions and specificity of those dimensions in comparison to both the frameworks of Hoover-Dempsey and Grolnick-Slowiaczek.

It becomes evident that it is not sufficient to rely on one of these theories alone and a combination of the three is needed to begin constructing a model that can guide understanding of Latinx PE behaviors. Across the various theoretical frameworks discussed, PE is operationalized as a multi-dimensional construct and extends beyond school-based PE. Several PE dimensions emerge with the review of the aforementioned theories. Home-school communication, school-based engagement, home-based engagement to support a child's learning environment at home were consistent themes of PE evident across these three theories. Home-school communication was emphasized amongst Hoover-Dempsey's "parent teacher school communication" and Epstein's "Communicating" dimension. These domains of engagement both emphasized the importance of effective communication between home and school. School-based engagement was identified across Epstein's "volunteering and decision making," Hoover-Dempsey's "involvement activities at school" and Grolnick-Slowiaczek's "behavioral involvement" dimensions. School-based engagement behaviors were similarly defined in traditional ways such as volunteering, helping in the classroom, attending events, and school governance participation. Epstein's "learning at home" and

parenting, Grolnick-Slowiaczek's "Cognitive" and "Behavioral" involvement, and Hoover Dempsey's "Involvement Activities in the Home" represent a broader dimension that involves PE behaviors that foster a home-based environment conducive to learning. This theme of home-based learning environment is indicative of parenting behaviors that create a supportive and intellectually stimulating home environment and family structure such as monitoring homework or academic progress. An additional reoccurring dimension also appeared across Hoover-Dempsey's "Values, Goals, Expectations, Aspirations" and Grolnick-Slowiaczek's "Personal Involvement" that suggests the importance of including a dimension delineating parent practices of academic socialization in which they express values, expectations, and goals and hopes for children. Parent to child communication of such values, expectations, and beliefs around education is a possible behavioral mechanism to represent this important construct within the present study's PE measure.

The incorporation of these models in the development of this study's PE measure are largely representative of the traditional euro-centric conceptualizations and theories which address the traditional ways in which white families are engaged. This is problematic as the frameworks assume that families and schools will have established mutual understanding and coordination amongst each other. While school principals and leadership have severely limited notions of what involvement should look like for Latinx families (Hill & Torres, 2010) and school engagement directives targeted in the home can undermine Latinx values (Hill & Tyson, 2009). Therefore, in order to develop a more comprehensive and culturally embedded framework of Latinx PE there must also be a review of the salient Latinx PE practices. The PE dimensions of the measure developed in this study were ultimately derived

from components of the various frameworks, review of the Latinx PE research, and PE measures.

Latinx Parent Engagement

Latinx families strongly value their children's academic success and hold high expectations of their children (Chrispeels & Rivero, 2001; Lopez et al., 2001; Martinez, DeGarmo, & Eddy, 2004; Quicho & Daoud, 2006; Ryan et al., 2010). However, schools maintain culturally expected notions of PE that are not congruent with Latinx families and are frequently seen as unwilling participants in their child's education (Hill & Torres, 2010). A devastating result of this incongruence is the school-wide systemic perpetuation of racist stereotypes that Latinx families are less engaged and have less to offer in their child's education. Accurate culturally sensitive PE measures are needed to reform these pervasive school stereotypes and identify the practices and strengths Latinx parents bring to their child's learning.

Attention to what parent behaviors benefit students specifically for Latinx families is critical due to the fact that PE and its relationship to academic achievement looks differently across race and ethnicity (Aikens & Barbarin, 2008; Bean et al., 2003; Birman & Espino, 2007; Cooper et al., 2010; Hill & Craft, 2003; Hill & Taylor 2004; Hong & Ho, 2005; Hughes & Kwok, 2007; Lee & Bowen, 2006). The existing literature that addresses cultural considerations of Latinx specific PE behaviors generally examines barriers, institutional challenges, and how culture informs behaviors and these discrepancies between school-family (Ceballo et al., 2017; Hill & Torres, 2010).

However, the research regarding Latinx PE is in its infancy across both qualitative and quantitative fields of study. There are few quantitative and meta-analytic studies that

examined Latinx PE behaviors in a way that is culturally situated and while also identifying the behaviors that are most effective (Ceballo et al., 2010; Ceballo et al., 2017; Garcia-Coll et al., 2002; Hong & Ho, 2005; Jeynes, 2017, McWayne & Melzi, 2014). The majority of PE findings reflect salient white middle class PE behaviors as they are based upon general populations and examining only traditional forms of PE. Thus, relying on just the parent behaviors indicated in the meta-analytic and quantitative research is not sufficient for accurately understanding which Latinx PE behaviors are most predictive of achievement and other developmental outcomes. Consequently, research solely examining Latinx PE behaviors will help inform the gaps of the other outcome research that will be discussed.

De Gaetano (2007) emphasized there are a wide variety of PE behaviors for Latinx families that occur more frequently at home than in school contexts. Previous research has repeatedly found evidence suggesting that home-based engagement is particularly salient for Latinx parents (Altschul, 2011; Boonk et al., 2018; Jeynes; 2018). However, much of the research and measures examining PE emphasized school-based forms of PE and contained too few dimensions of home-based engagement. The lack of home-based dimensions and behaviors prevents accuracy of fully understanding the many ways that not only Latinx families engage, but also the general population. This necessitates that culturally sensitive measures of Latinx engagement include more home-based related engagement behaviors. The following examination of the Latinx PE literature is broken down by home and school-based PE dimensions .

Home-based engagement. PE behaviors are differentially informed by the way Latinx parents conceptualize education and thus what it means to be highly educated and how parents will support their children. Latinx culture expands upon typical US strictly

academic definitions of education with the notion of *educación* that includes a child's ability to be well-behaved, responsible, moral, and respectful (Auerbach, 2009; Olmedo, 2003; Valenzuela, 2010). *Educación* within the context of PE includes the development of both social-emotional or behavioral and cognitive capacities. Additionally, these two components are not differentiated by Latinx parents (Bingham & Okagaki, 2012; Reese et al., 1995).

Latinx parents are involved in the *educación* of their children at home by fostering values of *ganas, empeños, respeto, estudios,* and *verguenza* that serve as a foundation for their children's success in school (Hill & Torres, 2010). Latinx Parents foster students' drive to succeed, or *ganas* (Auerbach, 2009; Padilla et. al. 2005), as well as emphasize *empeños* or a commitment and dedication to goals and tasks at hand (Auerbach, 2009). *Verguenza* is a quality of interpersonal humility, shame, honor, and self-respect that moves away from pride (Olmedo, 2003). *Estudios* encompasses the importance of diligent study efforts to engender success (Auerbach, 2009; Hill & Torres, 2010; Reese, 2002). Latinx *estudios* scheme has been identified as a salient theme in qualitative research exploring how Latinx families perceive their role in supporting their child's academic success (Goldsmith & Kurpius, 2018; McWayne et al., 2013). Parents highlighted their own responsibilities and behaviors that ensured that their children can focus only on school by utilizing family strengths to free children from supporting the family (Goldsmith & Kurpius, 2018). Engagement behaviors that entail relinquishing children from family responsibilities, chores, and tasks are important to identify as there is evidence that Latinx immigrant girls can experience poor academic performance due to too many family or home responsibilities (Suárez-Orozco & Qin, 2006).

Latinx PE behaviors extend beyond traditional academic notions of engagement by focusing on children's behaviors and values. Spanish-speaking parents reported developing

children's life skills by emphasizing discipline and behavioral guidance more so than their English-speaking counterparts (Kelly-Vance et al., 2006). Latinx parents balance both authoritarian and permissive parenting behaviors (Yan & Lin, 2005). Authoritarian parenting aims to foster their child's responsibility in supporting the family, being efficient with their time, and making the most of their opportunities (Rodriguez, 2001). The permissive aspect is reflected in the absence of parent direction in the ways that their child's responsibility is to be executed. Such parenting styles emphasize Latinx parenting behaviors to develop children's independence so that they are capable for making their own decisions (McWayne & Melzi, 2014). The emphasis of developing children's independence was identified within focus groups in which parents conceptualized their engagement to include developing student adaptive or pragmatic life skills such as cleaning, shopping, cooking, and money (McWayne & Melzi, 2014). The focus groups revealed that parents encourage children to take initiative and be self-sufficient with daily living tasks such as feeding self.

Latinx values have not been considered in measuring or defining PE but could strongly inform PE behaviors and potentially have a relationship with student achievement that is worth exploring (Ceballo et al., 2017). Little research has examined these values within the context of engagement behaviors and how such cultural values impact achievement. However, the few that exist suggested promising benefits to student success. For instance, *familismo* has been evidenced to serve as a projective factor (Kennedy & Ceballo, 2013; Roche et al., 2012). Relatedly, Ceballo and colleagues (2017) suggested that supports towards a child's learning extends beyond their parents and within their family or community network. Latinx students have a larger network of support for their academic endeavors since Latinx parents have a higher tendency than non-Latinx families to seek help

from immediate and even extended family members (Ryan et al. 2010). PE of Latinx families should be inclusive of the ways in which parents also utilize this rich network that is strengthened by cultural values. This highlights that there are unique cultural family practices and contributions that Latinx parents can engage in that will potentially support the learning and success of their children. While it is important to recognize that the term Latinx represents a heterogeneous population with a wide variety of cultures and family practices, it is has also been evidenced that many of the values discussed including *familismo, respeto,* and *educación* are common across Latinx sub-groups (Cruz-Santiago & Ramírez García, 2011).

Although severely overlooked in the PE literature, Latinx cultural values are a powerful resource for parents to provides cultural and social knowledge from family and community to support their child's education (Gonzalez et al., 1995; Lopez et al., 2001; Valencia, 2002; Vélez-Ibáñez & Greenberg, 2005). Latinx parents can provide "funds of knowledge" (Vélez-Ibáñez & Greenberg, 2005) that contribute to their own participation in their child's education. Latinx families accumulate "funds of knowledge" that are the "historically developed and accumulated strategies (skills, abilities, ideas, practices) or bodies of knowledge that are essential to a household's functioning and well-being" (González et al., 2006). These funds of knowledge are not only diverse but are compounded and exchanged within social networks in Latinx communities and families (Gonzalez et al., 1995). Unfortunately, when parents have the opportunity to engage and communicate with schools, they are not recognized for the abundant resources and expertise they can provide in their home to benefit their child's learning (Lopez et al., 2001).

Among Latinx parents, school-related discussions with children were the most frequently practiced form of home-based engagement and was considered the third most predictive of achievement in comparison to other home-based engagement behaviors (Altschul, 2011; Jeynes, 2010). Latinx parents engage in their child's learning by asking their child about school-related experiences with regard to what they learned or to demonstrate concern and support for their child's well-being. This highlights that academic socialization is a part of Latinx PE behaviors. Qualitative findings also suggest that Latinx parents identify their role in their child's educational success includes clearly communicating the child's responsibility as a student to do well in school. This is echoes Latinx values of *estudios* and how communication between parent and child is a viable mechanism in which this value is developed in Latinx families. Early Latinx PE research demonstrated that parents identified high expectations and fostering the value or belief in education as ways in which they support their child's education (Ebner et al., 1997). Research has continued to find that Latinx family PE encompasses the communication of high expectations (Goldsmith & Kurpius, 2018). Additionally, Latinx parents share their desires and aspirations with their children and frequently share the desire for their child's success above and beyond the family's level of education (Goldsmith & Kurpius, 2018).

Qualitative research has demonstrated that Latinx families believe their role in their child's education is to motivate them by orienting their child to the future through storytelling and discussions (Goldsmith & Kurpius, 2018). For example, through such communication the child understands that parent sacrifices, such as a move away from their country of origin, were intentionally related to providing the child a better educational opportunity. This orients their children to larger underlying goals and aspirations. Such PE

behaviors are reflective of Latinx values of *empeños* and *ganas.* Future oriented communication was a reoccurring parent behavior across this literature (Goldsmith & Kurpius, 2018; McWayne & Melzi, 2014). *Consejos* or stories have been identified as a common and salient component of Latinx PE behaviors (Ceballo et al., 2013; Goldsmith & Kurpius, 2018; Reese, 2002). Parents often used *consejos* or stories from their own experiences to instill Latinx values or communicate high expectations and aspirations to their children. Immigration history impacts PE behaviors (Delgado-Gaitan, 1991, 2004) and plays out in the *consejos* that Latinx families share with their children. For instance, *consejos* are used to impart on their child a deep understanding of their educational history, work experiences, and struggles, to ultimately express that education is key to social mobility (Reese, 2002; Ceballo et al., 2013). Such examples demonstrate how storytelling can allow parents to express to their children the importance of education in addition to other academic socialization practices. Communication at home on the importance of education can set academic expectations that is evidenced in the research to be significantly related to Latinx GPA and educational aspirations (Carranza et al., 2009).

Qualitative research that compared Spanish and English-speaking parent practices, perceptions, and barriers to PE within the context of a dual language immersion (DLI) program had identified home-based practices pertaining to student educational environment to be salient for both groups, especially Latinx families. (Kelly-Vance et al., 2006). The study found that Spanish speaking parents identified considerably more engagement with homework. The researchers identified that engagement in the homework process included helping, correcting, and asking questions about homework as well as monitoring its completion and timely submission. In contrast, research that was not situated in DLI contexts

have found that Spanish-speaking parents experience challenges in helping with homework when it is in English (Balli, 1996; Brilliant, 2001). Spanish-speaking and English-speaking parents indicated similar levels of reading related PE activities at home. Again, this could also be facilitated by access to Spanish language reading materials provided by the school in this study. Spanish-speaking parents reported more emphasis on providing their children with support, life skills/values, and routine in comparison to English-speaking parents (Kelly-Vance et al., 2006). Parents discussed engaging in their child's values and life skills by managing behaviors, emphasizing manners and respect, discussing importance of education, and effective study habits. PE behaviors of support included praises, encouragement, caring for child's social-emotional well-being, spending time with them, and asking about the child in general and school experiences.

Research has also taken into consideration how socioeconomically disadvantaged Latinx families engage in their children's education in meaningful ways (Ceballo, 2004; López, 2001; Menard-Warwick, 2007). Latinx families that live in overcrowded homes may secure quiet places for their child to complete their schoolwork. Additional supportive practices include allowing children to focus on school related activities and work by exempting them from family responsibilities even though the child's help can be critical to the families functioning. Latinx parents also make sacrifices, both personally and economically, to help their child succeed in school. Lastly, Latinx parents illuminate to their children the realities of what types of jobs they would qualify for with just a high school degree. Consideration to socio-economic barriers in conceptualizing a wider possibility of PE behaviors is important due to the structural inequities that leave a majority of Latinx families living in poverty (Ceballo et al., 2017; Hill & Torres, 2010).

Lastly it is important to review the emerging literature on the effects of the COVID-19 pandemic on home-based PE for the general population and reflect on its potential impact on Latinx families given the body of research discussed thus far. The pandemic has greatly affected the ways in which parents must engage in their child's learning at home (Jalongo, 2021; Ribeiro et al., 2021; Sonnenschein et al, 2012; Novianti & Garzia, 2020). Home-based PE had become a pivotal role during the pandemic in which parent expected PE behaviors and responsibilities at home grew to an extraordinary level. During the pandemic many parents had increase PE behaviors throughout remote instruction (Bubb & Jones, 2020). In particular, parents spent much of their time supervising their child's online learning by monitoring their attention to class and their schoolwork and helping their child complete school or homework tasks (Bub & Jones, 2020; Ribeiro et al., 2021; Novianti & Garzia 2020; Sonnenschein et al., 2021). Other PE behaviors identified in the literature included direct teaching activities when assisting their child with schoolwork or homework as well as securing resources for their child's learning or to education themselves in order to support their child's learning (Sonnenschein et al., 2021). This included trying to learn a foreign language just to be able to teach their children and consequently would add another layer of difficulty for primarily Spanish speaking parents. Furthermore, securing educational resources may be difficult given parent education levels, access to resources, or their cultural understanding of their role in their child's remote learning.

Additional barriers to a parent's ability to support completion of homework tasks or engage in instructional activities could include lower education levels, or limited knowledge about the school or classroom systems. One study found that parents experienced significant stress levels related to their perceived ability to teach their child. Those who held anxieties

regarding their own math skills struggled to support their child as it made their child more anxious while receiving academic supports from their parents (Sonnenschein et al., 2021). These are pre-existing barriers that many Latinx parents can faced as established in the literature. Despite this, Bubb and Jones had found that parents reported feeling that they gained a tremendous amount of knowledge about their child's learning and classrooms because of the pandemic (2020). It is possible that the increased contact with students' virtual learning may have fostered Latinx parent knowledge regarding their child's learning, school culture, and systems.

Parents also supervised their child's remote learning by managing child behaviors and self-regulation during instruction time (Ribeiro et al., 2021). This could potential be an area of strength for Latinx parents as the literature suggested that Latinx parents place strong emphasis on fostering behavioral and socio-emotional development in the home. Relatedly, parents and teachers were increasingly concerned with children's socio-emotional and behavioral development as a result of the pandemic (Sonnenschein et al., 2021). Parents ability to provide opportunities for socialization to their children was significantly impeded by the pandemic. This also reduced parent and student access to their communities, families, and friends. Latinx parents' use of funds of knowledge and PE behaviors related to familismo is a strength highlighted in the literature that may have been impacted in some capacity by the pandemic.

Lastly, children's use of digital devices increased throughout the pandemic and for many children an increase of literacy enriching activities was fostered by the use of various digital devices (Sonnenschein et al., 2021). However, income can impact a child's access to such digital tools to support learning and the participants in this study reported living in

homes with multiple computers, phones, and ipads suggesting higher income and access to resources. Again, the systemic socioeconomic disparities that Latinx families may experience can place them at a disadvantage with regards to these engagement activities in the home.

School-based engagement. School-based engagement levels are higher for Latinx families when parents have higher education levels, English language proficiency, and when their schools are more welcoming and responsive (Zambrana, 2011). This suggests that definitions or measurement of engagement must be cautious in conceptualizing school-based engagement so that there is not an overrepresentation of behaviors that are indicative of education level and linguistic abilities. Latinx parents identified in focus group data that PE activities they participate in were conceptualized as talking to teachers, volunteering, and attending events (McWayne & Melzi, 2014). It was commonly expressed that parents try to the best of their ability to be present on school campus to either check on what is happening at school or volunteer. However, it was also expressed that it could be a challenge due to work and overwhelming responsibilities. Latinx parents even included activities such as dropping and picking up their child on a daily basis. However, these were not commonly reported by Latinx families as majority of the reported PE behaviors were home-based (McWayne & Melzi, 2014).

Zarate (2007) identified a multitude of Latinx parents engagement practices related to the school setting which included: monitoring their child's school attendance, driving them to tutoring and school activities, knowing when reports cards are distributed and being present when picking up report cards, high academic standards, asking questions about homework, seeking friends or family members to help their child with homework, visiting their child's classroom during open houses, attending parent-teacher conferences,

volunteering to observe the school environment, buying required class materials, going to the library with child, listening to child read, and signing homework when required by teachers. English speaking parents have been reported to participate more in school involvement and extra-curricular activities than Spanish-speaking parents (Kelly-Vance et al., 2006). Both of these PE practices are not within the scope of the home suggesting that home-based practices are more salient for Spanish-speaking families. The authors suggested this could be due to the fact that English-speaking parents have a better understanding of how to be engaged in schools.

Research has demonstrated that PE will look different for Latinx families since parents see the education of their child as the responsibility of the school (Goldenberg et al., 2002). Latinx parents highly value the role and authority of teachers and demonstrate respect towards the expertise of teachers by engaging with their children at home instead of at school (Reese, 2002). As such Latinx parents do not see themselves in a teaching role as this is reserved for the teachers. These parenting behaviors are largely culturally embedded in notions of *respeto* and *obligación*. *Respeto* maintains important elements of interpersonal relationships that include deference to elders, respect, empathy, decorum, and overall seek harmonious relationships (Andrés-Hyman et al., 2006; Calzada et al., 2010). While *obligación* entails the recognition that individuals holding roles of authority, such as teacher, are entitled to a level or respect and obligated to maintain responsibility over those in lower levels of authority (Padilla et al., 2005).

Latinx families that endorse such values may strive to be in agreement with teachers to demonstrate their respect for educators' expertise and refrain from questioning, criticizing, and dictating what teachers' roles are or actions that teachers must take to support their

children as students (Hill & Torres, 2010). Thus, the existing Euro-centric the family-school partnership perspective that is often emphasized in PE frameworks (Epstein, 1995) appears incompatible as parents also expect teachers to respect parent authority or *obligación* within their engagement in the home setting. Relatedly, parents also value the concept of *dignidad* which maintains the need for honor and respect in interpersonal exchanges no matter the social hierarchy (Andrés-Hyman et al., 2006).

Values of *dignidad* are potentially undermined when Latinx parents are not treated as partners and even undermined in their opinions and knowledge regarding their child and parenting practices at home (Hill & Torres, 2010). The degradation of Latinx family values damages the school-family relationship and again highlights challenges of mis-matched cultural values between family and school. The culmination of school bias, discrepant cultural values, discrimination, and other barriers would presumably create immense frustration for Latinx parents that can even attribute to the decrease in PE that occurs with later immigrant generations (Lopez et al., 2000; Hill & Tyson, 2009). It becomes clear that PE in the school may be less common and less important for Latinx families. In particular, parents who are immigrants demonstrate fewer engagement behaviors pertaining to the school setting in favor of PE activities in the home (Seginer, 2006).

The multitude of barriers and culturally situated parenting behaviors that can support Latinx students' success in school are not currently represented in the theoretical frameworks (Ibañez et al., 2004) or taken into consideration within school definitions or approaches to engagement (Hill & Torres, 2010) and even measures (McWayne, 2015). Further qualitative research has been encouraged in order learn more about Latinx parenting practices within the context of PE and student achievement (Ceballo et al., 2017). Overall, much of the outcome

literature does not examine Latinx family engagement practices with regards to its impact on achievement. Even more challenging is the fact that given the dearth of research there are still salient Latinx engagement behaviors that have yet to be identified or understood.

It is difficult to speculate how school engagement will look as a result of the pandemic and as students slowly return to in-person schooling. During school closures, parents no longer had access to engage PE behaviors in the school setting. This resulted in a potential loss of community and resources (Anderson et al., 2021). Parent school partnerships and communication will undoubtedly be affected by the many concerns that accompany the slow return to in-person school and hybrid schooling. Parents are increasingly concerned about their child's learning and how they may have sustained academic loss during the pandemic (Anderson et al., 2021; Hamilton et al., 2022).

Parents also have demonstrated health concerns regarding their child's return to school and the school's safety practices (Anderson et al., 2021). Parent concerns coupled with increased the reported teacher stress and teaching difficulties can present potential challenges to parent-school partnerships (Song et al., 2021). Sonnenschein and colleagues identified common PE supports to include increased communication with the school and teachers in order to implement remote schooling. This could foster potential barriers for some Latinx parents that wish to respect the role of the teacher. With remote instruction, parents now have to make more decisions and even provide instruction to students, something that goes against cultural notions of obligación.

Parent Engagement Outcomes

Scope of the parent engagement outcome literature. Research has demonstrated a clear consensus on the benefits of PE across multiple areas of child development and

achievement. The most prominent and commonly researched outcome of PE is academic achievement. Over the last few decades widely cited meta-analytic research found that PE is significantly related to student academic achievement (Fan & Chen, 2001; Jeynes, 2003, 2010, 2017, 2018; Hill & Tyson, 2009). PE has been found to benefit student achievement in both math (Gilbert et al., 2017; Sheldon & Epstein, 2005) and literacy (Davis-Kean & Eccles, 2003; Dearing et al., 2006; Linver et al., 2002). Social-emotional benefits of PE include higher levels of children's social competence (Parker et al., 1999) and subsequently improves student academic achievement (Hill & Craft, 2003). Student's academic attitudes are also increased by parental involvement (Jeynes, 2003), such as children's reading motivation and student engagement levels (Loera et al., 2011). However, the field still faces the problem that there is not a sufficient research base to conclude what specific PE behaviors contribute to children's achievement (Boonk et al., 2018; Goodall & Montgomery, 2014; Jeynes, 2018).

Measures of PE must place more attention to the specific PE behaviors that engender these positive outcomes for students from both white and Latinx families. Specific forms of PE may be less effective in supporting student achievement and can even demonstrate negative effects on student achievement (Altschul, 2011; Boonk et al., 2018). Henderson & Mapp (2002) found that less salient forms of PE for the general student population included school event attendance, school volunteering, and connections amongst parents. For instance, school volunteering for instance mainly only serves to promote the school's functioning instead of more directly supporting parents and their child's success. Volunteering or attending school events will not even necessarily improve upon the communication or relationships between teachers and Latinx parents that are needed to provide parents with knowledge of how to support their children (Hill & Torres, 2010). Taken together, it is

imperative that measures identify and include the PE behaviors that are most predictive of student success. Consequently, the following includes a review of salient student outcomes associated with specific PE behaviors across home and school.

Outcomes of home-based engagement behaviors. A wide variety of home-based PE indicators are positively associated with student achievement and development, even more so than school-based behaviors. These findings hold true for both the white general population and Latinx families.

Enriching home learning environment. PE behaviors related to fostering a child's home-based learning environment have been shown to benefit student achievement for the general and Latinx population.

Research examining the general student population have identified a positive relationship between literacy outcomes and parent home-based involvement behaviors such as the provision of reading materials and actively reading to their children (Davis-Kean & Eccles, 2003; Linver et al., 2002). This is consistent within meta-analyses that examined PE behaviors related to achievement and identified reading to children as one of the most consistent salient predictors of achievement (Boonk et al., 2018; Jeynes, 2018). Literacy related PE behaviors also engender positive outcomes for Latinx students. Loera and colleagues (2012) specifically examined reading motivations within the context of Latinx family involvement in school and literacy. The results identified a positive relationship among student levels of reading motivation and PE in reading, but not school-based PE activities. Parent involvement in reading activities included providing their child with a variety of reading materials, listening to their child read, and reading to their children. These findings support the inclusion of parent behaviors that pertain to creating an enriching

literacy environment, engaging in reading activities with their child, and reading with or to their children.

Effective ways parents support their child's academic achievement in the general literature includes the provision of educational materials and creating an environment that is beneficial to learning (Boonk et al., 2018; Dearing et al., 2004; Graves & Brown Wright, 2011; Rogers et al., 2009; Sheldon & Epstein, 2005; Stylianides & Stylianides, 2011; Wen et al., 2012; Youn et al., 2012). Cognitively enriching activities is another salient way in which parents foster a child's home-based learning environment to ultimately support children's achievement within the general student population. The positive relationship between these parenting behaviors and achievement is also demonstrated within research specifically examining Latinx parents. Cooper and colleagues (2010) identified that Latinx students attained higher reading performances when Latinx parents more frequently engaged their child at home in enriching activities such as puzzles, nature/science, reading, art, building, games, singing, physical exercise, and telling stories. These home-based engagement behaviors were also positively associated with achievement for white students. However, these cognitively enriching parent behaviors demonstrated a stronger relationship with achievement for Latinx students. In another study, higher academic scores amongst Mexican American students were found to be most strongly related to enrollment of extracurricular instruction, home educational resources, and home enrichment activities between parent and child (Altschul, 2011).

Basic parenting behaviors that create a home structure, such as helping and monitoring homework or parental limit setting, is another prominent home-based PE behavior identified in the general literature. Across the PE literature, parental monitoring,

and limit setting, such as limiting TV time, was not consistently associated with achievement for the general population (McBride et al., 2009; Driessen et al., 2005; Fan & Chen, 2001). Parental monitoring has even been negatively associated with achievement (Xu et al., 2010). However, parental monitoring of children's home activities within Latinx immigrant households has been found to have a significant positive relationship with student math achievement (Gilbert et al., 2017).

Similarly, the overall research literature is inconclusive on the benefits of parent homework help and monitoring on achievement (Boonk et al., 2018). For example, some research has identified significant positive relationships between achievement and homework help (Voorhis, 2011; Tam & Chan, 2009). Conversely, other studies found that homework help was negatively associated with achievement (Domina, 2005; Lee & Bowen, 2006; Rogers et al., 2009). Research specifically examining Latinx students indicated a negative relationship between homework help and achievement (Altschul, 2011). These inconsistent findings could be due to the various ways in which parent's assist their children as there is evidence that parents who are informed on constructive ways to help with homework produce better outcomes for their children (Tam & Chan, 2009; Gonida & Cortina, 2014).

Parent-child communication. Research examining Latinx children and the white general student population suggest that parent-child communication is a salient PE behavior that warrant significant attention in the construction of engagement measures.

Parent-child communication about school was one of the most consistent and salient PE predictors of academic achievement across the general PE literature (Boonk et al., 2018; Jeynes, 2017, 2018). The positive relationship between parent-child communication and achievement also exists for Latinx families (Jeynes, 2017). Frequent communication between

Latinx parents and child regarding school matters demonstrated higher math and reading performance (Valadez, 2002; Hong & Ho, 2005). This relationship was also identified specifically amongst Mexican American families (Altschul, 2011). School-related discussions between Latinx parents and children have even demonstrated a positive relationship with enrollment of advanced courses in math (Eamon, 2005).

Parent support and encouragement has been consistently evidenced to promote achievement across the PE literature (Boonk et al., 2018). Supportive and informative communication was identified in Jeynes's (2018) meta-analytic research as being a pivotal PE component to increase achievement. Important parent encouragement behaviors included the ways in which parents show that they care for their child in general and how their child does in school as well as give praise to their child's academic efforts, performance, and growth (Boonk et al., 2018). Comparisons of Latinx and non-Latinx families evidenced that the relationship between parent encouragement and achievement was even stronger for Latinx families (Martinez et al., 2004).

Academic socialization, that includes the communication of academic aspirations and expectations, has been emphasized as to its importance in academic outcomes (Ceballo et al., 2014, 2017; Fan & Chen 2001; Fan et al., 2012; Juang & Silbereisen, 2002). High expectations and aspirations consistently appear across the general literature as one of the most salient predictors of academic achievement (Boonk et al., 2018; Jeynes, 2018). The meta-analytic research indicates that student achievement and behavior outcomes are associated with high expectations that are both balanced and subtle (Jeynes, 2018). Specifically, parent expectations are not merely just verbal behaviors that communicate high expectations but also actions and messages shared in front of their children over time. High

expectations are more effective when they are high yet realistic, as well as subtle and not forced upon children. When parents communicate high expectations, they expect to see their child to be the best they can be within their life and learning efforts (Carranza, et al., 2009; Jeynes, 2011, 2018). Expectations and aspirations are predictive of children's academic achievement regardless of ethnicity and socio-economic status (Lee & Bowen, 2003; Chen & Gregory, 2010). Parent behaviors that communicate high expectations and aspirations are salient indicators of PE for both white and Latinx families.

PE behaviors of support, encouragement, high expectations/aspirations, and school related discussions have demonstrated consistent support in the literature to engender positive outcomes for both Latinx and the general population. However, in order to accurately identify these salient and specific forms of PE they must be conceptualized as behaviors within the proposed measure. The behavioral mechanisms by which these forms of engagement are enacted is through the communication between parent and child that can be both verbal and non-verbal. The present study's PE measure will include a parent-child communication dimension that captures these three specific indicators of engagement.

For Latinx students, home-based PE has been evidenced to be the most commonly practiced (McWayne & Melzi, 2014; Walker et al., 2011) and most salient predictor of academic achievement (Altschul, 2011). Additionally, the general PE literature indicates that white students benefit from a similar variety of home-based engagement behaviors. The significance and multitude of home-based PE behavior necessitates measures that contain multiple home-based engagement dimensions that present strong construct specificity. In particular, measures that are culturally sensitive for Latinx families must capture the specific

home-based engagement behaviors that are culturally relevant and predictive of Latinx student success.

Outcomes of school-based engagement behaviors. Latinx families have consistently placed less emphasis on school-based PE, yet there is little evidence to suggest that this form of involvement would be beneficial for this population. When comparing across home and school-based Latinx PE, school-based engagement activities have been evidenced to be less beneficial for Latinx students (Altschul, 2011). School-based PE behaviors even demonstrate a lack of significance for the general population (Boonk et al., 2018; Jeynes, 2018).

Traditional parent engagement behaviors in the school setting. Boonk and colleagues (2018) identified that is still unclear across the literature whether traditional PE behaviors that take place in the school or related to the school setting support student achievement. The author's review of the research found conflicting results with regards to school-based engagement behaviors of volunteering, participating in school events, visiting the classroom, and attending school-related meetings. Jeyne's (2018) meta-analysis identified that across the literature the most salient school-based engagement indicators of achievement included parent participation and attendance of school related events and drawing from community resources. Overall, the effect sizes of these specific school-based practices were all weak and were evidenced to be less impactful on achievement in comparison to the effect sizes of home-based engagement. However, school involvement behaviors such as PTA or other school organizations, volunteering, and visiting the classroom has been shown to positively predict literacy and math achievement for the general student population (Dearing et al., 2006; Domina, 2005; Lee & Bowen; McBride et al., 2009).

These traditional school related engagement behaviors may be more salient in the academic attainment of white students, in comparison to their Latinx peers. When school-based engagement was examined through parent attendance of open houses, parent teacher conferences, parent teacher association meetings and school-based events, the association between PE and achievement was identified for white students, but not for Latinx students (Cooper et al., 2010). PE levels in school-based organizations have not been found to be significant predictors for Mexican American student achievement (Altschul, 2011). Valadez (2002) similarly found that Latinx parent participation in parent teacher organizations was not beneficial for student outcomes in advanced course enrollment, whereas their white counterparts demonstrated a significant positive relationship. Volunteering was also not identified as a salient PE indicator in the academic outcomes for Latinx students (Boonk et al., 2018; Henderson & Map 2002; Hill & Torres, 2010). However, Lee & Bowen (2006) found that Latinx school-based PE was associated with higher achievement.

This inconsistency may be indicative of later generation families that may be more acculturated to US culture and education systems. The variability across Latinx American families would suggest that parent participation in the school setting should still be included in the PE measure of this study. Additionally, broader PE theory claims that volunteering represents a way in which parents can model positive school-related behaviors that communicate the importance of education and school activities (Hoover-Dempsey & Sandler, 2005). This modeling is even evident in recent immigrant parents who have limited English proficiency who have reported to still attend school events despite being unable to benefit from the information shared just to model for their children the importance of school (Hill & Tyson, 2009).

Parent-school communication. Jeyne's (2018) meta-analysis of the general student population identified parent teacher partnership and parent-teacher communication as some of the most salient school-based engagement indicators of achievement. Parent teacher partnership had the largest effect size amongst school-based factors but was still not considered a medium effect size. The general research literature has observed multiple ways and tools in which parents and teachers communicate to support child achievement (LaRocuqe et al., 2011; Kraft & Dogherty, 2013; Kraft & Monti-Nussbaum, 2017; Kraft & Rogers, 2015). For example, research examining the use of technology in teacher-parent communication to share students' school standing increased their academic achievement (Kraft & Dogherty, 2013; Kraft & Rogers, 2015). Relatedly, school literacy attainment improved when teachers used technology during the summer to facilitate parent-teacher communication targeted to fostering literacy (Kraft & Monti-Nussbaum, 2017). The use of technology in parent-teacher communication to significantly improve student achievement has also been observed in studies examining students in Brasil (Cunha et al., 2017) and Chile (Berlinski et al., 2016). PE measures need to incorporate dimensions that identify teacher parent communication behaviors that are dynamic and incorporate multiple communication methods.

Understanding outcomes of Latinx parent-teacher communication is particularly complex. Specifically, home-school communication amongst Latinx families has been examined in the context of the challenges that occur. Academic outcomes of PE have a stronger relationship for Latinx families when schools communicate clear and specific school related information (Lee et al., 2012). For instance, the amount of Latinx family contact with the school does not solely precipitate beneficial outcomes, including positive school

perceptions (Smith et al., 2008) when parents feel not listened to or coerced with a high degree of parent-school contact. Negative outcomes of school-family communication can be exacerbated by school approaches to PE such as Epstein (1995) that is based upon school and teacher-initiated engagement. Teacher or school-initiated engagement is often grounded in euro-centric cultural expectations that may go against Latinx cultural values and family practices. When schools subvert Latinx values in the home setting, home-school communication can be particularly harmful to student outcomes and overall parent desire to be engaged in their schools (Hill & Tyson, 2009).

Despite the lack of understanding of school-based behavioral indicators of achievement, parent presence and contact with schools during school-based PE activities have the potential to engender other benefits such as social capital and networks. Parent social capital and networks is a crucial component of student academic achievement and is fostered by PE. High levels of PE has been found to increase parent networks and social capital that empowers families to utilize and access resources both within and outside of their schools (Bryan et al., 2011; Hill & Taylor, 2004; Lee & Bowen, 2006). Consequently, indicators of school-based involvement within measures can still provide insight into the progress of schools to improve family-school partnerships with Latinx families and capture more traditional forms of involvement salient for white families.

Validity Theory & Evidence

Validity Theory. The identification of a guiding validity theory is a neglected but integral component in the instrument development and validation processes (Maul et al., 2016). Consequently, the following presents a discussion of validity and outlines the validity theory and development of a validation argument for the proposed measure. In the context of

measurement, traditional validity approaches identified three types: construct, content, and criterion validity (Borsboom, 2004). Modern theory now conceptualizes validity as a unitary concept that centers around construct validity or the claims that scores or content of an instrument truly measure the underlying construct.

Validity is defined in terms of a carefully constructed argument that presents multiple forms of evidence supporting test score interpretations that are pieced together from varying sources (Cook & Beckman, 2006; Kane, 2006, 2006; Messick, 1995). Messick (1995) first introduced this unitary concept of validity and delineated a process of formulating validation claims through clear and thoughtful delineations of the measure's intended use and interpretations. The present study aligns its instrument development with this theory of validity as an argument and the need to define the construct and understand the consequences of the instrument's use and outcomes. Kane (2006) states that explicating intended use and interpretations of an instrument's scores are a necessity in order to establish complete and sufficient validation of a measure. Kane (2006) specifies this process as the "interpretative argument" that is a part of the larger validity argument approach.

The importance of identifying consequences of an instrument's use comes from the test validity theory of constructivist realism. The constructive realism validity theory appears most appropriate within the context of multi-cultural research of this study. This theoretical consideration within PE measure design is particularly important given that the PE construct is heavily shaped by socio-cultural forces. The validation process of an instrument is frequently excluded during early measurement development when defining the construct and conceptualizing how the instrument's results carry meaning and consequences (Borsboom, 2006). Researchers have sought to validate their measure after the instrument has

operationalized its construct and developed its items. Psychometricians have expressed that this approach is problematic given that validation is not separate from the design of the instrument (Borsboom, 2006). Instead, validity claims and sources of validity evidence should be explored at the beginning of the measurement design.

The lack of validation process early in defining instruments' constructs and consequences of test use is even more problematic considering minority populations, such as Latinx families, face severe negative consequences from use of existing PE measures. Traditional measures create deficit perspectives and inaccurate representations of PE in Latinx families as a result of separating the validation process from the instrument design. The measure developed in this study addresses this inadequacy in existing measures by beginning the validation process early in the development of the PE measure. This was done by reviewing the PE literature, theory, and the PE outcome research prior to making clear definitions of the PE property and test content (i.e. PE domains and items).

The identification of various types of evidence in formulating a validity argument for this study's measure followed The Standards for Educational and Psychological Testing (AERA, APA, & NCME, 2014) that integrates the aforementioned approaches to validity including Messick's (1995). The five standards of evidence for validity include: evidence based on test content, evidence based on response processes, evidence based on internal structure, evidence based on relations to other variables, and evidence based on the consequences of testing.

Evidence based on test content. Content validity evidence indicates a causal relationship between the test items in the present study's measure and the property of PE. This is first evidenced by a clearly defined property or construct. The measure's property of

PE is clearly defined through a new multidimensional and culturally responsive framework of PE that is informed by the extensive review of PE theory, definitions, and research that captures salient PE behavioral indicators for both Latinx and white families.

The definition of PE for the purpose of this measure is to represent the typical parenting behaviors, specifically their tendencies in what parents are most likely to do when engaging in their child's learning and how often. In order to create a PE definition that is a property of persons, it is an important step in defining a property as either a disposition, tendency, or ability. This aspect of defining PE helps to discern whether the instrument is capturing maximal ability in comparison to typical behaviors or tendencies. The PE instrument's intended use is to measure actual levels of how much PE a parent tends to do. Parent beliefs, attitudes, and aspirations are more representative of a measure of a person's disposition rather than parenting practices. Additionally, the degree of parent beliefs, attitudes, and aspirations are frequently higher than what parents actually practice in their parenting behaviors. Thus, observable PE behaviors were the focus when defining PE and identifying items for the measure.

Further content evidence was provided in the rationale for what items were included as behavioral indicators of PE to represent the constructs of each domain (e.g. home-based learning environment and school engagement). This rationale was developed through the process of formulating construct maps of each PE dimension and scoring procedures, which was based upon the literature review of salient PE behaviors and theory.

Evidence based on response processes. Evidence based on response process must indicate that there is a causal link between the property of parent engagement and the processes expected of them when responding to the measure's items. Cognitive interviews

were conducted to ensure that parent response processes to the PE instrument's items were expected and consistent. Item development and its validity was supported by observing how parents categorized concepts and response ratings in addition to how parents defined PE concepts and conceptualized PE behaviors. Cognitive interviews also played a role in the validation process by assessing parent comprehension of items, how parents retrieved information used in their response, how parents synthesized the retrieved information to formulate their response, and of course the actual formulation of their response. This information played a role in the validation process by shaping the development of items and the constructs within engagement themselves.

Evidence based on internal structure. Internal structure of a measure is indicative of the extent that the relationship between the various parts and items of the measure fit the model or theory of PE as a construct. Validity for an instrument's internal structure is indicative of evidence of a valid and reliable factor structure. EFA and CFA analyses provided evidence of the proposed measure's internal structure. This included an evaluation of the PE instrument's dimensionality and fit statistics. However, prior to addressing these sources of validity evidence, a clear theory and framework of the multidimensional PE construct was developed from the literature and use of construct maps in order to facilitate interpretability of factor analytic evidence.

Evidence based on relations to other variables. Evidence provided from the instrument's relationship to other variables involves how the PE instrument's scores correlate to other PE instruments or other variables that are theoretically expected to be related to PE. However, seeking evidence of convergent validity by comparing the proposed measure with traditional existing PE measures would not be appropriate considering that the culturally

situated content of the proposed measure seeks to define this construct differently. Other criterion validity can be supported by evidence based on relations to other empirically salient variables of PE such as academic achievement. Future correlational research would help to identify a relationship between the PE instrument's scores and academic achievement or more proximal student outcomes such as student motivation.

Other instances of this form of evidence included generalizability (i.e. convergent evidence) and measurement invariance. Evidence of the PE measure's generalizability across parent ethnicity was sought through exploration of factorial invariance. Psychometric research seeks to establish measurement invariance in order to be able to make valid conclusions regarding between group differences in factor means. For example, cross cultural comparisons with a given instrument's scores can only be made when measurement equivalence is established (Cheung & Rensvold, 1999). More specifically, measurement invariance is when the PE instrument is interpreted with the same meaning across Latinx and white parents.

Establishing measurement invariance allows researchers to see group differences or assess if there are mean differences at the latent level of PE. However, the research identifying the cultural differences of the PE construct between Latinx and white parents has suggested that it would be inappropriate to make comparisons of mean differences at the latent level. Based upon the PE literature, it is likely that Latinx and white parents will interpret the PE measure in conceptually different ways. Consequently, it is presumed that factorial invariance will find the PE measure non-invariant. However, this will support the validity claim that the construct and PE behaviors captured by the items will have different meanings to Latinx and white parents as a result of cultural differences. The hypothesis of a

non-invariant PE measure for Latinx and white parents also contributes to the validity interpretative argument that the measure should not be used to make group comparisons across parent ethnicity.

Chueng and Rensvold (1999) provided three ways to address when invariance is not established: retaining items through partial invariance, removal of non-invariant items, or utilizing and interpreting non-invariant items as cross-cultural data. The latter is more appropriate as research and instrument tools are needed to identify cultural differences in PE practices within Latinx and white families.

Evidence based on the consequences of testing. As previously emphasized, a salient source of validity evidence is evaluating the consequences of test use and interpretation claims of the instrument. Such validity evidence supports how the PE scores make a difference in terms of its use and interpretation for action.

The first claim for the PE instrument is that it can be interpreted to accurately measure different levels of PE behaviors for Latinx and white parents of elementary aged children in the United States. This claim is substantiated by the use of literature regarding Latinx PE practices and traditional PE practices of white families within the measurement design process. The instrument is not to be interpreted as an accurate measure of school-family partnership, that is often related to parent engagement. The measure is not to be used as a comprehensive examination of school-family partnerships as that would require the PE instrument to have content that reflects parent-teacher relationships and parent attitudes towards schools.

Interpretive claims can be made in regard to individuals at a specific moment or comparative across individuals and time periods. The PE measure is intended to be

interpreted as both a measure of parents' levels of PE at a given moment and to compare changes in parents' levels of PE as a result of school parent engagement efforts. Individual differences in PE levels causes individual differences in the observed behavioral outcomes of the PE measure (i.e. item responses). However, the intended use is only to make comparisons of individual differences of PE levels within ethnic groups. This use claim is evidenced by research demonstrating that PE constructs function differently across ethnicities. Consequently, the instrument is not intended to be used to make group comparisons between Latinx and white families.

The proposed measure's use claims include school use of PE scores to make decisions. For example, schools or teachers can make inferences about parents' levels of PE at a given moment to better understand what in what areas of PE that parents tend to engage in that are most helpful in impacting their child's achievement. Such scores can help teachers support the already frequently practiced PE behaviors to be more impactful as well as seek ways to facilitate underutilized PE behaviors. Schools can use the PE scores as an outcome measure to determine whether PE behaviors increased after school programming or school PE efforts. The PE scores can also inform decision making of what school-family partnership efforts need to be made in various areas of PE (e.g. parent-school communication).

The intended use for the instrument also includes basic research to test hypotheses of whether levels of PE change as a result of school programing or interventions. Additionally, the instrument is intended to be used by researchers to quantify levels of different PE behaviors to evaluate its associations with student achievement and other proximal outcome variables that precede achievement. These use claims are evidenced by the identification of PE behavioral indicators evidenced in the literature to positively predict student achievement.

Furthermore, Hoover-Dempsey theory and research findings identify more proximal student outcomes that precede achievement.

The validity claims regarding the use and consequences of the instrument were made at the beginning of the instrument design process. This allowed an intentional review of theory and research literature that produced the test content (e.g. items and dimensions) that aligned with this validity claim.

Existing Measures of Parent Engagement

Existing measures of PE were identified and reviewed from the general PE outcomes literature within the U.S. and the literature specific to the development of PE measures. The reviewed PE measures and surveys are outlined in Appendix A. The review of PE measures was further restricted to parent self-report instruments and excluded teacher reports. Measures strictly using teacher raters were not reviewed due to potential teacher bias commonly observed with Latinx families and families of low SES (Bakker et al., 2007; Epstein, 1990; Mundt et al., 2015). The initial review of the general PE literature provided information on the shortcomings of traditional measures for both white and Latinx students. The review of PE measures was further limited to those that were culturally sensitive or more inclusive. These measures were used to inform the development of the proposed measure.

Traditional engagement measurement issues. A review of the PE literature revealed multiple problems regarding measurement of PE for the overall parent population.

Parent engagement dimensions. The general PE outcome literature revealed a lack of inconsistent, adequate, and comprehensive dimensions of engagement.

Inconsistent dimensions. Inconsistent dimensions, and thus factors, are a present problem in PE measurement as a result of the broad scope of PE and the variety of PE forms

(i.e. school-based, parent-teacher communication, values, and expectations). For example, some measures of PE encompassed only home and school-based dimensions (Domina 2005; Driessen et al., 2005; Epstein & Salinas, 1993) while other measures included parent attitudes or values (Garcia-Coll et al., 2002; Kohl et al., 2000; Wong & Hughes 2006) and parent-teacher communication (Fantuzzo et al., 2000; Wong & Hughes, 2006) in addition to the two traditional school and home-based dimensions. There is no consensus on what PE dimensions are to be included in the constructs of PE measurement. Additionally, even when instruments measure PE using the same dimensions, the items representing them can vary. For instance, some researchers represent home-based engagement with items regarding homework help, checking homework, and child behavioral or time management (Garcia-Coll et al., 2002; Kohl, et al., 2000) while others include parent efforts to communicate and spend time with their child (Fantuzzo et al., 2000; Walker et al., 2005)

The plethora of PE forms and subsequent dimensions also result in the inclusion of dimensions that are less related to the property of PE. Parent perceptions of the school and parent teacher relationship have been included as dimensions in PE measurement (Kohl et al., 2000; Wong & Hughes, 2006). For instance, Wong & Hughes incorporated dimensions of parent positive school perceptions and parent-teacher shared responsibility to measure PE. This measure included questions asking parents whether they believed their child's school was a good place for the child to be or how much they perceived that solving their child's learning problems were the responsibility of the child's teacher. However, these dimensions and items appear to be more of a representation of the related latent property of school-family partnership. In terms of reflecting on the validity of instrument use for such PE measures, there needs to be a clearer delineation of what exactly is being measured and the

use of the instrument. Research using such measurement can make inaccurate statements about outcomes of engagement when utilizing it as a measure of PE behaviors to assess levels of PE and its association to achievement or other PE outcomes.

Multi-dimensional vs unidimensional. PE measurement is also lacking in its ability to define and capture PE as a multi-dimensional construct. While PE is understood as multi-dimensional construct, PE measurement has been unidimensional or even narrow in its dimensions. Existing measurement often has been limited in its unidimensional scope by measuring mostly school-based forms of PE (Cooper & Crosnoe, 2007; Henry et al. 2011; Hill & Taylor, 2004; Lee & Bowen, 2005; McBride et al., 2009). For instance, BcBride and colleagues (2009) developed a PE instrument within a study to examine PE and only represented the construct through traditional school-based indicators of parent visits to school PTA meetings, school or class volunteering, and attending school events. Such a unidimensional and narrow focus on school-based behaviors is problematic given the literature that these PE behaviors are less beneficial to both white and Latinx students. Additionally, this reflects poor validity with regards to the construct and content evidence of the measure. Even when researchers theoretically define the property of PE as multi-dimensional, they fail to represent this multi-dimensionality within the content of the instrument (i.e. items and domains). For example, Walker, Ice, Hoover-Dempsey, & Sandler (2011) had defined PE through Hoover-Dempsey's multi-dimensional model of PE but restricted the content of their measure to examining only school-based and home-based dimensions.

Separate dimensions vs a general composite. Another measurement design challenge when representing the multi-dimensional nature of PE is whether or not to use separate

dimensions or a general composite of PE. Prominent meta-analytic research suggested that PE should be measured with separate dimensions that are more comprehensive (Boonk et al., 2018; Fan & Chen, 2001). When measures collapse various domains of PE into a general composite, they prevent clearer understanding of the relationship between PE and achievement. For example, Domina (2005) identified constructs of home-based and school-based PE but combined items of both forms of engagement into one score to examine its effects on achievement and behavior.

The utility of PE measures can be improved by distinguishing dimensions of PE so that researchers can examine how different types of PE have varying relationships with achievement outcomes (Hong & Ho, 2005). For instance, Fan & Williams (2010) measured PE through 8 different and separate dimensions when examining their effects on achievement related student outcomes. The authors identified these dimensions as family rules, parent participation in school functions, parental aspirations for student's post-secondary education, parental advising, parent participation in extracurricular activities with kids, parent-school communication regarding student problems, school-initiated contact with parents and parent-initiated contact with school. While this measure is a step in the right direction to measure PE for white families, the questions were more developmentally appropriate for high school aged children. Additionally, since the measurement design was intended for the general student population, its measurement design was not culturally informed to represent Latinx family PE practices.

Salient parent engagement dimensions & indicators. Even when PE is measured as a multidimensional construct, measures fail to include PE dimensions and specific behaviors that are known to be predictive of student success (Boonk et al., 2018; Jeynes, 2018).

Research has provided evidence that cautions against the use of definitions of PE that are too broad when trying to understandings its relationship to academic achievement (Boonk et al., 2018). Boonk and colleagues (2018) addressed the need for a more thorough operationalization of the PE construct and consequently measurement design that targets the salient indicators of achievement in order to understand PE and how and in which ways to support it. PE measures that do not identify and include specific PE dimensions and indicators that are predictive of achievement contribute to the challenges of inconsistent PE dimensions. Measurement design of PE must focus on factors that are evidenced to support children's learning. However, as previously indicated, school-based engagement is over-represented in many PE measures despite being less predictive of achievement. The utility of PE research in understanding and improving PE is diminished when measures lack the appropriate dimensions and PE behaviors (e.g. indicators) predictive of positive outcomes. Consequently, the validity of the PE measurement suffers when the PE behaviors identified in the items are not meaningful contributors to student achievement and development.

Specific behavioral scope. Existing PE measures have also failed to be specific in behavioral scope within the instruments' content.

Variety of behaviors and sufficient items. The specificity of PE measures can be generally limited by failing to capture a variety of different behaviors across the instrument's items. For, instance Cooper and Crosnoe (2007) only measured the quantity of parent-school contact during various school events, meetings or conferences, activities, phone calls or in person communication. Such a measure of PE is both limited to school-based involvement and merely captures parent-school contact with little specificity of what parent behaviors occurred during parents contact with schools. There are many ways that parents can

communicate with teachers and regarding various important topics. For example, there is no distinction whether this communication was regarding a student's learning problems or behavior, or simply to receive information from the school to support the child. Capturing a variety of these behaviors and making such distinctions is important considering the literature that quantity of parent contact with the school does not necessarily lead to better student outcomes (Smith et al., 2008).

The behavioral scope of PE measures can also be limited by insufficient items within a given PE dimension. The use of one or too few items to measure a construct presents issues of poor measurement design and validity. For instance, the Michigan Childhood and Beyond Study used only one item to measure a dimension for two of the five dimensions of PE (Eccles & Harold, 1996). Weak or unstable factors are considered to have three or fewer items (Osborne et al., 2008). Other research presented PE items as yes or no questions regarding whether they have engaged in a particular activity or not, which dichotomizes and simplifies the complex construct (Dearing et al., 2006). These issues are reflected in Kohl's suggestions that in order for research to generate promising findings on PE, the field must clearly generate dimensions that are "specific in behavioral scope, capture the variety of PI behaviors, and consist of enough content items to reliability measure the construct" (2000).

Behaviors vs attitudes. Another issue is that PE measures will include test content of both PE behavior and attitudes. For example, the Parent Reported Involvement Measure consisted of parent positive school perceptions in addition to observable PE behaviors such as parent school-based involvement and parent-teacher communication (Wong & Hughes, 2006). Thus, many of the items were a measure of parent perceptions and attitudes rather than just PE behaviors. This presents challenges to the validity of the measure since the

construct is not clearly defined and its intended use is in conflict by measuring both behavioral tendencies and attitudes. Additionally, measures have even included items that reflect both attitudes and behaviors within just one single dimension. In particular, one PE measure included a home-school conferencing dimension that captured the various ways parents communicate with teachers and their school, such as talking to their child's teacher about classroom rules or talking to their child's teacher on the phone (Fantuzzo et al., 2000). However, one of the dimension's items asked parents to what degree they feel that teachers or administers welcome and encourage them to be involved at school. Such an item is arguably more representative of parent's attitudes rather than PE behaviors. In addition to attitudes, PE measures have also conflated beliefs, values, and aspirations with PE behaviors (Epstein & Sheldon, 2007; Garcia-Coll et al., 2002; Hong and Ho, 2005).

Facilitators vs indicators of parent engagement. A large issue in the measurement of PE is the use of facilitators as indicators of PE. Indicators are the PE behaviors that serve as observable markers of the latent PE construct. Conversely, facilitators are the variables that increase or decrease the actual levels of PE behavior. Examples of facilitators of PE include parents' perceptions of school, attitudes, beliefs, aspirations, as well as family-home resources (Hoover-Dempsey, 1995, 1997, 2005, 2010; Boonk et al., 2018). This confusion in PE measurement can be observed in the overall PE dimensions as well as items of existing measures.

PE is defined broadly as the many ways parents engage in their child's learning with the intention to support their achievement. This suggests that PE is reflective of behavioral tendencies and thus parenting behaviors. When PE measures incorporate items that require parents to directly report their attitudes, values, beliefs, or aspirations, it changes the

definition of the property being measured and is no longer representative of the PE construct.

Many existing measures contain items that ask parents what they think, feel, or believe. These questions attempt to identify attitudes and belief or value systems rather than how these attitudes are reflected in actual observable parenting behaviors. Measures such as Epstein & Sheldon's (2007) elementary and middle school parent engagement measure looked at both attitudes and values such as parent perceptions of school and values of education. Similarly, Hong & Ho (2005) measured PE using dimensions of communication, parent educational aspirations, school-based participation, and supervision at home. The inclusion of educational aspirations was more reflective of parent attitudes or values rather than PE behaviors. For instance, items within this dimension asked how far in school the parents want their child to go. These values and attitudes served as facilitators to PE rather than actual indicators of how much parents tend to engage in their child's learning. Another instance of problematic definitions or dimensions of PE is parent trust in schools. A widely cited study in the PE literature (Kohl et al., 2000) conceptualized parent endorsement of the school as a dimension in addition to true indicators of PE.

PE definitions and thus its measurement design have conflicting components when encompassing both facilitators and behaviors. Such conflicting representation of the PE property prevent the PE construct from being truly measured. Furthermore, the lack of distinction between facilitators and indicators has ramifications on the outcomes of PE such as academic achievement as they do not have the same results depending on how engagement is measured. For example, PE when seen as behaviors has different academic outcomes depending on race and ethnicity while perceptions of engagement do not (Chen & Gregory

2009; Lee & Bowen 2003). PE measurement design efforts must acknowledge distinctions between facilitators and indicators of PE in order to accurately define and measure the construct using behavioral indicators.

In addition to the limitations of traditional measures to accurately measure PE for white families in the general population, these measures are culturally biased and not appropriate for Latinx families.

Culturally biased traditional measures. Existing PE measures have failed to consider culturally informed Latinx PE practices as well as the barriers Latinx families face when trying the engage in traditional ways. The validity of existing traditional measures is problematic in that it is not truly measuring the PE property for Latinx families since this construct looks different for many of these families.

García Coll and colleagues (1996) provided a critical examination of the common practices to conducting research with minority populations that examine processes according to dominant cultures and their practices (i.e. white culture). The authors warned that the use of traditional and inherently Eurocentric measures limits the examination of particular processes or constructs through the lens of the dominant culture. Continued use of traditional PE measures with the Latinx population could lead to inaccuracies or misrepresentation of how engagement functions within Latinx families. The culturally biased nature of existing traditional PE measures is made clear by findings that academic achievement of European-Americans is better predicted by traditional school-based measures in comparison to Latinx Americans (Desimone 1999; Valadez 2002). Such findings indicate poor validity within traditional school-based measures as there is no evidence for it producing the intended consequences in which PE scores should be predictive of Latinx student achievement.

Traditional theoretical frameworks of PE that guide PE measurement design are founded upon Euro-centric understandings of US school culture and parenting. In fact, an overwhelming amount of PE measures are founded upon traditional theoretical frameworks such Grolnick and Epstein (Anderson & Minke, 2007; Fantuzzo et al., 2000; Khol et al., 2000; McBride et al. 2009, Wong & Hughes, 2006; Schueler et al., 2017; Walker et al., 2005). This is problematic considering the prior review of traditional PE frameworks revealed that even an integration of the three were not sufficient to capture Latinx PE behaviors. As a result, many of these measures lack culturally situated Latinx PE behaviors identified in the literature.

As a result of Eurocentric traditional understanding of PE, US school culture can be disconnected from their families' Latinx culture at home (Gibson, 2002). Lack of cultural considerations in PE measurement is exemplified in the failure to acknowledge this cultural mismatch between schools and their families. This includes the cultural discrepancy between school and parents with regards to perceptions of parent involvement.

Parents and teachers differ in their expectation of parent responsibilities and roles within PE. For example, Smith, Stern, and Shatrova found that parents perceived their predominant role in PE was to supervise the completion of homework and motivate their child to work hard and to behave appropriately, while teachers were primarily responsible for the educating of their children (2008). Conversely teacher's expectations of parent involvement included the attendance of school events. Teachers considered parents to value education and be involved when they volunteer and then projected their beliefs of parent educational values upon the academic evaluations of students (Hill & Craft, 2003). PE measures tend to mirror these Euro-centric school expectations of PE by over-emphasizing

school-based engagement within its test content. These measures will miss the PE practices that are consistent with Latinx parent's perceived roles and responsibilities of engagement.

The ethnic mismatch between Latinx families and their schools has severe implications on the perceived engagement of Latinx parents. Early research indicated that when teachers and schools are culturally or racially different from the families they serve, they are more likely to assume those parents lack participation in their child's learning (Epstein & Dauber, 1991). More recent research (Mundt et al., 2015) found a significant positive relationship between ethnic match of teacher and parent with teacher ratings of PE. It appears that when teachers are ethnically matched with their students' parents, they are also likely to be aligned culturally and thus able to acknowledge the ways in which Latinx parents participate in their child's learning, those of which are often invisible to non-Latinx teachers. The likelihood of these phenomenon is problematic considering majority (approximately 85%) of teachers in public elementary and secondary schools are white (Irwin et al., 2021).

The inability of PE measurement design to acknowledge the cultural mismatch between Latinx families and schools is evident in Wong & Hughes (2006) PE measure that identified parent perceptions of how much the "teacher is responsible for solving child's learning problem at school". Latinx parents would likely score low on such questions as cultural practices of *obligación* and *respeto* would consider it inappropriate to take on a significant role within their child's education at school. Other widely cited studies of PE do not incorporate or imbed cultural considerations into the development of PE dimensions (Kohl et al., 2000). Kohl and colleagues measured teacher perceptions of parent's values as a component of PE when examining risk factors for PE. The measure's items asked teachers to

rate their perception of how much they believe that education is important to each family. However, this is problematic as teacher's perceived parent value of education could be convoluted due to a racial or cultural mismatch between themselves and the families.

Overall the PE measurement literature does not appear to produce psychometrically sound PE measures that are culturally responsive for Latinx families, with the exception of one (McWayne et al., 2013).

Inclusive and culturally responsive measures. The need for a new instrument is due to the paucity in the existing literature of culturally appropriate and psychometrically sound instruments that measure the engagement of Latinx parents in the education of elementary-aged children. Only two PE measures were identified in the literature to be more inclusive and attend to the cultural, linguistic, or financial diversity of families. However, one of these measures was not specifically developed for Latinx families and is still in need of further item development (Family Involvement Questionnaire; McWayne et al., 2015). The other PE measure was designed exclusively for use in preschool and Head Start settings despite its focus on Latinx family engagement behaviors (Parental Engagement of Families from Latino Backgrounds; McWayne et al., 2013). The Family Involvement Questionnaire (Fantuzzo et al., 2000; FIQ) and the Participacion Educación de Familias Latinas (PEFL) are the two prominent PE measures within the literature that appear promising in the development towards more culturally responsive and psychometrically sound PE measurement.

Family involvement questionnaire (FIQ). The FIQ (Fantuzzo et al., 2000) is a 42-item PE measure covering three broad dimensions of parental involvement: *school-based involvement, home-based involvement, and home-school conferencing*. School-based involvement includes traditional parent participation in the school or school related setting

like volunteering or planning classroom activities with the teacher. Home-based involvement represents PE behaviors that facilitate learning at home such as limiting TV watching or working with their child on number skills. Home-School Conferencing encompasses the various forms of communication between teachers and parents regarding children's school experiences and achievement.

Psychometric research has established that the FIQ's measure of PE functions similarly across elementary grades, language, family type, gender, ethnicity, income, geographic regions and grades (Roberts & Ginsburg-Block, 2005; Manz et al., 2004). Validation research has been conducted across several other empirical works examining PE (Fantuzzo et al., 2004; Ingram et al., 2007; LaForett & Mendez, 2010; McWayne et al., 2008; Waanders et al., 2007). Fantuzzo and colleagues (2000) provided evidence of high internal consistency and alpha coefficients larger than .80 for all FIQ domains. Subsequent studies continued to establish high internal consistency for the FIQ subscales (alpha coefficients > .80) (Fantuzzo et al., 2000; Manz et al., 2004).

The measure was created to better identify PE levels for low-income minority students, with particular attention to African American elementary aged students. The measure greatly contributed to engagement measurement literature by broadening the PE definitions and behaviors to include low-income families. The FIQ also provided specific parental involvement behaviors across multiple dimensions and is based upon Epstein's theory of PE. In particular, the FIQ clearly identified parent-school communication as its own dimension, Home-School Conferencing, and provided a variety of specific behavioral indicators. While this has been indicated as one of the more salient school-based PE behaviors, few existing measures capture the construct as a separate dimension from

participation-based PE behaviors in the school setting. Consequently, the FIQ informed much of the item development and PE behaviors regarding communication between school and parents in the present study. Yet most the notable contribution of the FIQ is its attempts to broaden definitions and measurement of PE by capturing the construct for low-income families.

However, some of the FIQ items represent behaviors more typical of Caucasian, middle-class culture. Additionally, the development of the measure itself did not take into consideration Latinx culture and the barriers Latinx parents often face. Many of the types of involvement specified in the measure require high fluency in English, a cultural familiarity with unspoken expectations of U.S. parents' involvement in their children's education, and the resources to have enough free time to participate in their child's learning through volunteering in the classroom or school trips. Researchers have found that the measure does not adequately capture school-based Latinx PE behaviors (McWayne et al., 2007). Other psychometric research found that the items for the dimension were not accessible to the actual practices of low-income Latinx families (McWayne et al., 2015). In this study, expert panel review deemed that the items were not appropriate for the Latinx population and recommended broader items that reflect actual practices such as participating in school events that celebrate student accomplishments and culturally informed parenting behaviors.

Participacion educación de familias latinas (PEFL). The PEFL (McWayne et al., 2013) is a 43-item early childhood PE measure for Latinx families. It was developed through focus group data conducted with Latinx families participating in Head Start. This emic approach enabled the construction of a more culturally sensitive measure for Latinx families and breaks away from middle class euro-centric instrument development. The PEFL

measured both home- and school-based parental involvement across a total of 4 dimensions. Home-based involvement consists of three dimensions including *foundational education, supplemental education,* and *future-oriented teaching.* Foundational education represents Latinx culturally informed PE behaviors. Supplemental education entails engaging their child in cognitively and linguistically stimulating activities or classes outside of school and involving their child within the community and family. Future-Oriented Teaching encompasses parent behaviors related to academic socialization and using storytelling to orient and motivate their child to the future. School-based involvement is measured through one dimension, *school participation,* that involves traditional PE behaviors related to the school setting such as volunteering, advocating for their child, and participating in school-based organizations.

The psychometric research has evidenced that the PEFL is a valid PE measure for Latinx families. PEFL CFA models demonstrated that its indicators have strong factor loadings and do not cross load onto other factors (McWayne et al., 2015; McWayne & Melzi, 2014; McWayne et al., 2013). The construct validity of the PEFL has been evidenced across language, parent age, education level, employment, and generational status as well as teacher reported PE levels (McWayne & Melzi, 2014; McWayne et al., 2013). The PEFL also demonstrates itself as a reliable measure. The four factors demonstrated acceptable reliability coefficients of .70. Additionally, the measure has shown an overall internal consistency coefficient of .90. Foundational Education, Supplemental Education, School Participation, and Future-Oriented Teaching factors had acceptable internal consistency of $\alpha = .86$, $\alpha = .81$, $\alpha = .78$, and $\alpha = .71$, respectively.

The strength of this measure is that it is culturally sensitive to Latinx participants due its incorporation of extensive qualitative data examining Latinx family PE practices (McWayne et al., 2013). The item development of the present study's PE measure was significantly derived from the PEFL due to the salient contributions of this measure to embed Latinx family practices and cultural considerations. The most important unique contribution of the measure is the PE dimension of Foundational Education that reflects PE behaviors informed by Latinx cultural values such as *educación* and *respeto.* Foundational Education also includes Latinx PE behaviors identified in the literature regarding parent use of funds of knowledge to support their child and foster their child's independence & pragmatic skills. This dimension has expanded definitions and measurement of PE by including items that represent culturally informed behaviors for Latinx families.

While the PEFL is the closest progress seen to develop a culturally responsive measure of PE specific to Latinx families, the measure is targeted for early education and head start populations. It has yet to be validated for elementary aged students and several of its items are not developmentally appropriate. The validation and measurement development process for the PEFL was based upon examining outcomes relevant to early childhood such as early literacy and school readiness. Conversely, engagement outcomes for elementary aged students are typically examined through academic motivation, degree completion, grades, math and reading academic performance and other school-based outcomes (Hill & Tyson, 2009; Jeynes, 2007). Furthermore, PE behaviors change throughout child development and level of schooling (Boonk et al., 2018; Seginer, 2006). There is even research suggesting that PE is most crucial for elementary aged students and that PE declines and becomes less salient in secondary education (Dearing et al., 2006; Hoover-Dempsey et

al., 2005). Consequently, there is still a need for culturally informed PE measurement for Latinx parents of elementary aged students.

Another component that the PEFL appeared to be lacking was an emphasis on the parent-child communication. School related communication between parent and child has been evidenced to be one of the most significant PE behaviors in Latinx student academic success (Hong & Ho, 2005) yet there is no such dimension in the PEFL. The PEFL Supplemental Education dimension included one item that identifies how often parents communicate with their teachers about their child's learning and behaviors, via any form of communication. This item captures a PE behavior that varies greatly from the scope of behaviors presented in this dimension. Again, this reflects the common problem in PE measurement identified by Kohl (2000) in which the range of behaviors in a given dimension lack specificity.

The need for a Home-based communication dimension is further emphasized by the different engagement behaviors that occur through parent-child communication and have been found to be the most salient predictors of achievement in the literature for both Latinx and general populations. Specifically, parent behaviors in the literature included the expression of high expectations, aspirations, and strong academic values as well as parent encouragement and support (Boonk et al., 2018; Jeynes 2018). The utility of a parent-child communication dimension would ensure the specificity of PE levels that allow schools and families to connect such an important parent behavior to outcomes and interventions.

Culturally Sensitive Parent Engagement Questionnaire (CSPEQ).

The present study has proposed a new PE measure to be representative of a Culturally Sensitive Parent Engagement Questionnaire (CSPEQ). The theoretical foundation of the five

PE dimensions and items for the proposed CSPEQ were developed from a review of PE theoretical frameworks; research literature on Latinx PE and outcomes of PE both broadly and Latinx specific; and PE measurement. The five PE dimensions delineated in the present study's PE measure are: *Bien Educado, Home-Based Learning Environment, Home-School Communication, School Engagement, and Home-Based Communication* (See PE Theoretical Framework Appendix B).

The measure was developed to specifically target parents of children in elementary grades (K-5), as parental engagement is evidenced to be the most salient during this developmental period (Dearing et al., 2006; Hoover-Dempsey et al., 2005). The CSPEQ will focus on measuring PE behaviors for Latinx and white families. Latinx is defined as Spanish-speaking families of Latin American heritage. The study's PE measure focuses on Latinx families of varying socioeconomic, linguistic, and immigrant status backgrounds. The measure was developed using research findings based on Latinx populations that largely consisted of Mexican Latinx families. Thus, the CSPEQ is intended to be used with Latinx American parents primarily of Mexican descent. However, it is important to note the concept of Latinindad, which is the shared Latinx cultural norms and practices that occur across Latin American countries. For example, shared cultural norms of latinidad includes *educación* , *respeto*, and *familismo* (Cruz-Santiago & Ramírez García, 2011; De Genova & Ramos-Zayas, 2004). Consequently, there is potential for the proposed measure to generalize across Latinx sub-groups.

The study's PE measure was developed to measure multiple dimensions of PE behaviors that are culturally responsive to Latinx parents of elementary aged students while also including more global behaviors that are already included in many traditional measures

of PE. The measure is intended to broaden definitions and behaviors of PE beyond traditional euro-centric middle-class white PE within established frameworks of home and school-based parent engagement. Furthermore, the measure was created to utilize parent self-reported behaviors related to the support and participation of their child's learning instead of parent attitudes, perceptions, or aspirations. More specifically the measure targets PE behaviors identified in the literature to be predictive of positive student academic achievement and overall child development. However, due to the lack of research conducted on Latinx PE, the measure also included items that represent empirically identified Latinx parenting practices and behaviors indicative of cultural beliefs of what it means to be engaged in their children's learning that have not yet been evidenced to be predictive of achievement. Latinx values are important to the conceptualization of PE behaviors because of its relationship to parenting behaviors and even outcomes of academic achievement as well as its utility as a protective factor and other positive child outcomes (Ceballo et al., 2017; Kennedy & Ceballo, 2013; Vélez-Ibáñez & Greenberg, 2005; Delgado-Gaitan, 1991)

Home-based involvement includes the ways that parents create a home learning environment that supports their child's educational attainment such as homework, discussing school-related matters with children, engaging children in intellectual activities, as well as other culturally informed engagement behaviors that occur in the home (McWayne et al., 2004; Pomerantz et al., 2007). Three dimensions reflect home-based forms of involvement: *Bien Educado, Home-Based Learning Environment, and Home-Based Communication*.

Bien Educado. The Bien Educado dimension constitutes Latinx culturally informed engagement behaviors that occur in the home or community and incorporates Latinx values. Latinx notions of *educación* plays an integral part of Latinx parenting behaviors and how

they support their child's education (Auerbach, 2009; Olmedo, 2003; Valenzuela, 2010). Parents instill values of *estudios* by excusing children from family responsibilities to complete work or making sacrifices and changes at home to allow their child to focus on their schooling (Goldsmith & Kurpius, 2018; McWayne et al., 2013; Auerbach, 2009; Hill & Torres, 2011; Reese, 2002). Other culturally informed behaviors salient in the Latin literature are the development of children's independence or taking initiative, pragmatic skills, values of *respeto* as well as a focus on discipline and behavioral guidance (Kelly-Vance et al., 2006; McWayne, 2014). The importance of instilling cultural values of *educación, respeto, familismo, ganas*, and *empeños* has been identified to be a salient PE behaviors for Latinx families (Ceballo et al., 2017; Kelly-Vance et al., 2006; Kennedy & Ceballo, 2013; Roche et al., 2012).

This dimension also encompasses the way Latinx parents share with their child or use cultural and social knowledge (identified in the literature as "funds of knowledge") that include PE behaviors such as sharing family stories and histories, instilling cultural values, teaching or taking to their children about skills, and other important wisdom learned through their work or cultural communities (Gonzalez et al., 1995; Lopez et al., 2001; Valencia, 2002; Vélez-Ibáñez, & Greenberg, 2005). A significant amount of the identified culturally embedded parenting behaviors are represented within the Foundational Education dimension of McWayne's measure of PE, the PEFL (2013). Consequently, the construct of Bien Educado and its items are largely derived from McWayne's measure of PE.

Home-based learning environment. This dimension identifies PE behaviors that foster a home environment conducive to learning as well as ways in which parents utilize the community and home setting to supplement their child's education. Home-based learning

environment is indicative of parenting behaviors that create supportive home environment and structure as informed by Epstein's "parenting**"** and "learning at home" dimensions of engagement. This includes creating a home structure through parent behaviors of guiding, reviewing, or monitoring their child's homework, time spent on electronics, and academic progress as well as providing child adequate resources to learn at home (whether bought or made) or the space to do homework. The home-based learning environment dimension is also informed by Hoover-Dempsey's "involvement activities in the home" that similarly includes supervising homework, aiding in studying for tests, practicing math, spelling or other important skills, and reading with child (Walker et al., 2005).

Across the literature engaging in enriching home or community activities that benefit children's cognitive, linguistic, and physical abilities has been empirically supported across the general and Latinx population (Althschul 2011; Boonk et al., 2018; Cooper et al., 2010; Dearing et al., 2004; Graves & Brown Wright, 2011; McWayne et al., 2004; Rogers et al., 2009; Sheldon & Epstein, 2005; Stylianides & Stylianides, 2011; Wen et al., 2012; Youn et al., 2012). Grolnick's cognitive and intellectual involvement domains also identify home-based parent behaviors such as homework help and exposing children to experiences or activities that are intellectually stimulating. Relatedly, Latinx students also benefit from enrollment of extracurricular instruction or activities within the community such as art, dance, a computer skills and other cognitively beneficial activities (Althschul, 2011). These effective parenting behaviors are also identified and supported in the Supplemental Education dimension of the PEFL (McWayne, 2013, 2017) and Home-Based Involvement of the FIQ (Fantuzzo et al., 200). A salient behavior for both the general population and Latinx families to be included as a result of the academic achievement outcome literature are the

engagement behaviors regarding literacy such as reading to children, listing to children read, or encouraging children to select books at home or the library (Boonk et al., 2018; Davis-Kean & Eccles, 2003; Jeynes, 2018; Linver et al., 2002; Loera et al., 2012).

Parent-child communication. Home-based Communication entails the level of parent-child communication regarding school-related discussions, academic related encouragement or support, motivating or setting standards and expectations of education, expressing to their child the values and importance of education (academic socialization), future planning, aspirations and goals of education. The development of this dimension, within the broader concept of home-based parental involvement is a result of the research literature identifying it as one of the most common forms of PE practiced by Latinx families (Altschul, 2011; Boonk et al., 2018; Goldsmith & Kurpius, 2018; Jeynes 2010) and has consistently been the most predictive of achievement overall for the general population and Latinx students (Boonk et al., 2018; Eamon, 2005; Hong & Ho, 2005; Jeynes, 2017; Valadez, 2002). Additionally, communication whether verbally or non-verbally is a mechanism by which salient PE indicators of achievement in the literature are manifested behaviorally. These salient indicators of achievement include high academic expectations and aspirations as well as parental encouragement and support. The salience of these PE behaviors are also reflected within several dimensions across the PE theoretical frameworks of Hoover-Demsey (values, goals, expectations, aspirations) and Grolnick (academic attitudes, expectations, or values). Salient home-based communication behaviors encompass school-related discussions regarding their child's school experiences, learning, and well-being that demonstrates to their children their support, encouragement, and care for their well-being and academic success (Alschul, 2011; Boonk et al., 2018; Eamon, 2005; Hong & Ho, 2005; Jeynes, 2010; Valadez,

2002). Thus, items reflected the frequency in which parents engage in school-based discussion in which parents ask their children about their school-related experiences and well-being.

Communication between parent and child includes future planning communication behaviors as it has been identified in culturally responsive measurement literature (PEFL: McWayne, 2014; FIQ: Fantuzzo et al., 2000) and qualitative literature identifying common Latinx practices or parent beliefs of their educational engagement roles (Goldsmith & Kurpius, 2018; Zarate, 2007). This form of communication entails discussions or stories that orient their child to the future as well as orient them to cultural components of *ganas* and *empeños* (Goldsmith & Kurpius, 2018). PE behaviors in this dimension include frequency of parent discussions related to planning or thinking about their child's future such as high school or higher education. Lastly, this dimension captures parent communication on the importance of education. Communication at home on the importance of education can set academic expectations that is evidenced in the research to be significantly related to Latinx GPA and educational aspirations (Carranza et al.,2009). This dimension is also consistent with theory from Hoover-Dempsey that delineate engagement behaviors to include clear communication of values, goals, expectations, and aspirations, as well as the personal involvement dimension of Grolnick that emphasizes academic attitudes, expectations, beliefs regarding school.

School-based involvement is defined as PE behaviors that occur in school or in school related settings, as well as the parent-school communication that together supports student success. Two dimensions reflect school-based forms of involvement: *School Engagement* and *Home-School Communication.*

School engagement. The *School Engagemen*t dimension reflects the traditional PE behaviors that take place in the school setting or school related activities. This dimension is indicative of the degree and quantity of contact amongst the parent and teachers or other school staff as a result of school-based PE behaviors (Boonk et al., 2018). Despite the lack of conclusive or consistent evidence for school-based PE behaviors that are predictive of achievement (Boonk et al., 2018), these behaviors and its overall construct are emphasized across theoretical frameworks of engagement (Epstein, 1995; Hoover-Dempsey, 1995, 1997, 2005, 2010; Grolnick, 1994). Traditional school-based behaviors have demonstrated to be beneficial for the general population by some research (Dearing et al., 2006; Domina, 2005; Lee & Bowen; McBride et al., 2009). In particular, this dimension encompasses PE behaviors that are more common and beneficial for white or Euro-American students (Altschul, 2011; Cooper et al., 2010; Valadez, 2002). Consequently, these school-based PE activities will be included in order to adequately represent white and Euro-American PE. Additionally, these behaviors may also be representative of Latinx parenting practices for those with higher education levels and English proficiency as suggested in the literature (Zambrana, 2011). The inclusion of such behaviors will also allow the measure to indicate changes in school-based engagement activities as a result of school efforts or interventions.

This dimension is also informed by school-based PE theoretical frameworks from Hoover-Dempsey (Involvement Activities at School), Epstein (Volunteering), and Grolnick and Slowiaczek (Behavioral Involvement) that emphasize parent behaviors such as helping out at school, volunteering for class field trips, attending PTA meetings, open houses, and special events at school. School Engagement items were informed by the FIQ (Fantuzzo et al., 2000) and modified to exclude behaviors that are associated with Latinx barriers and

behaviors less representative of Latinx and low-income families. School-based PE behaviors also encompassed practices reported by Latinx families that include talking to teachers, volunteering, attending events, being present on campus as much as they can such as dropping off and picking up their child on a daily basis (PEFL: McWayne et al., 2013) as well as visiting their child's classroom during open houses, attending parent-teacher conferences, volunteering to observe the school environment, knowing when reports cards are distributed and being present when picking up report cards (Walker et al., 2005).

Activities such as volunteering and going to school events that bring parents into contact with the school, fellow parents, and their teachers are also important to include as the increased contact with the school can engender benefits for Latinx families such as increasing their cultural capital and networking as well as modeling to their children through their attendance and presence at school that school important (i.e. academic socialization) (Bryan et al., 2011; Hill & Taylor, 2004; Lee & Bowen, 2006; Hoover-Dempsey & Sandler, 2005; Hill & Tyson, 2009)

In considering Latinx financial barriers, lack of US cultural knowledge (Hill & Torres, 2010) , and Latinx values of *obligación* and *respeto* (Andrés-Hyman et al., 2006; Calzada et al., 2010; Padilla et al., 2005; Reese, 2002), PE behaviors that include direct planning or leadership of activities with the teachers, participating in school governance, PTO/PTO, or other school-based organizations were excluded from the measure as they have been frequently evidenced to not support Latinx students (Altschul, 2011; Cooper et al., 2010; McWayne et al., 2015; Valadez, 2002).

School-home communication. Effective communication between parent and school supports achievement for both Latinx and the general student population (Cunha et al., 2017;

Berlinski et al., 2016; LaRocuqe et al., 2011; Jeynes, 2018; Kraft & Dougherty, 2013; Kraft & Monti-Nussbaum, 2017; Kraft & Rogers, 2015). The parent behaviors within this dimension reflect upon the various methods parents can communicate with the school, the way in which that communication is conducted, and what is being communicated.

PE behaviors includes parent use of a variety of communication tools and methods to share and receive information with their school. These behaviors are informed by PE theorists Hoover-Dempsey and Epstein. Hoover-Dempsey identifies "Parent-Teacher School Communication" as an important component of PE (1995, 1997, 2005, 2010). Epstein's (1994) "Communicating" domain highlights effective communication through various forms regarding children's school performance and school resources or programs. Research also supports the use of more dynamic and varied methods in parent-teacher communication to support achievement (LaRocuqe et al., 2011 Kraft & Dougherty, 2013; Kraft & Monti-Nussbaum, 2017; Kraft & Rogers, 2015). Items in this dimension will emphasize parent communication through talking and in person communication as Latinx parents prefer to communicate with teachers in an informal and personal manner (Guerra & Valverde, 2007 Nicolau & Ramos, 1990; Zoppi, 2006).

The communication between parents and school staff includes areas of child's learning and development, responsibilities and expectations of teacher and parent roles, child's social emotional well-being with peers, difficulties and successes in school, and school activities and routines. These behaviors were also informed by items on the FIQ (Fantuzzo et al., 2000).

Items representing home-school communication behaviors also included the ways in which parents communicate with schools. This PE dimension included culturally affirming

parent communication behaviors that do not subvert Latinx cultural values such as *obligación* and *respeto* (Hill , 2009; Hill & Torres, 2010; Goldenberg et al., 2002; Lee et al., 2002). Parent communication with schools did not include discussions in which they receive information from teacher's regarding their own parenting practices at home, as it subverts Latinx values within the home setting (Hill, 2009). Parent-school communication behaviors that are culturally incongruent and may be too assertive were not included within the measure (Hill & Tyson, 2009; McWayne & Manz, 2015; Zarate, 2007). For example, parents initiating meetings with school administrators to discuss problems or gather information (FIQ: Fantuzzo et al., 2000). Items were less parent initiated focused and instead inquire whether parents talk to teachers regardless of who initiates.

Home-school communication items are reflective of effective two-way communication. This includes parents receiving and consuming information from teachers and school whether that is through technology, pamphlets, or resources. Bi-directional communication also includes (McWayne et al., 2015) parents sharing information about their child and home parenting practices with the school or teachers. Parents sharing their own information with school staff about their child allows the school to make use of the parent's knowledge and skills used at home.

School-home communication dimension represents the parent-school involvement end of Goodall and Montgomery's continuum (2014) that facilitates parent access and understanding of school cultural expectations of engagement and facilitates social capital within the school to ultimately engender PE with children's learning (Patrikakou & Wissberg, 2000; Kohl et al., 2002; Simon, 2004), the ultimate goal according to this theory. Parent-teacher communication is an important part of the activities along the continuum that

support children's learning since it moves parents towards the active engagement of their child's education by receiving information that can facilitate such behaviors on that further end of the continuum. Communication creates a bridge to connect parents and school so they may have shared knowledge and efforts in the support of children's learning. This is crucial to close the gaps of euro-centric cultural knowledge and expectations that school's implicitly hold and Latinx families are unaware of.

Purpose & Contribution of the Study

The purpose of the present study was the construction and validation of a culturally sensitive PE questionnaire (CSPEQ) for Latinx and White families. This study included the validation of the measure's factor structure and examination of the instrument's psychometric properties through invariance testing to discern if the measure is appropriate for use for both Latinx and white parents of elementary aged children.

Despite that research indicated PE looks and functions differently for Latinx families, much of PE and its measures in the existing literature are generally understood along white, middle-class lines (Lewis & Forman, 2002; Gibson, 2002). The present study addressed the lack of culturally responsive measurement by constructing a measure under a culturally embedded framework that took into consideration Latinx cultural family practices, values, and beliefs. Measurement of PE has failed to consider the barriers that influence Latinx PE in terms of their actual PE behaviors and observed levels of engagement (Hill & Torres, 2018; Ceballo et al., 2017). Consequently, this study sought to address these gaps by developing items in consideration of Latinx barriers. Overall, the development of a culturally sensitive measure responds to the demands within the field that PE measurement be re-evaluated to broaden definitions of construct and make it more inclusive for racially and ethnically

diverse populations (Abdul-Adil & Farmer, 2006; Bower & Griffin, 2011; Jackson & Remillard, 2005; Mattingly et al., 2002).

This study also addressed the need for a comprehensive and multi-dimensional PE measure that is behaviorally specific by expanding upon home-based PE dimensions and identifying PE behaviors throughout the literature conducive to student achievement for both Latinx and white students (Boonk et al., 2018). The identification of PE behaviors predictive of Latinx student's success attended to the field's inability to look at predictive components of engagement for Latinx students as certain engagement behaviors specific to Latinx families are not included in prior measures (Domina, 2005; Driessen et al., 2005; Epstein & Salinas, 1993; Fantuzzo et al., 2000; Lee & Bowen, 2005; Walker et al., 2005; Wong & Hughes, 2006). Furthermore, the development of a multi-dimensional PE measure with salient PE behaviors addresses the needed measurement design improvement that is lacking for the general white population. This study furthers the PE measurement in the field by providing a measure that is more intentional in its inclusion of PE behaviors that are evidenced to support student achievement. The use of this measure in PE research facilitates the field's ability to answer research questions examining the relationship between PE and achievement.

PE is particularly important in early education especially for elementary aged students, while the impact of PE declines starting in junior high (Jeynes, 2010). Such research findings emphasize the need for PE research at the elementary school level and subsequently a need to better understand what those PE behaviors are and how to measure such behaviors for this age group. To date there are no elementary aged PE measure that are also culturally responsive to Latinx families (McWayne & Melzi, 2014). To address this gap,

the present study focused on the development of a culturally sensitive measure that examines PE at the elementary school level.

Lastly, it is important to highlight that the present study and development of the PE measure had taken place prior to the COVID-19 pandemic. The pandemic has altered schools and society as a whole and in ways that the literature is only beginning to understand (García & Weiss, 2020; Saracho, 2022; Jalongo, 2021; Ribeiro et al., 2021; Sonnenschein et al., 2012; Novianti & Garzia, 2020). As school systems begin their recovery out of the pandemic, it is unclear how the pandemic has completely changed PE, and even less is known for Latinx parents. Consequently, it is likely that these changes have impacted the present study's measure since it was largely developed before the pandemic and may not reflect all relevant aspects of parenting behaviors. However, the measure takes significant steps to moving away from traditional school-based engagement and may be better adaptable to our changing educational and family home spaces. As the research has suggested, PE during the pandemic stripped parents' ability to engage within the school setting and instead the demand and types of PE behaviors in the home setting changed drastically (Jalongo, 2021; Ribeiro et al., 2021; Sonnenschein et al., 2012; Novianti & Garzia, 2020). PE in the home environment is potentially more important to understand given the effects of the pandemic. Thus, this measure takes a step in the right direction of what is currently needed.

Furthermore, the study's measure provides progress towards more culturally responsive PE measurement for Latinx families in the elementary setting to foster better understanding of the unique ways these family support their child's learning. This is valuable information given the strong evidence that the impact of the pandemic has only broadened opportunity gaps and exacerbated racial and ethnic inequalities experienced by Latinx

families (García & Weiss, 2020; Irwin et al., 2021; Jalongo, 2021; Landivar et al., 2022; Saracho, 2022; Sonnenschein et al., 2021; Sonnenschein et al., 2022; Tienken, 2020; Wilson, 2020). Taken together, far more research is needed to better understand the overall impact the pandemic has had on its schools, students, families, and PE.

Research Questions & Hypotheses

Research Question	Hypothesis	Measures/Variables
1) Does the proposed general factor structure of the 5 dimensions of PE hold for both Latinx and White parents?	I hypothesize that confirmatory factor analyses will confirm a 5 factor structure that is consistent with the proposed parent engagement theoretical dimensions for Latinx parents.	• CSPEQ • Exploratory & Confirmatory Factor Analysis
2) Does the instrument measure the same construct of PE in terms of its factor structure the same for Latinx and White families?	I hypothesize that the constructs of the PE instrument are not being measured the same way across Latinx and white parents due to cultural differences in PE practices.	• CSPEQ • Demographic questionnaire • Confirmatory Factor Analysis & Invariance Testing
Exploratory research question: Are engagement scores predictive of outcomes of academic achievement?	I hypothesize that there will be a significant positive relationship between levels of PE across the five factors and student achievement scores.	• CSPEQ • Grade 3, 4, & 5 SBAC data • Grades K-5 math and literacy benchmark data • Simple linear bivariate regressions

Chapter 3: Method

Participants

The participants within the present study consisted of a sample of *N*=500 parents of kindergarten through fifth grade elementary aged students within the United States. Participants were recruited from three different sources including Prolific Academic, a central California public elementary school, and parent volunteers recruited throughout social

media and community locations in California and Illinois. A subsample of *n*=7 parents from the central California public elementary school also participated in cognitive interviews to inform the development of the PE measure. Participants also included an additional *n*=22 parents who participated in a pilot study prior to the data collection for the primary study and these parents were recruited from the community and the central California elementary school.

The larger dataset consisted of approximately 64.8% of participants from Prolific (*n*= 324), 22.2% from a central California public elementary school (*n*=111), and 13% from parent volunteers (*n*=65). Parent age ranged from 21 to 84 years old and on average the parent reported age was 37 years old (*SD*=7.72). The sample included 33.6% male and 65.6% female parents, with .8% of parents reporting non-binary or third genders. Seventy-nine percent of parents were married or partnered, 12.2% identified as single parents, 8% were separated or divorced, and .4% of parents were widowed. The average number of children per household reported by parents were 2 children (*SD*=1.06). The parent ethnicity of the total sample presents as follows: 49.4% White, 29% Mexican American or Chicano/a/, 2.8% Puerto Rican, 2.2% Cuban, and 16.6% identified as another Hispanic, Latinx, or Spanish origin. Fifty percent of parents were third generation, 12.3% were second generation, 21.5% first generation, and 16.1% were born outside of the U.S. Primarily English-speaking parents consisted of 78.4% of the sample, while 10.7% were bilingual and 10.5% spoke Spanish as their primary language. Parent socio-economic status (SES) was assessed through parent report of their child's eligibility for free and reduced lunch. Forty-three percent of parents indicated that their child qualifies for free and reduced lunch, while 57% did not.

Parent education varied as 2.9% did not graduate high school, 13.4% were high school graduates, 24.2% had some college or associate degree, 39.7% were college graduates, and 19.8% attended graduate school. Eighty-six percent of parents enrolled their child in public schools while 7.7% enrolled their children in private schools, 3.5% in charter schools, 2% in special education schools, and .2% in magnet schools. Thirty-eight percent of the parents enrolled their children in California, 9% in Texas, 4.1% in New York, 3.9% in Florida, 3.3% in Arizona, 3.3% in New Jersey, 2.9% in Ohio, 2.4% in Pennsylvania, 1.4% in Oregon, Virginia, Washington, South Carolina, Oklahoma, and Colorado, and the remaining 24.7% enrolled their children across the rest of the U.S.

Parents additionally provided background information about their child whom they based their questionnaire answers on. At the time of data collection, the average child age reported by parents was 7 years old (*SD*=1.86) and ranged from 5 to 12 years old. Parent reported child gender was 50.6% male and 48.6% female, while .8% declined to state. Parents reported the current school grade of their child and the grade levels reported in the sample are as follows: 12.3% kindergarten, 8.7% first grade, 11.2% second grade, 10% third grade, 7.1% fourth grade, and 8.1% fifth grade. Majority of children had attended pre-school at 76.3%, while only 23.7% of the sample did not. The language that most children first learned was English (85.2%), while Spanish was the first language for 14% of children, and the remaining .8% had learned another first language. Eighty-four percent of children are more comfortable with the English language, 11% of children are comfortable with both English and Spanish, and 4.3% of children are more comfortable speaking Spanish.

Prolific Academic is an online platform that provides researchers with access to online research participants. Participants are paid based upon study participation time and

tasks. The ability of online platforms to provide a quality subject pool has been evidenced in the research as a viable option for social science research (Kees et al., 2017; Palan & Schitter, 2018; Peer et al., 2021; Peer et al., 2017). Research has even suggested that Prolific provides more diversity in its subject pool, ethical payment standards for participants, and participants are less dishonest in comparison to larger research platforms such as Mechanical Turk (Newman et al., 2021; Peer et al., 2017). However, Newman and colleagues have identified several challenges and subsequent recommendations to procuring quality data through online platforms (2021). Consequently, data collection through Prolific followed guidelines outlined by Newman et al., that included: providing ethical compensation, conducting pre-screening with participants, screening of bots or non-native participants by using open ended questions, and utilizing platforms with diverse subject pools (2021).

Prolific parent participants' average age was 36.94 (*SD*=8.27) and ranged between 21- to 84-years-old. Parent gender was more representative in the Prolific sample in comparison to the other two subsamples, as 57.5% of parents identified as female and 41.6% male. Seventy-nine-point nine percent of parents were partnered or married, 12.1% single, 7.4% separated or divorced, and .6% widowed. Parent ethnicity within the Prolific subsample is as follows: 53.1% White, 29.3% Mexican, Mexican American or Chicano/a/, 4% Puerto Rican, 3.1% Cuban, and 10.5% identified as another Hispanic, Latinx, or Spanish origin. Half of the Prolific subsample parents were third generation at 55.1%, 15% were second generation, 22.4% first generation, and only 7.5% were born outside of the U.S. Eighty-one percent of parents indicated their first language was English, 16.4% Spanish was their first language, and 1.9% indicated another first language. Parents that received less than a high school diploma consisted of .6% of this Prolific sample, 12.7% received a high school

diploma, 26.3% obtained some college or professional training, 42.7% received a college degree, and 17.6% attained graduate level education. Parents whose child qualified for free and reduced lunch consisted of 39.9% of this subsample, while the remaining 60.1% did not. The average child age was 7 years old (*SD*=1.95) and ranged between 5 to 12. Parents reported child data for this sample consisted of 50.2% males and 49.2% females, while .6% declined to state. Kindergarteners represented 27% of children in this sample, 16.1% first graders, 17.3% second graders, 13.6% third graders, 10.5% fourth graders, and 14.9% fifth graders. Majority of children were enrolled in public schools (83.9%), 9% in private schools, 4.6% in charter schools, and 2.5% in special education settings. Seventy-two percent of children attended pre-school, while 28% did not.

The central California elementary school permitted recruitment of parent participants as a result of an existing community partnership with the school and present efforts to support the school's interests in assessing the PE levels in their school. This California elementary school consists of approximately 530 kindergarten through 5th grade students. The school primarily serves a large population of Latinx and White students. The unified school district associated with the school serves approximately 37% Latinx and 57% white families. Households of this districts vary from 11-12% single male householder, 23-25% female householders, and 63-65% with married couple households (all of the presenting data was derived from National Center for Education Statistics).

The average age of parents at the central California elementary school was slightly older than the Prolific subsample (*M*= 40.18; *SD*=8.27) and ranged between 25- to 60-year-olds. Parent gender was predominantly female, as 85.6% of parents identified as female and 14.4% male. Seventy-point nine percent of parents were partnered or married, 16.5% single,

and 12.6% separated or divorced. Parent ethnicity within the California elementary subsample is as follows: 42.3% White, 36% Mexican, Mexican American or Chicano/a/, and 21.6% identified as another Hispanic, Latinx, or Spanish origin. This sample was less representative of other Latinx ethnicities such as Cuban and Puerto Rican. Forty-point-two percent of this subsample's parents were born outside of the U.S., 15.5% were first generation, 8.2% second generation, and 36.1% third generation. The central California elementary represented a much larger sample of parents that have immigrated to the U.S. themselves, with majority of these parents having immigrated from Mexico (90.9%). Additionally, this school sample has a larger percentage of parents that indicated their first language was Spanish (51%), while 48.1% of parents indicated English was their first language, and only 1% indicated another first language.

Parents that received less than a high school diploma consisted of 10.6% of this subsample, 19.2% received a high school diploma, 22.1% obtained some college or professional training, 27.9% received a college degree, and 20.2% attained graduate level education. Parents whose child qualified for free and reduced lunch consisted of 63.2% of this subsample, while the remaining 36.8% did not. This suggests that the central California elementary subsample represented more parents who might be considered lower SES in comparison to the other subsamples. The average child age was 8 years old (*SD*=1.64) and ranged between 5 to 12. Parent reported child gender data for this sample consisted of 48.1% males and 50% females, while .9% declined to state. Kindergarteners represented 13.2% of children in this sample, 13.2% first graders, 21.7% second graders, 23.6% third graders, 16% fourth graders, and 12.3% fifth graders. Eighty-two percent of the children in this subsample attended preschool and 17.5% did not.

Parent volunteers were recruited through various social media sites (i.e., Facebook and Instagram), family serving community organizations, California school programs, and through professional relationships of the researcher. These parent volunteers were largely recruited within the state of California, but additional efforts were made to recruit a representative sample across the United States. Like the Prolific subsample, volunteer parent participants' average age was 36 (*SD*=6.13) and ranged between 24 to 56 years old. Seventy-three percent of parents identified as female and 24% male, with 1.5% identifying as a third gender. A larger percent of parents were partnered or married in comparison to the other two samples (90.6%), while only 6.3% were single and 3.1% were separated or divorced. Parent ethnicity within the volunteer subsample is as follows: 43.1% White, 15.4% Mexican, Mexican American or Chicano/a/, 1.5% Puerto Rican, 1.5% Cuban, and 38.5% identified as another Hispanic, Latinx, or Spanish origin.

A large percentage of this subsample identified their country of origin as either Mexico (35.5%) or Columbia (19.4%). Forty-six percent of this subsample consisted of parents who were third generation, 4.9% were second generation, 26.2% first generation, and 23% were born outside of the U.S. The volunteer sample, similar to the Prolific subsample, consisted of mostly parents who spoke English as their first language (73.4%), 20.3% spoke Spanish as their first language, and 6.3% was another language besides Spanish and English. Parents that received less than a high school diploma consisted of 1.6 % of this volunteer sample, 7.8% received a high school diploma, 17.2% obtained some college or professional training, 43.8% received a college degree, and 29.7% attained graduate level education. Parents whose child qualified for free and reduced lunch consisted of 41.5% of this subsample, while the remaining 58.5% did not. Both the volunteer and Prolific subsample

represented larger populations of parents with higher SES and higher education levels in comparison to the central California subsample.

The average child age was 8 years old (*SD*=1.61) and ranged between 5 to 11. Parents reported child data for this sample consisted of 56.9% males and 43.1% females. Kindergarteners represented 4.6% of children in this sample, 13.8% first graders, 26.2% second graders, 26.2% third graders, 15.4% fourth graders, and 13.8% fifth graders. Seventy-nine percent of children were enrolled in public schools, 15.8% in private schools, 3.5% in charter schools, and 1.8% in magnet schools. Similar to the other subsamples, majority of the children of volunteer parents attended preschool (85.9%) while few did not (14.1%).

Statistical power analyses were conducted through an examination of the literature and power simulation studies related to factor analytic research such as Monte Carlo simulation studies. According to Wolf, Harrington, Clark, & Miller's (2013) power simulation study, when conducting confirmatory factor analyses, a three-factor structure with eight indicators and factor loadings of .5 approximates a sample of 160 in order to achieve adequate statistical power. The study's findings also demonstrated that models with factors that have more indicators did not require a larger sample size in comparison to models with fewer indicators. Researchers have delineated general rules of thumb in which sample sizes of 300 are considered to be sufficient (Brown, 2006; Comrey & Lee, 1992; MacCallum et al., 1999) and minimum sample sizes should be no less than 200 (Hoe, 2008; Singh et al., 2016).

The literature has also identified that sample size considerations must include the number of parameters which have been speculated to be 5 to 10 participants per parameter (Gorsuch, 1983; Nunnally & Bernstein, 1994; Everitt, 1975). The present study's final measure contained between 5-11 indicators per factor and produces 41 total items or

parameters. A sample of 250 to 300 CFA analyses would allow for 6 to 7 participants per parameter respectively. Two separate CFA models were conducted for White (*n*=247) and Latinx (*n*=253) groups as well as a CFA with mixed groups using the full sample (*N*=500). Consequently, these findings support that the present study's sample size is more than sufficient to achieve adequate statistical power for the confirmatory factor analyses.

Measures

Culturally Sensitive Parent Engagement Questionnaire (CSPEQ). The CSPEQ is the researcher developed PE measure for Latinx and White elementary aged children (grades K-5). The CSPEQ identifies PE behavioral indicators of engagement that are evidenced in the literature to engender positive achievement and development outcomes. This PE measure captures multiple dimensions of PE behaviors that are culturally sensitive to Latinx parent PE behaviors as well as traditional PE behaviors. The CSPEQ measures five dimensions of PE that encompass both home and school related engagement behaviors: *Bien Educado, Home-Based Learning Environment, Home-School Communication, School Engagement, and Home-Based Communication.* The Bien Educado dimension consists of items that identify Latinx culturally informed engagement behaviors that occur in the home or community (use of consejos, instilling cultural values, funds of knowledge) and incorporates Latinx values (*educación estudios, respeto, familismo, ganas,* and *empeños*).

The Home-based Learning Environment dimension consists of items representing the ways in which parents support their child's schoolwork and cognitive development at home; utilize the community and home setting to create a learning rich environment. Parent-Child Communication dimension items entail parent-child communication that includes school-related discussions; academic related encouragement or support; motivating or setting

standards and expectations of education; communication that fosters academic socialization; future planning, aspirations and goals of education. School Engagement items represent the traditional PE behaviors that are directly related to the school setting including volunteering, sharing skills, participating in school events or connecting with other parents, school performance monitoring, and seeking support through school. School-Home Communication items reflect the parent's communication with the school with regards to parent-school collaboration; information about the school or resources; child socio-emotional, behavioral, and academic development.

Items & scoring. Items were based upon a five-point scale in which parents rate the frequency of their PE behaviors. The five-point scale response options varied and were informed by parent cognitive interview responses to accurately represent the range of frequency in which those specific PE behaviors occur. The response options present as follows: 1= "Monthly," 2="Once a week," 3="Several times a week," 4="Daily," and 5="Multiple times a day"; 1= "Never," 2="A few times a year," 3="Monthly," 4="Weekly," and 5="Daily"; 1= "Not at all this year," 2="Few times a year," 3="Monthly," 4="Weekly," and 5="Several times a week"; 1= "Never," 2="Rarely," 3="Sometimes," 4="Frequently," and 5="Almost Always." With this scaling, PE progresses from less to more levels of PE depending on the frequency of how often they endorse the items.

Item ratings are summed up for each PE dimension, rather than an aggregate a total PE score across the five dimensions. The final outcome space of the proposed PE measure did not have a higher order factor as that would create one overall PE score that would not emphasize the multidimensional nature of PE and prevents a clearer understanding of the different dimensions (Boonk et al., 2018). Instead, the proposed factor structure of the PE

measure is a correlated factor model. In addition to theory and research derived measurement items, developmentally appropriate items and the dimensions of the proposed measure were derived and modified from the conceptual model of the PEFL (McWayne et al., 2014) and FIQ (Fantuzzo et al., 2000). The final PE measure consisted of 41 questions and the final CSPEQ Qualtrics survey can be viewed in Appendix C.

Demographic questionnaire. Parent and child demographic information was collected through a demographic questionnaire that was be completed by parents. Demographic information included gender, age, education level, school enrollment data, generational status, family, and language data. PE behaviors have been evidenced to vary depending on parent gender, language, generational status, and education level (Kim & Sheridan, 2015; Mcwayne et al., 2016; Plunkett & Bamaca-Gomez, 2003; Plunkett et al., 2009). Child age, grade, and school enrollment data were collected to screen out parent participants whose children were homeschooled or not in kindergarten through 5th grade. Additionally, child age and gender has been evidenced in the literature to impact PE behaviors (Jeynes, 2012; Mcwayne et al., 2016; Plunkett & Bamaca-Gomez, 2003; Plunkett et al., 2009). Appendix D presents the demographic questionnaire form.

Procedure

Item development & pilot testing procedures. Item development and instrument design procedures followed the "construct modeling" approach (see Figure 4) delineated by Wilson's *Constructing Measures* (Masters et al., 1990; Wilson, 2004). First research literature and theory of PE was reviewed in order to develop construct maps, one for each dimension of PE (Appendix E). Construct maps were informed using the previously discussed proposed theory derived from established PE frameworks, models and items of

existing measures, and the Latinx PE research literature. Then items were designed based upon the literature and construct maps. The third part of the approach, outcome space, included development of the scoring rules of items, determining raters, and rubrics or scoring guides. The last phase, measurement model, required the application of a statistical model to the dimensions and items in order to evaluate the psychometrics of the measure. Factor analytic models were the formal psychometric model utilized for this phase of instrument development.

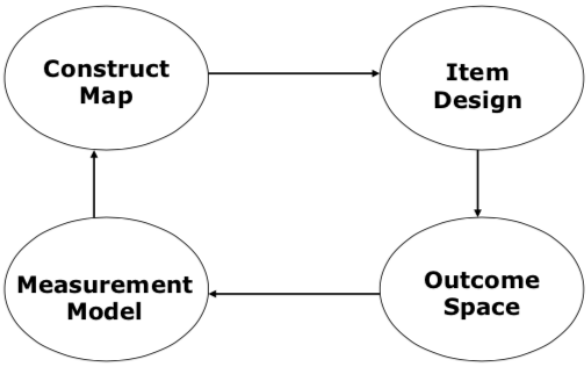

Figure 4. Construct Modeling Approach to Instrument Design

However, there is an iterative process before conducting the measurement model phase in which the researcher refined the measure's items by conducting cognitive interviews that informed changes to the instrument that were then addressed by revisiting the first three "building blocks" of the instrument design approach (Wilson, 2004). PE items were completed by a small sample of participants using the cognitive interviewing procedures that included both think-aloud and probing techniques as described by Wills (2005). Appendix F outlines the interviewing procedures. The sample of parents that were recruited for cognitive interviews included Latinx and White parents from the central California elementary school with various levels of English language proficiency and school perceived engagement levels. Parent interview volunteers were recruited by administrators and teachers familiar with

parents that hold such attributes. Results from parent interviews were recorded via audio recording, transcribed, and used to refine the PE measure items.

Cognitive Interviews. The initial draft of the PE measure consisted of 54 items (see Appendix G for full list of items and the item's source) and was administered during cognitive interviews. Parents indicated during the interviews the need for examples to clarify the questions and facilitate the cognitive process when a parent mis-interprets or processes questions in a way that was unexpected. Parent cognitive processes demonstrated a multitude of items that required more specificity or changes in wording to improve clarity and readability, especially to guarantee comprehension for parents with lower reading level abilities. Parents identified redundant items that could be removed or combined with other items. Cognitive interviewing also provided insight into the broad range of frequency in which certain parent behaviors occur across the various questions. Consequently, the rating options for the five-point scale were expanded beyond the "Never, Rarely, Sometimes, Frequently, Always" anchors that were used in the initial measure. Parent cognitive interview data was used to develop the four different rating options used in the pilot and final measure. The following summarizes the item changes that were made to the instrument as a result of the cognitive interviews. A list of items that were removed or changed as a result of the cognitive interviews is provided in Table 1.

The Bien Educado dimension had multiple items that required changes in wording to improve clarity and readability for parents. This included items 23, 24, 30, and 31. The researcher also added examples and specificity to items 26, 30, and 31 to facilitate parent cognitive processes based on parent feedback and responses. Home-based Learning Environment dimension had item 34 removed and combined with item 28 as parents

indicated that the parenting behaviors and its examples overlapped. Parents identified item 43 and 44 to be redundant. Based upon parent interview data, item 43 was removed and instead the parent behavior of homework monitoring was added to item 44's list of examples. Items 37 and 28 was re-worded to improve clarity and readability, while items 36 and 42 were supplemented with examples identified by parent responses to facilitate cognitive processes.

School-based Engagement dimension items demonstrated multiple redundant items. Items 4 and 15 were considered by parents to be redundant as parents reported seeing social events as related to general school events referred to in question 4. As a result, item 15 was removed, and social events were added to the school related activities hosted by the school that parents can attend within item 4. Item 13 was removed as parents indicated that it was similar to item 6. After which item six was adjusted to expand upon various ways parents volunteer or share their skills with their school. Item 11, inquiring about parent attendance to school or class trips, was removed after cognitive interview data suggested that this was a very limited parent behavior reserved for parents that were privileged enough to have flexible work hours or did not work at all. Latinx parents reported on significant barriers to being able to attend entire class or schoolwide trips. Item 2 wording was changed for clarity and removed "attendance" due to it being a double-barreled question as indicated by parent responses of what PE behaviors comes to mind depending on what they are monitoring for their child. The wording in item 8 was also slightly adjusted to increase clarity and readability.

School-home Communication dimension items additionally went through changes in wording to improve clarity, including items 49, 51, and 52. Examples were added to items 45 and 48 to again support parent ability to understand and think through appropriate instances

of this behavior to make an accurate response. When parents answered items in the *Parent-Child Communication* dimension, parents reported that 9 and 10 were redundant and item 9 was removed after. This decision was corroborated by parent responses that identified item 10 as clearer. Items 14 and 19 were removed due to parent feedback that this was not a common parent activity for younger elementary aged children, while parents with children in 4th or 5th grade engaged in these parent behaviors more commonly. Items 1, 10, 12, 17, and 21 received adjustments in wording for clarity and to create further specificity so that the items could better align with its content domain.

Table 1
Initial CSPEQ Item Changes by each dimension of Parent Involvement

Bien Educado Dimension
23. I teach my child that his/her behavior has consequences.*
24. I excuse my child from helping at home so they can focus on homework and learning.*
26. I teach my child skills or other important things I learn from my job or community.*
30. I teach my child how to behave in different situations.*
Home-Based Learning Environment
28. I help my child learn in every day places (such as public transportation, playground, supermarket).*
34. I take my child to places in the community to learn (library, museum, zoo, aquarium).**
36. I encourage other family members to do activities with my child.*
37. I put my child in activities or classes outside of school (for example boys & girls club, sports team, art, dance, computers).*
42. I help my child with homework or ask questions about their homework.*
43. I monitor my child's homework (whether it is completed or turned in; how much time they spend doing it).**
44. I monitor my child's activities at home (set wake up and bedtimes; limit my child's time spent on tv, computer, tablets/ipad, or phone; check if homework is completed/turned it or how much time they spend doing homework).*
School Engagement Dimension
2. I monitor my child's school attendance and school performance.*
4. I go to events, meetings, or parent teacher conferences at my child's school.*
6. I volunteer at my child's school.*
8. I seek help at my child's school so that my child receives what she/he needs.*
11. I go on class or schoolwide trips with my child.**
13. I donate my skills and time to my child's school.**
15. I participate in social activities at school.**
School-Home Communication Dimension
45. I talk to my teacher about resources, information, and practices that happen at my child's school.*
48. I read or watch information about my child's classroom or school that is shared with me.*
49. I talk with my child's teachers about my child's behavior at school.*
51. I talk with my child's teachers about personal or family matters.*

52. I talk to my child's teachers about his/her daily routine.*

Parent-Child Communication Dimension

1. I talk to my child about their learning efforts.*
9. I ask and talk about my child's daily school experiences with her/him.**
10. I talk to my child about what they learn or do in school.*
12. I share stories about when I was in school.*
14. I talk about plans for high school with my child.**
19. I talk about plans for after high school (careers, college or trade school) with my child.**

Note. * Item changed based on parent interviews to improve clarity or content domain ** Item removed

Pilot. Prior to the administration of the finalized PE measure to the full sample, the researcher piloted the second draft of the PE questionnaire to conduct basic item analyses in order to reduce items and finalize the questionnaire. This second draft of the PE measure, consisting of 46 items, was piloted with a small sample (N=22) of parents from the central California elementary school and parent volunteers from various communities. The criteria used to inform changes to the measure included review of item correlations within their respective proposed factors, qualitative parent data, parent engagement theory, and standards of validity evidence (AERA, APA, & NCME, 2014; Messick, 1995). Item skewness and kurtosis were examined using criteria as specified by Curran, West, and Finch (|2.000| for skewness and |7.000| for kurtosis; 1996). Items' skewness and kurtosis indicated that data did not meet assumptions of normality and non-parametric tests of correlation were required. Thus, Spearman's Rho correlations were conducted to examine a correlation matrix of all items.

Bivariate correlations were examined to assess for multicollinearity. Items were removed if their correlation was at or above .9; however, pilot data did not indicate any redundant items that demonstrated correlations .9 or higher. Items were then subject for removal by identifying items that correlated poorly to items in its proposed factor and other items in the measure. Additionally, final decisions for item removal were decided using

qualitative parent data and evidence for validity based on test content domain (AERA, APA, & NCME, 2014; Messick, 1995). A list of items that were removed as a result of the pilot are listed in Table 2.

Table 2.
Pilot CSPEQ Items Removed by each dimension of Parent Involvement

Bien Educado Dimension
4. I teach my child to show respect to others.**
Home-Based Learning Environment
8. I monitor my child's activities at home (set wake up and bedtimes; limit my child's time spent on tv, computer, tablets/ipad, or phone; check if homework is completed/turned it or how much time they spend doing homework).**
School-Home Communication Dimension
28. I talk to my child's teachers about his/her daily school routine.**
Parent-Child Communication Dimension
3. I tell things to my child to encourage them and their learning.**
18. I talk with my child about how difficult it is to not have an education.**

Note. **items removed after pilot

Items 3, 4, and 8 were removed because the items were negatively correlated with a significant number of items on the measure, did not correlate strongly with other items in its proposed factor (with the exception of one item), and lacked relationships to other items on the measure outside of its proposed factor. Qualitative parent data also indicated that parents viewed item 4 as redundant to other items in its proposed factor (36 and 40). Similarly, Item 18 was removed as it was negatively correlated with many items on the measure and did not correlate strongly with other items in its proposed factor as well as other items on the measure (only 3: BE 39, 41, 43). Additionally, qualitative parent data indicated that the wording of the item 18 engendered negative reactions to respondents and did not represent parent behaviors that express to their children the value of education. This suggests that it does not cover the area of its content domain as intended and should be removed.

Items 13, 25, 32, and 38 did not demonstrate relationships within their proposed factor but demonstrated relationships to other items and proposed factors in the instrument.

Additionally, these items cover a unique aspect of their respective content domains. Thus, these items were retained to be examined in the EFA. Parent qualitative data identified several items that were considered redundant. Item 28 was removed as it was reported to be redundant to item 22. Parents reported that item 22 encompassed the content of teacher-parent discussion regarding school routine (item 28) and considered school routine as equivalent to school practices. In examining content domain, item 28 represents content that is overlapping with parent-teacher discussions regarding school practices and thus its removal would not impact the instrument's ability to cover all areas of the PE construct. Several items were flagged as redundant by parent interviewers but retained after examining content validity, including items: 36 and 40; 41 and 43; 26 and 46; 22, 29, and 46. PE theory and outcome research provided evidence that these aforementioned items cover a unique component of the parent engagement content domain that supports the content validity of the instrument. At the conclusion of the pilot analyses a total of 41 items were included in the final measure (See Table 3).

Table 3
Final CSPEQ Items by each dimension of Parent Involvement

Bien Educado
8. I teach my child how to take care of his or her things.
31. I teach my child that the way he/she behaves has consequences.
32. I excuse my child from helping at home so he/she can focus on homework and learning.
33. I make sacrifices at home so that my child can focus on being a student.
34. I teach my child skills or other important things I learn from my job or community (values from work, skills like tasks with numbers, cleaning, business, and crafting).
35. I help my child follow the rules and expectations.
36. I teach my child about my family's country's traditions, food, and music.
37. I teach my child how to behave in different situations or places (such as social situations, home, school, doctor offices, other family members' homes, library).
38. I teach my child who his/her family members are (family history, ancestors, talk about current family members).
39. I teach my child to ask for help when he/she needs it.
40. I encourage other family members to do activities with my child (either immediate or non-immediate family).
Home-Based Learning Environment
3. I tell stories or read to my child (in any language).
4. I have my child take part in activities I do around the house (cooking, cleaning, fixing things).

5. I listen to my child read to me (in any language).
9. I have my child participate in after-school activities or classes (for example Boys & Girls club, Girls inc., sports teams, art, dance, computers).
10. I make sure my child has a regular place and time to do schoolwork at home.
11. I support my child while she/he does homework (asking my child questions, simply sitting with them, directly helping myself or through another family member, or hiring a tutor to help).
16. I help my child learn in everyday places or community learning spaces (such as public transportation, playground, supermarket, library, nature/gardens, church/temple, museum, zoo, aquarium, parks, community events).
17. I bring home educational toys and learning materials for my child (flashcards, books, videos, notebooks).

School Engagement

12. I volunteer or donate my skills and time to my child's school.
26. I keep track of my child's school performance.
27. I go to social events, meetings, workshops, or parent teacher conferences at my child's school.
29. I look for help at my child's school so that my child gets what she/he needs.
30. I talk with other parents about my child's school (such as events, staff, students, class activities).

School-Home Communication

18. I talk with the teacher about the resources, information, and practices that happen at my child's school (such as tutoring programs, school-wide programs, school curriculum).
19. I talk to the teacher about how we can work together to help my child be successful (our roles, values, and expectations).
20. I share with the teacher what I or my family do with my child at home (activities, family gatherings, rules or responsibilities, dealing with child's behavior).
21. I read or watch information about my child's classroom or school that is shared with me (such as information on the school's website, classroom newsletter, online communication tools like ParentSquare or Google Classroom).
22. I share my knowledge about my child's behaviors, strengths, and weaknesses with my child's teacher.
23. I have friendly or personal conversations with my child's teacher about topics other than school.
24. I talk to the teacher about my child's learning.
25. I talk to the teacher about how my child gets along with his/her classmates at school.
41. I talk with the teacher about how my child behaves at school.

Parent-Child Communication

1. I talk to my child about what he/she learns or does in school.
2. I ask my child questions to help him/her learn.
6. I talk to my child about how hard she/he tries or works in school.
7. I talk to my child about how he/she gets along with others at school (such as other students, teachers, school staff).
13. I tell my child stories about the lives of others to motivate my child to become someone in life.
14. I tell my child stories about when I was in school.
15. I talk to my child about how much I love learning new things.
28. I talk with my child about what I would like her/him to be in the future.

Data collection. Parent interview data during the measurement development phase was collected using computer audio recording. At the start of parent interviews, participants were provided with a consent form that was reviewed by the researcher (Appendix H). Consent was obtained prior to beginning the interview process. Parents were encouraged during interviews and on the questionnaire that there are no correct answers or one right way

of being involved in their child's learning. Parents were informed that there are many different ways and levels that parents are engaged in their child's learning. Parents participating in the interviews were informed that they have the option to skip any probing follow up questions from the researcher. A Spanish translator was present to translate the interview for both the parent participant and researcher. Recorded parent interviews did not contain any identifiable information. Recordings from the interview sessions were transcribed omitting any identifiable information and were immediately deleted upon the completion of the transcription. Parent interview recordings and transcriptions were located on a password protected lab laptop that was kept within a locked UCSB office.

The pilot data was collected using both paper and online survey forms of the PE measure with unique identifying research IDs (Appendix I). The paper forms were disseminated by the central California elementary school's administrators along with a consent form. The de-identified completed PE measure and consent forms were collected by school administrators and shared with the researcher. Online Qualtrics anonymous survey links and consent forms were disseminated via email and online social media platforms to parent volunteers. Consent forms for the pilot study can be viewed in Appendix J.

The full parent engagement survey administration, consent forms (Appendix K-M), and demographic data were collected using an online survey via UCSB's Qualtrics software. Volunteer parent participants were recruited utilizing a research flyer (Appendix N) via social media outlets such as Instagram and Facebook parent groups, Graduate student, and Latinx Ph.D. student research groups. Volunteer parents were also be recruited via emails reaching out to various California school programs and family-related community organizations to seek permission to share electronic flyers seeking parent

volunteers. Permission from administrators of community organizations or moderators of social media groups were obtained prior to the dissemination of the research flyers to recruit parent volunteers. The researcher's contact information was shared on electronic research flyers. Additionally, researcher contact information was shared via email and consent form with social media groups and various school and community organizations. Parents within the central California elementary school received consent forms, study details, and questionnaire via school-based online communication platforms and teacher/school staff emails. The school principal provided a letter expressing the purpose of data collection to inform school practices and measure school program outcomes. Qualtrics survey links were disseminated directly to Prolific parent participants through the Prolific website.

A research ID was assigned to each Qualtrics survey and completed survey data was immediately stored within the UCSB Qualtrics system in a de-identified form. Additionally, parent volunteers and parents of the central California elementary school received the option to enter a prize drawing for fifty-dollar Amazon gift cards at the end of the Qualtrics survey. Parents entering the prize drawing were able to do so anonymously by entering in a separate anonymous Qualtrics link that sends them to a second Qualtrics survey in order to report their email to possibly receive the prize drawing.

To protect the confidentiality and privacy of participants, the researcher disseminated anonymous online Qualtrics survey links to all research participants. Additionally, the Qualtrics survey was encrypted to remove participant IP addresses so that they will not be stored in the Qualtrics online data and cannot be connected to their responses. All participants were advised within the online survey to complete the questionnaire in a private space and within a secure network if they wish to reduce confidentiality and privacy risks.

Qualtrics data and its corresponding Qualtrics account is password protected and was only accessed by the researcher. Parent participants from the central California school partnership were informed that teachers and school administrators will have access to parent responses as a part of school practices. Parent volunteers and Prolific participants were not asked to provide any identifying data that could connect their identity with their responses. Approval from the UCSB Human Subjects Institutional Board has been obtained prior to conducting any of the interview, pilot, and data collection procedures.

Data Analysis Plan

Confirmatory factor analyses (CFA) and multiple groups invariance analyses were performed using Mplus 8.0 (Muthén & Muthén, 1998-2017) to confirm the theorized factor structure of the study's measure, and then test measurement invariance of the five-factor PE model across ethnicity. The decision to begin measurement validation with a CFA rather than an exploratory factor analysis (EFA) was supported by the literature indicating that CFA analyses are more appropriate when there is a strong a-priori theory regarding the factor structure and its items (Henson & Roberts, 2006; Hurley et al., 1997). In this case, the present study reviewed a significant amount of the PE theory literature, research, and previously established measures to formulate a strong a-priori theory of the proposed factor structure and its items. Additionally, factors and items within the proposed factor structure were informed and adapted from previously well-established PE measures. It is important to note that items were developed intentionally for each factor. EFA analyses do not consider the theoretical structure, while CFA analyses do, implicating that the use of CFA without prior EFA analysis would be more appropriate for the present study.

Prior to the factor analyses, IBM SPSS (version 28) was utilized to screen the data to check that assumptions of univariate and multivariate normality were met. Then item analysis was conducted by examining an item correlation matrix to discern if there were items that are highly correlated and subject for removal. Reliability was additionally evaluated using the Cronbach's alpha coefficient and adhering to the following interpretation criteria: $\alpha < .5$ = unacceptable; $.5 \leq \alpha < .6$ = poor; $.6 \leq \alpha < .7$ = questionable; $.7 \leq \alpha < .8$ = acceptable; $.8 \leq \alpha < .9$ = good; and $\alpha \geq .9$ = excellent (Heppener et al., 1999).

Factor Analyses. First two separate CFAs were performed for Latinx and White parent groups using Mplus 8 (Muthén & Muthén, 1998-2017) to confirm and evaluate model fit of the proposed five-factor structure. Separate group CFAs based on parent ethnicity were conducted to evaluate the fit of the model for the different parent groups given the literature that PE can look and function differently across Latinx and White parents (Aikens & Barbarin, 2008; Altschul, 2011; Ceballo et al., 2010; Ceballo et al., 2017; Garcia-Coll et al., 2002; Goldsmith & Kurpius, 2018; Hong & Ho, 2005; Jeynes, 2017; Lee & Bowen, 2006; McWayne et al., 2013; McWayne, 2014). This approach allowed the researcher to observe the model fit across groups with the hypothesis that there a likelihood the model fit would be different across groups. Additionally, these models served as the baseline models for each parent group before conducting multiple groups invariance tests.

Weighted least square mean and variance adjusted estimation, or WLSMV, was used as recommended for categorical variables by Muthen and colleagues (Muthen, 1984; Muthen & Satorra, 1995; Muthen et al., 1997). Oblique Geomin rotation was applied to allow for the possibility that emergent factors are correlated. Evaluation of goodness of model fit were informed by the following criteria: chi-square test of model fit, root-mean-square error of

approximation (RMSEA), comparative fit index (CFI), and standardized root-mean-square residual (SRMR), and factor loadings.

According to Bollen (1989), significant a chi-square test is not an unusual occurrence and chi square fit typically find poor model fit when data is non-normal as is typical for the categorical data in the presenting study (Hutchinson & Olmos, 1998). Thus, it will be considered acceptable to retain models despite the significant and large chi-squares. Hu and Bentler (1999) suggest that SRMR values below .08 indicate reasonably good fit. Brown (2015) suggests that "close fit" is obtained when RMSEA is < .05 and CFI values are greater than .95; acceptable model fit is achieved when RMSEA is < .08 and CFI is in the .90 - .95 range.

The CFA analysis sought to confirm an adequately fitting factor model that included five factors that have their own grouping of indicators with high loadings to that one specific factor, in comparison to other factors. Additionally, across all the factors, each indicator should have one primary or highest loading factor that is considered salient at .30 or .40, while other cross-loading/secondary loadings are low and non-salient (Brown, 2015; Thurstone, 1947). In the current analysis, indicators with primary factor loadings > .3 and secondary loadings < .3 were retained, following Brown's (2006) suggestion that factor loadings greater than .30 or .40 indicate that an indicator is meaningfully related to a factor. Lastly, modifications indices were examined to identify areas for potential improvement in model fit.

However, should the theoretical model of PE for Latinx families not be supported by adequate model fit after attempts to improve the model, the researcher planned to re-visit the factor structure using the established theory and EFA for the Latinx subsample to identify a

more parsimonious model. In this case, evaluation of goodness of model fit the for EFA would be informed by the same criteria noted previously for the CFA analysis: chi-square test of model fit, root-mean-square error of approximation (RMSEA), comparative fit index (CFI), and standardized root-mean-square residual (SRMR), and factor loadings. Additionally, the decision to obtain the optimal number of factors were based Kaiser's criteria of eigenvalue > 1 rule (Kaiser, 1960), Cattell's scree test criterion (Cattell, 1966), and prior theory of PE dimensions. However, if CFA analyses demonstrate adequate model fit for the two different models, then separate invariance measurement analyses are to be conducted based on parent ethnicity. Following invariance measurement analyses, a baseline CFA model would be conducted for the full sample, including both Latinx and White parent groups.

Multiple groups analyses. Measurement invariance is evaluated according to the procedures outlined by Svetina, Rutkowski, and Rutkowski (2020), in which the CFA model fit is tested and subsequently parameter constraints are progressively added with each model. First, tests of configural invariance are conducted to fit the model in both groups allowing all parameters to be free in order to examine whether the same factors and items that load upon them are estimated in each group. This model then serves as the parent model for the subsequent test of metric invariance in which all factor loadings are constrained to be equivalent across both groups.

Finally, a test of scalar invariance is conducted in which both the item thresholds and factor loadings were constrained to be equal across the two groups. Measurement invariance for across groups is determined by non-significant changes in model misfit with each model specification. Criteria for detecting measurement invariance is identified within Chueng &

Rensvold's guidelines (2002) of adequate model misfit criteria that is based upon changes in the CFI index, in which a ΔCFI of $\leq .01$ is indicative of a non-invariance across both groups and significant changes in model misfit.

Chapter 4: Results

Preliminary Data Screening

Preliminary data screening using IBM SPSS (version 28) was used to assess if assumptions for univariate and multivariate normality were seriously violated. Initial screening of all 41 indicators' means and standard deviations fell within the expected range upon examination (Table 4). As illustrated in Table 4, skewness and kurtosis values generally fell within the acceptable criteria as specified by Curran, West, and Finch (|2.000| for skewness and |7.000| for kurtosis; 1996). Assumptions of normality were violated for item 10 as it demonstrated significant negative skewness and kurtosis. However, item 10 was retained as normality is not typically assumed with ordinal categorical data and this non-normality was addressed with the use of weighted least squares estimation. Histograms, quantile-quantile plots, and box plots were examined, indicating evidence of some moderate non-normality, however the use of weighted least square mean and variance adjusted estimation is robust enough for non-normality (Muthen, 1984; Muthen & Satorra, 1995; Muthen et al., 1997). Bivariate correlations were examined to assess for issues of multicollinearity and indicated weak to strong correlations and majority of items were significantly correlated, but no items were correlated at or above .9 suggesting multicollinearity (Appendix O).

Mahalanobis distances were used to determine multivariate outliers and identified approximately 22 cases that violated assumptions of multivariate normality. Upon further examining the data, these cases were interpreted to resemble the true variability that would

exist in the data rather than faulty data entry and error. Additionally, the use of Mplus weighted least squares estimates is deemed robust enough to account for these outliers. Consequently, these cases were maintained in the analyses. The percentage of missing data was minimal, at less than 1% for all 41 items, and thus no cases were deleted. Overall, all items were retained for the final measure and as a result a total of 41 items were included in the following factor analyses.

Table 4
Means, Standard Deviations, and Normality for all 41 CSPEQ items

Variables	*M*	*SD*	Skewness	Kurtosis
BE8 Take Care Things	4.42	.75	-1.45	2.51
BE31 Behave Consequence	4.37	.71	-.87	.25
BE32 Excuse Focus School	3.13	1.02	-.05	-.15
BE33 Sacrifices Focus Student	3.66	.99	.44	-.07
BE34 Teach Skills Learned	3.81	.86	-.34	-.16
BE35 Help Rules Follow	4.44	.67	-.96	.47
BE36 Country Food Tradition	3.66	1.02	-.36	-.49
BE37 Behave Situations Places	4.25	.77	-.86	.54
BE38 Family Members History	3.72	.96	-.29	-.51
BE39 Teach Ask Help	4.39	.74	-.96	.25
BE40 Family Activities	3.59	.95	-.33	-.21
HE3 Tell Stories Read	3.22	1.04	-.62	-.12
HE4 Activities House	3.41	.95	-.18	-.23
HE5 Listen Child Read	3.00	1.06	-.37	-.48
HE9 After School Activities	3.26	1.36	-.50	-1.10
HE10 Place Time HW	4.66	.81	-3.10	10.19
HE11 Support HW	4.55	.76	-2.15	5.47
HE16 Learn Everyday Places	3.63	1.06	-.49	-.44
HE17 Bring Ed Toys	3.06	1.01	.18	-.37
PCC1 Talk Learn Does School	3.80	.73	-.82	1.39
PCC2 Ask Questions Learn	3.80	.86	-.54	-.54
PCC6 Talk Hard Tries School	4.15	.88	-1.25	-1.25
PCC7 Talk Gets Along Others	4.29	.81	-1.23	-1.23
PCC13 Tell Stories Motivate	3.48	1.30	-.19	-.19
PCC14 Tell Stories School	3.26	1.12	-.02	-.02
PCC15 Talk Learning Love	3.73	1.15	-.60	-.60
PCC28 Talk Child Future	3.35	1.00	-.32	-.32
SB12 Volunteer School	1.96	1.10	1.22	1.22
SB26 Track Performance	4.29	.75	-.97	-.97
SB27 Go School Events	3.75	1.16	-.59	-.59
SB29 Help Child Needs	3.34	1.05	-.17	-.17
SB30 Talk Other Parents	2.89	1.15	-.91	-.09
PSC18 Talk Resources Info	2.54	1.02	.61	.61
PSC19 Talk Work Together	2.57	.98	.83	.83
PSC20 Share Do At Home	2.35	1.00	.76	.76
PSC21 Read Watch Info	3.74	1.06	-.71	-.71
PSC22 Share Child Knowledge	2.57	.94	.77	.77
PSC23 Personal Convos	2.14	1.08	.79	.79

PSC24 Talk Child Learning	2.65	.96	.73	.73
PSC25 Talk Child Get Along	2.53	.98	.71	.73
PSC41 Talk Child Behaves	3.26	.98	-.03	-.03

Note. Items presented with their corresponding theorized factors. BE=Bien Educado; HE= Home Learning Environment; PCC=Parent Child Communication; SB= School Based Engagement; PSC= Parent-School Communication.

Item response frequencies for Latinx and White parents were examined separately to determine whether parents endorse different response options for items across the two groups. Items' response options were collapsed to create fewer categories when one parent group endorses a response for a category and the other parent group does not utilize the response category. This practice is particularly important in allowing for multiple groups invariance analyses as the thresholds of ordinal categorical items are included in parameters of the models (Brown, 2015; Rutkowski et al., 2019).

The smallest differences of item category responses across groups included items BE_8, BE_37, and PCC_1 in which 1 to 3 Latinx parents endorsed the lowest response category while no white parents used this category. Item BE_34 had its lowest response category endorsed by 3 Latinx parents and only one White parent. Latinx parents did not use the lowest response category for item PCC_7, whereas the lowest category was endorsed by 2 White parents. The largest and most notable difference in the use of response categories across parent groups occurred in item BE_40. In this case, White parents did not endorse the lowest response category and 10 Latinx parents did. A total of 6 items (BE_8, BE_34, BE_37, BE_40, PCC_1, and PCC_7) required the collapsing of categories, in which response categories were collapsed from 5 to 4 by combining the two lowest response options on the likert-scale. Lastly, it is important to note that 4 items (BE_31, BE_35, BE 39, and SB_26) had underutilized categories as "never" was not endorsed as a response for both parent groups.

Confirmatory Factor Analysis

Two separate CFA models were conducted for the Latinx parent group and the White parent group to confirm the proposed five factor model resulting from the literature, prior established instruments, and PE theory (i.e, Bien Educado, Home-Based Learning Environment, School Engagement, School-Home Communication, and Parent-Child Communication). The Latinx parent model demonstrated poor fit: χ^2 (769) = 1717.41, p < .001, RMSEA = .070, 90% CI [.065, .074], CFI = .894, SRMR = .095 (Table 5). The results of the White parent model indicated marginally adequate fit: χ^2 (769) = 1691.25, p < .001, RMSEA = .070, 90% CI [.065, .074], CFI = .920, SRMR = .087 (Table 5). Goodness of fit indices were in the acceptable to good range for the White parent group except for the SRMR fit index (Hu & Bentler, 1999; Vandenberg & Lance, 2000; Brown, 2015). Conversely, the Latinx parent model did not meet the criteria of satisfactory fit for two of the fit indices, including CFI and SRMR, and demonstrated a higher chi-square fit value.

Table 5
Fit Indices for Confirmatory Factor Analysis with Latinx and White

Group	c^2	*df*	*p*-value	RMSEA	90% CI	CFI	SRMR
Latinx	1717.414	769	<.001	0.070	[.065, .074]	0.894	0.096
Caucasian	1691.25	769	<.001	0.070	[.065, .074]	0.920	0.087
Latinx [a]	1486.518	655	<.001	0.070	[.066, .076]	0.905	0.093
Latinx [b]	1304.17	618	<.001	0.066	[.061, .071]	0.922	0.087

Note. c^2 = chi-square test of model fit; *df* = degrees of freedom; RMSEA = root-mean-square error of approximation; CI = confidence interval; RMSR = root-mean-square residual. [a] Items 9, 21, 32 not included to improve model fit. [b] Item 12 not included and item 10 residuals correlated with item 11 to improve model fit.

Examination of the standardized factor loadings revealed one indicator, HE_9 *after school activities*, that was determined to have a low loading (< .30) on its proposed factor for both the White and Latinx parent groups (Table 6). However, the Latinx model had an additional indicator, BE_32 *excuse focus school*, that did not load onto its theorized factor.

Additional variation of item factor loadings across groups included items PSC_23 (*personal convos*) and SB_27 (*go school events*) in which the variance of these items were better explained by its theorized factor for the White parent group. As illustrated in Table 6, the remaining factor loadings for the Latinx model demonstrated salient large magnitudes, ranging from .37 to .92, and statistically significant at $p<.001$ (Brown, 2015). Similarly, the magnitudes of salient factor loadings for the White model ranged from .33 to .93 and were also statistically significant $p<.001$.

Modification indices were examined to identify areas of localized strain and improve model fit. Examination of modification indices across groups indicated variation in the items that suggested item cross loadings. The Latinx model exhibited more issues with cross loading items and overall had higher modification indices ranging from 10.00 to 88.46 in comparison to the White parent group ranging from 10.03 to 46.13. The discrepancies between weak factor loadings and modification indices across Latinx and White parent groups prompted the researcher to identify areas of localized model misfit and conduct CFA model modifications for the Latinx group only given the focus of the study.

Modification indices examining model parameters for the Latinx CFA indicated that item PSC_21 (Read or watch info about school/classroom) within the Parent-School Communication factor cross loaded with several factors as modification indices were high for Bien Educado (85.226), School Based (80.986), and Parent-child Communication (78.955). The removal of this item was further substantiated by the theoretical the evidence that the item was not distinctive of its proposed factor since it was the only item that did not represent the explicit communication activities between parent and teacher. This item can also potentially be related to parent-child discussions regarding school information as well as

school-based activities as it entails keeping track of the information related to the school-based setting. Additionally, the two indicators (BE_32 and HE_9) that did not demonstrate salient factor loadings (< .30) on its proposed factors for Latinx parents were removed and the remaining 38 were retained for the subsequent CFA analysis for the Latinx parent group.

The results of the second CFA for the Latinx group indicated that the removal of items HE_9, BE_32, and PSC_21 indicated marginal model fit χ^2 (655) = 1486.518, p < .001, RMSEA = .070 [.066, .076], CFI = .905, SRMR = .093, with some improvement to the model fit indices in comparison to the initial CFA. In particular, the CFI fit index demonstrated acceptable fit and no longer fell within the poor fit range (Brown, 2015). Fully standardized factor loadings for the Latinx model were found to be salient with large magnitudes, ranging from .35 to .93, and statistically significant at p<.001. Modification indices were again evaluated to identify areas of model improvement and theoretical rationale for the correlations of item residuals with high expected parameter change (EPC) values. The parameter HE_10 with HE_11 was identified to be implemented into the subsequent CFA as it had the largest modification index (57.59). The inclusion of the pair of modification indices, HE_10 with HE_11, was decided based upon the criteria that there was strong correlation between the pair and were loaded upon the same factors. This relationship is theoretically justifiable as both items are related to homework support but in distinctively different ways (i.e., direct homework support versus home structure to provide supportive homework environment). Modification indices for model parameters indicated that item SB_12, *volunteer* school, had the largest EPC value (86.71) and the removal of the item was further theoretically justified by its lack of relationship to Latinx PE behaviors in the literature (Altschul, 2011; Boonk et al., 2018; Henderson & Map, 2002; Hill & Torres, 2018).

The results of the third and final CFA for the Latinx group indicated that the removal of item 12 and inclusion of the pair of modification indices provided marginal fit χ^2 (618) = 1304.17, $p < .001$, RMSEA = .066 [.061, .071], CFI = .922, SRMR = .087, suggesting goodness of fit indices slightly improved in comparison to the prior CFA. Modification indices of model parameters continued to demonstrate a multitude of items with high EPC values above 10. This suggests that despite attempts to improve model fit, the model demonstrates a high number of potential cross loading items, and thus the data does not support the PE theoretical model that the researcher sought to test for Latinx parents. Consequently, the five-factor CSPEQ model proved to be inconsistent with the researcher's theorized model and an EFA was conducted instead of continuing with measurement invariance tests. In order to explore and create a model of PE that reflects practices of Latinx PE, the subsequent EFAs were conducted for the Latinx subsample only.

Table 6

CFA Standardized factor loadings for Latinx/White for the five-factor CSPEQ model

	Factor				
Indicator	Bien Educado	Home Environment	Parent-child Communication	School Engagement	Parent-School Communication
BE8 Take Care Things	.655/.601				
BE31 Behave Consequence	.707/.659				
BE32 Excuse Focus School	.236/.337				
BE33 Sacrifices Focus Student	.385/.433				
BE34 Teach Skills Learned	.675/.584				
BE35 Help Rules Follow	.673/.703				
BE36 Country Food Tradition	.606/.572				
BE37 Behave Situations Places	.735/.699				
BE38 Family Members History	.669/.710				
BE39 Teach Ask Help	.624/.712				
BE40 Family Activities	.549/.556				
HE3 Tell Stories Read		.616/.629			
HE4 Activities House		.462/.579			

HE5 Listen Child Read	.752/.740				
HE9 After School Activities	.167/.195				
HE10 Place Time HW	.433/.424				
HE11 Support HW	.651/.601				
HE16 Learn Everyday Places	.595/.544				
HE17 Bring Ed Toys	.665/.741				
PCC1 Talk Learn Does School		.693/.718			
PCC2 Ask Questions Learn		.687/.635			
PCC6 Talk Hard Tries School		.708/.640			
PCC7 Talk Gets Along Others		.729/.637			
PCC13 Tell Stories Motivate		.624/.644			
PCC14 Tell Stories School		.683/.668			
PCC15 Talk Learning Love		.783/.667			
PCC28 Talk Child Future		.472/.571			
SB12 Volunteer School			.471/.591		
SB26 Track Performance			.661/.531		
SB27 Go School Events			.371/.568		
SB29 Help Child Needs			.732/.735		
SB30 Talk Other Parents			.583/.663		
PSC18 Talk Resources Info				.826/.841	
PSC19 Talk Work Together				.906/.938	
PSC20 Share Do At Home				.814/.894	
PSC21 Read Watch Info				.410/.391	
PSC22 Share Child Knowledge				.865/.907	
PSC23 Personal Convos				.410/.741	
PSC24 Talk Child Learning				.925/.950	
PSC25 Talk Child Get Along				.833/.838	
PSC41 Talk Child Behaves				.763/.764	

Note. All primary factor loadings significant at $p < .001$. BE=Bien Educado; HE= Home Learning Environment; PCC=Parent Child Communication; SB= School Based Engagement; PSC= Parent-School Communication.

Exploratory Factor Analysis

An EFA with model solutions for one to five factors was performed based upon the researchers proposed five factors resulting from the PE literature, PE theory, and well-established measures. The initial EFA indicated retaining up to 10 factors, as determined by

Kaiser's eigenvalue criteria (>1). Examination of Cattell's scree plot identified a substantial drop in reduced eigenvalues between factors three through five, suggesting an extraction of a three, four, or five factor solution (Figure 5). Furthermore, the EFA results for the one and two factor models indicated poor model fit (Table 7). Consequently, three, four and five factor solutions were further investigated. Decisions for the final factor extraction was informed by evaluation of the factor loadings and fit statistics within the context of theoretically meaningful factors and items.

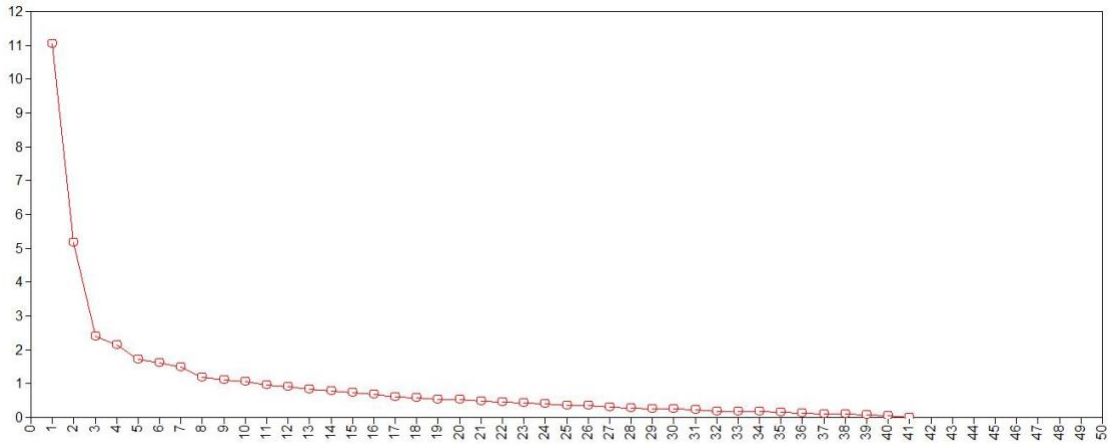

Figure 5. Exploratory factor analysis scree plot of eigenvalues.

The five-factor model, while providing good to close fit (Table 7), was over-factored as the fifth factor had less than 3 indicators loading onto it. The identified factors within this model demonstrated many cross-loading items (10) and two items that did not significantly load onto a primary factory. Two of these indicators with high cross loadings were the only indicators with primary loadings on the fifth factor. Additionally, the factors of this solution and their corresponding items could not be theoretically supported.

Table 7.
Fit Indices for Exploratory Factor Analysis with Latinx Parent Group

Model	c^2	*df*	*p*-value	RMSEA	90% CI	CFI	SRMR
1-Factor	2966.902	779	<.001	0.105	[.101, .109]	0.758	0.153

2-Factor	1793.086	739	<.001	0.075	[.071, .080]	0.883	0.087
3-Factor	1535.201	700	<.001	0.069	[.064, .073]	0.908	0.075
4-Factor	1266.504	662	<.001	0.06	[.055, .065]	0.933	0.063
5-Factor	1092.304	625	<.001	0.054	[.049, .060]	0.948	0.056
4-Factor[a]	1136.944	557	<.001	0.064	[.059, .069]	0.935	0.063
4-Factor[b]	997.950	461	<.001	0.068	[.062, .074]	0.939	0.061

Note. c^2 = chi-square test of model fit; *df* = degrees of freedom; RMSEA = root-mean-square error of approximation; CI = confidence interval; RMSR = root-mean-square residual. [a] Items 9, 16, and 21 were not included to improve model fit. [b] Items 8, 17, and 27 were not included to align factor structure with theory and improve model fit.

The three-factor model demonstrated acceptable fit (Table 7) and did not identify as many factors with cross-loading items in comparison to the five-factor solution. However, this model was not as close in fit when compared to the four and five-factor solutions. Furthermore, this factor solution identified factors that were less theoretically meaningful than the four-factor model. While the three-factor solution demonstrated some theoretical support, the identified factors grouped many items together that were theoretically related but distinct and removed the ability distinguish dimensions of PE (Boonk et al., 2018; Jeynes, 2018; Hong & Ho, 2005). Consequently, the three-factor solution did not represent the theoretical multi-dimensionality of the PE latent construct.

The four-factor model identified factors that represented the theoretically supported the multi-dimensional domains of PE with theoretically meaningful items in comparison to the three-factor and five-factor solutions. It was ultimately decided to retain the four-factor solution as it provided acceptable model fit to the data while being the most theoretically interpretable: χ^2 (662) = 1266.50, $p < .001$, RMSEA = .06 [.055, .065], CFI = .933, SRMR = .06 (Table 7). The model was deemed acceptable despite the significant chi-square value due

the fit criteria's sensitivity to the non-normality that is typical of ordinal categorical data in this study (Bollen, 1989; Hutchinson and Olmos, 1998). However, the CFI value was not greater than .95 (.921) and thus the close fit criteria were not satisfied for CFI (Brown, 2015; Hu & Bentler, 1999; Vandenberg & Lance, 2000). As a result, the researcher performed modifications to the four-factor EFA results in order to refine the PE theory and model fit. Items that were identified as problematic based upon theoretical justifications and item factor loadings would be sequentially removed from the model, reanalyzed, and then evaluated after its removal (Brown, 2006; Costello & Osborne, 2005). Examination of the factor loadings of this initial solution revealed a total of 3 indicators, HE_9 *After School Activities,* HE_16 *Learn Everyday Places,* PSC_21 *Read Watch Info*, that were determined to have a low primary loading (< .30). These three indicators were removed, and the remaining 38 items were retained for the subsequent EFA analysis.

The second EFA analysis indicated that after removing the three indicators the four-factor solution continued to demonstrate good to adequate fit to the data: χ^2 (557) = 1136.944, $p < .001$, RMSEA = .064 [.059, .069], CFI = .935, SRMR = .063 (see Table 7), however because the CFI value again was not greater than .95 (.939), consequently the close fit criteria were not satisfied (Brown, 2015; Hu & Bentler, 1999; Vandenberg & Lance, 2000). An examination of the factor loadings suggested that none of the indicators had a low primary loading (< .30). Item HE_17, *Bring Educational Toys*, demonstrated a high cross loading with its primary and secondary factor (>.3). Furthermore, this item made very little theoretical sense as to its loading onto its primary factor. Items were then examined according to the theoretical justification for their primary factor loadings. Item SB_27, *Go to School Events*, did not demonstrate any theoretical support for it loading with other items

related to educación and other Latinx cultural PE practices represented by the items loading to that factor. Additionally, item BE_8, *Take Care of Things*, cannot be theoretically justified as to its loading with other items representing academic socialization PE behaviors. These three indicators were removed and the remaining 35 were retained for the final EFA analysis.

The third and final four-factor solution with 35 indicators provided a good fit to the data, χ^2 (461) = 997.950, $p < .001$, RMSEA = .068 [.062, .074], CFI = .939, SRMR = .061 (Table 7). Again, despite that there was a significant chi-square value, it can still be deemed an acceptable model due to the fit criteria's sensitivity to the non-normality of ordinal categorical data within the presenting study (Bollen, 1989; Hutchinson & Olmos, 1998). As illustrated in Table 8, the identified factors had at least 3 indicators loading on each of the four factors and its corresponding item loadings demonstrated salient large magnitudes, ranging from .32 to .91, and statistically significant at p<.001 (Brown, 2015). All indicators had adequate standardized primary loadings (> .3) and difference of .2 between primary and secondary loadings on a secondary factor, except for five indicators (Table 8). A total of five items demonstrated moderate cross-loadings, including items BE_34 *Teach Skills Learned*, SB_29 *Help Child Needs*, SB_30 *Talk Other Parents*, SB_26 *Track Performance*, and PCC_6 *Talk Hard Tries School*. However, upon examination, these five items have theoretical justifications as to why they should be retained in the model and had strong theoretical support as to their loading onto their primary factor.

Table 8.

Geomin Rotated Factor Loadings of Final CSPEQ Four-Factor Solution

	Factor			
Indicator	Bien Educado	School Engagement	Academic Supports	Academic Socialization
31 Behave Consequence	**.65**	-.02	.26	-.08
32 Excuse Focus School	-.08	-.03	-.02	**.47**

33 Sacrifices Focus Student	.06	-.01	-.01	**.44**
34 Teach Skills Learned	**.45**	.08	.01	.38
35 Help Rules Follow	**.69**	-.15	.12	.05
36 Country Food Tradition	**.71**	.09	-.30	.17
37 Behave Situations Places	**.76**	.09	.07	.04
38 Family Members History	**.72**	.04	-.21	.19
39 Teach Ask Help	**.57**	-.12	.25	-.05
40 Family Activities	**.55**	.22	-.07	-.02
3 Tell Stories Read	.04	.21	**.48**	.05
4 Activities House	.06	.09	**.32**	.12
5 Listen Child Read	-.05	.18	**.61**	.20
10 Place Time HW	-.02	-.19	**.63**	.06
11 Support HW	.15	-.08	**.67**	.07
1 Talk Learn Does School	.11	.07	**.68**	.02
2 Ask Questions Learn	.00	.20	**.74**	-.04
6 Talk Hard Tries School	.05	.01	**.42**	**.50**
7 Talk Gets Along Others	.12	.18	**.43**	.25
13 Tell Stories Motivate	.09	.00	.01	**.67**
14 Tell Stories School	.00	.03	.01	**.76**
15 Talk Learning Love	.05	.05	.08	**.76**
28 Talk Child Future	.12	-.03	.06	**.46**
12 Volunteer School	-.09	**.51**	.08	-.03
26 Track Performance	.41	.03	**.47**	-.05
29 Help Child Needs	.31	**.45**	.11	.04
30 Talk Other Parents	.31	**.43**	-.03	-.02
18 Talk Resources Info	.02	**.85**	-.07	.00
19 Talk Work Together	-.02	**.89**	.00	.05
20 Share Do At Home	-.01	**.77**	-.04	.16
22 Share Child Knowledge	-.05	**.84**	.01	.11
23 Personal Convos	.00	**.77**	-.03	-.01
24 Talk Child Learning	.01	**.91**	.06	.01
25 Talk Child Get Along	.01	**.83**	.01	.02
41 Talk Child Behaves	.32	**.73**	.06	-.15

Note. Results from exploratory factor analysis with Latinx subgroup. Bolded loadings represent indicators loading on respective factor.

This final EFA was a four-factor model from which the following PE factors emerged: *Bien Educado, School Engagement, Academic Support, and Academic Socialization*. The path diagram tested in the final four factor model is illustrated in Figure 6.

Bien Educado consisted of 8 items that reflected the Latinx culturally informed PE that occur in the home or community and include parent development of their child's educación (i.e. developing student's moral, behavioral and socioemotional skills), respeto, familismo, and independence or pragmatic skills. This also included parent sharing of funds of knowledge (i.e., familial heritage, cultural, and social knowledge). School Engagement was comprised of 11 items that reflected PE behaviors directly related to the school setting such as parent teacher communication, parent help seeking, and discussing school related information with their parent community. Academic Support consisted of 9 items relating to parent efforts to support their child academically at home, including supportive homework environment or direct homework support, parent-child communication related to supporting their child's academic success at school, literacy enriching activities, and monitoring school performance. Academic Socialization was comprised of 7 items that entail parent-child communication that motivates or sets standards and expectations of the child as a student and fosters future planning, aspirations, and goals of education.

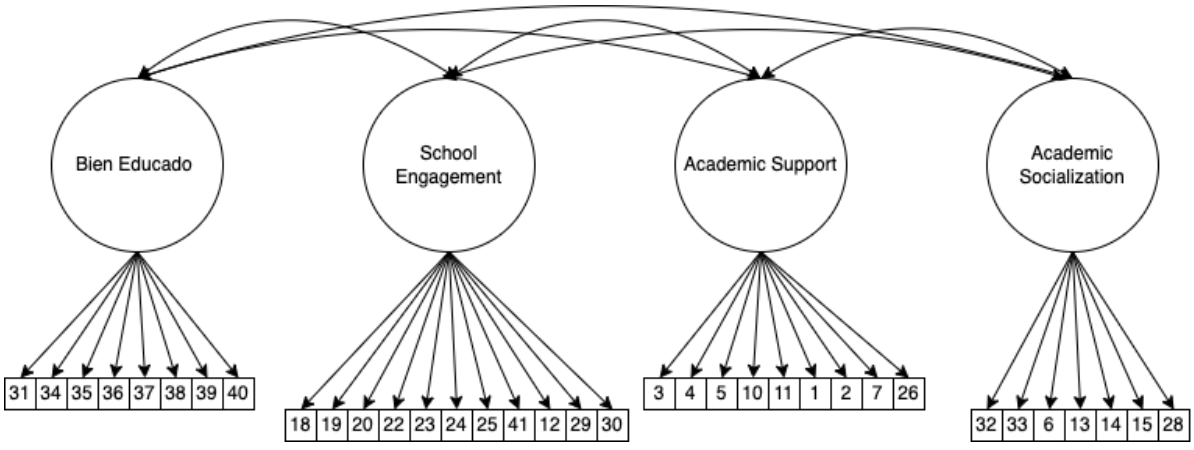

Figure 6. Path diagram of the final exploratory factor analysis model.

Factor correlations amongst the four factors demonstrated positive low to moderate correlations ranging from .10 to .39 and were all significant (p>.05), with the exception of

Bien Educado and *School Engagement* (Table 9). This suggests that the factors capture distinct dimensions of PE and there is no evidence of poor discriminant validity (Brown, 2015). Internal reliability was examined by using Cronbach's alpha reliability coefficients for each PE factor or domain. The *Bien Educado* factor demonstrated good internal consistency (α = .82). *School Engagement* demonstrated excellent internal consistency (α = .91), *Academic Supports* exhibited good internal consistency (α = .80). Lastly, *Academic Socialization* demonstrated acceptable internal consistency (α = .76). Overall, internal reliability coefficients indicated that the factors could be considered distinct with alpha coefficient values ranging from acceptable to excellent. Factor correlations between the four factors and alpha coefficients are presented in Table 9.

Table 9.
Extracted Factor Correlations and Alpha Coefficients for CSPEQ

Factors	1	2	3	4
1. Bien Educado	.82			
2. School Engagement	.10	.91		
3. Academic Support	.39	.20	.80	
4. Academic Socialization	.34	.29	.31	.76

Note. Results from exploratory factor analysis with Latinx subgroup. Factor internal reliabilities of Cronbach's alpha coefficients are presented in the diagonals.

Chapter 5: Discussion

Summary of Results

The present study contributes to the PE literature for elementary-aged students by developing and examining preliminary validity evidence for a culturally sensitive PE questionnaire (CSPEQ) to improve PE measurement in two ways 1) creating a culturally informed PE measure for Latinx families and 2) creating a comprehensive PE measure that captures multi-dimensional PE domains with salient PE behavioral indicators that could also

be potentially used for White families. The primary objective of this study includes the validation of the CSPEQ's factor structure to assess whether the five-factor structure is consistent with the proposed PE theorized dimensions for both Latinx and White parent groups. An additional objective included the examination of the instrument's psychometric properties through invariance testing to discern if the constructs of the CSPEQ are being measured in the same way across Latinx and White parents of elementary-aged children.

The separate group CFA results indicated that the theoretical PE models may be different for Latinx and White parents, including differences across Latinx and White parent model fit, areas of localized strain, and parent endorsement of item response categories. Overall, the results of the CFA indicated that the theorized model does not support the Latinx parent data after failed efforts to improve model fit for the Latinx group CFA. Research objectives to further conduct multiple groups invariance testing were abandoned to prioritize the exploration and identification of a theoretically interpretable factor structure for Latinx parents through EFA analyses.

The results of the EFA produced a reliable and theoretically supported 4-factor PE measure consisting of 35 items that reflect culturally embedded PE behaviors of Latinx parents across home and school settings. Key findings of the EFA demonstrate that PE is a multidimensional construct that can consist of culturally informed Latinx PE behaviors and PE behaviors that are salient indicators of positive student outcomes. The CSPEQ affirmed the culturally centered PE behaviors of Latinx parents supported by the research literature and illuminated how those PE behaviors are related to various dimensions of PE across home and school. Taken together, the development and validation of the CSPEQ provide

significant steps to conceptualizing and measuring PE for Latinx families in culturally responsive ways that can more accurately capture Latinx PE.

Confirmatory Factor Analyses

The study began addressing its primary goal of validating the theorized PE factor structure for both Latinx and White parent groups by conducting two separate groups CFAs across parent race. Model fit for the Latinx and White parent group demonstrated marginal fit, with the Latinx group resulting in poorer model fit. This was theoretically concerning as the researcher's primary objective was to provide a measure that accurately represents the PE construct for Latinx families.

Furthermore, the CFA models demonstrated variations in factor loadings for several items across the two parent groups. Item BE_32, "I excuse my child from helping at home so he/she can focus on homework and learning," did not load on the theorized factor for the Latinx parent group, while the indicator did have a distinct factor loading higher than .30 for White parents. This could indicate that either the item itself is an inadequate indicator in the Latinx model or that the indicator is better explained by another factor structure and not the previously theorized model tested in the CFA. Given the research literature has highlighted this PE activity as a salient Latinx culturally informed parent practice to support their child's academic socialization, it is more likely that the variance of the indicator could be better explained in a different model (Auerbach, 2009; Goldsmith & Kurpius, 2018; Hill & Torres, 2011; Reese, 2002; Suárez-Orozco & Qin, 2006). Item SB_27, "I go to social events, meetings, workshops, or parent-teacher conferences at my child's school," did not load as highly onto the School Engagement factor for Latinx parents in comparison to their White counterparts. The discrepant factor loading suggests that the levels of this PE behavior are

better explained by the latent School Engagement factor for the White parent group. This is consistent with the research literature that parent attendance at school events or volunteering in the school setting is less indicative of PE for Latinx parents in comparison to White parents (Altschul, 2011; Boonk, 2018; Henderson & Map, 2002; Hill & Torres, 2018).

Similarly, item PSC_23, "I have friendly or personal conversations with my child's teacher about topics other than school," demonstrated lower loadings onto its theorized factor for Latinx parents. It is possible the item is better explained within a different model of PE. Alternatively, this parent-teacher communication item may be less related to the factor as it is the most culturally embedded item because it reflects the informal and personal communications preferred by Latinx parents in the context of building parent-teacher relationships in their collaboration with each other (Smith et al., 2008; Guerra & Valverde, 2007; Hill, 2009; Nicolau & Ramos, 1990; Zoppi, 2006). Overall, the variation in the factor loadings across groups suggests that the theorized PE model may not be the same for Latinx and White parents.

Attempts to improve model fit for Latinx and White parent models also revealed that the modification indices varied across the different parent groups and indicated different model modifications to improve fit. In particular, there were far more cross-loaded items within the Latinx model. This implies that the model does not fit the data for Latinx parents as well as it does for the White parent population. It may also be that PE indicators may have different relationships to the various factors specified in the theoretical model for the Latinx parents in comparison to their White peers. Again, such results provided an additional indication that not only does the theorized model of PE potentially hold differently across parent groups but that modifications to the PE theory for Latinx parents are warranted.

The indication that the CFA models of PE are different across Latinx and White parents is consistent with the literature that has identified how PE can look differently for Latinx families (De Gaetano, 2007; Goldenberg et al., 2002; McWayne et al., 2013). The differences in PE behaviors have been associated with a multitude of barriers that Latinx families can face including socio-economic (Ceballo et al., 2017; Hill & Torres, 2010), acculturative stress (Hernandez et al., 2012), language (Gilbert et al., 2017), cultural-mismatch or lack of cultural knowledge regarding U.S. education system (Delgado-Gaitan, 1991, 2004), and discrimination (Lopez et al., 2000; Hill & Tyson, 2018). These barriers have only been exacerbated by the pandemic and it is unclear how this may have impacted the differences between Latinx and White parent responses (García & Weiss, 2020; Jalongo, 2021; Sonnenschein et al., 2022; Wilson, 2020). Additionally, items related to school-based engagement may be a less salient form of PE for Latinx parents as suggested by the research (Altschul, 2011; Boonk et al., 2018; Henderson & Map, 2002; Hill & Torres, 2018). Latinx parents often view their role in supporting their child's learning within the home context and place the responsibility of their child's education with their teacher (Goldenberg et al., 2002; Reese, 2002).

Most importantly, the literature highlights that Latinx cultural notions of educación, respeto, familismo, estudios, empeños, and ganas foster unique ways that Latinx parents support their child's learning in ways not seen within white families (Auerbach, 2009; Ceballo et al., 2017; Kelly-Vance et al., 2006; Kennedy & Ceballo, 2013; Olmedo, 2003; Valenzuela, 2010; Roche et al., 2012). Differences in the construct of PE are even further diversified with Latinx parents as there is evidence that they further support their child's cognitive, socio-emotional, and behavioral development through consejos, sharing funds of

knowledge, instilling cultural values, and value of education (Goldsmith & Kurpius, 2018; Gonzalez et al., 1995; Kelly-Vance et al., 2006; Lopez, Scribner, Mahitivanichcha, 2001; McWayne, 2014; Valencia, 2002; Vélez-Ibáñez & Greenberg, 2005; Zarate, 2007). Overall, the literature highlighting the unique culturally informed Latinx PE behaviors further substantiates the study's focus on model improvement for the Latinx parent group only.

Improvements to the proposed theoretical model were attempted by looking at the Latinx model to remove items that did not load highly onto their proposed factors or cross-loaded on other factors. Items residual variances were also correlated for those that had underlying theoretical reasons for their relationship. However, even after attempts to improve model fit for the proposed theory of a five-factor PE structure, the CFA model still demonstrated marginal fit, and the modification indices continued to identify a large number of cross-loading items. The researcher decided to stop at this point of the CFA model modification process as the removal of so many cross-loading items would have created weak or unstable factors consisting of three or fewer items (Osborne et al., 2008). Taken together, the poor to marginal fit statistics and a large number of cross-loaded items suggested that the five-factor theoretical model for Latinx parents that the researcher aimed to validate does not support the Latinx parent data. Thus, theoretical modifications are required instead of attempting to further modify the CFA. In order to represent an accurate model of PE for Latinx families, the use of EFA analyses allowed for exploration as to whether the variables are behaving in a theoretically expected way.

Potential explanations for why the initial PE theory was not confirmed in the CFA for the Latinx and White parent population is due to the variation of what clear and consistent dimensions of PE exist across the literature and established measures (Domina 2005;

Driessen et al., 2005; Epstein & Salinas, 1993; Fantuzzo et al., 2000; Garcia-Coll et al., 2002; Kohl et al., 2000; Walker et al., 2005; Wong & Hughes 2006). The lack of consensus regarding domains and behaviors of PE engenders a variety of numbers and types of PE dimensions that can vary between 2 to 5 PE domains (Jeynes, 2018; Goodall & Montgomery, 2014). The challenge of identifying PE domains and their associated PE behaviors or items is further complicated by research findings that PE looks differently for Latinx families (Goldenberg et al., 2002; McWayne et al., 2013). Given the PE literature regarding Latinx PE behaviors is sparse, there was limited evidence to inform how some of the PE behaviors are related to the general PE home and school domains. As a result, the researcher's theorized five-factor theory may have been limited in its understanding of how the salient Latinx PE behaviors identified in the literature are related to each other in the context of the multiple dimensions of PE. For example, the relationships of Home-based related PE behaviors represented in the theoretical model may be impacted by the Latinx cultural values underlying those PE behaviors. As a result, the home-based related PE behaviors or items may relate to different broader domains of PE in unseen ways.

A continued multiple groups analysis within the present study would be ill-advised for several reasons including the marginal model fit of the separate group CFAs. Multiple groups analyses would likely demonstrate progressively poorer fitting models as factor loadings and thresholds would be held to equality (Brown, 2015). Thus, the study prioritized theoretical modifications with EFA analyses to produce a theoretically interpretable model with good fit prior to further psychometric investigations such as invariance testing.

Several other issues arose that were related to conducting invariance testing for the categorical data of this measure. Those issues include differences in parent endorsement of

response categories across groups, sample size, and item thresholds. Parent endorsement of item response categories varied across the Latinx and White parent groups. In evaluating item category response frequencies, it appeared that Latinx parents used the full variation of item response categories in comparison to White parents. It is also worth noting that this could potentially suggest non-invariance. More importantly, several items had zero responses in a category for one group and several responses for that category within the other group. The model cannot set a threshold for an item if there are zero responses for that category in one group and not the other. This becomes a problem in multiple groups invariance testing as the item thresholds are held to equality instead of the item means. Therefore, without an established threshold for an item in one group, thresholds across groups cannot be constrained to be equal and this triggers non-invariance (Rutkowski et al., 2019). Overall, the data of the current sample size requires more item responses in categories which may be possible with a larger sample size.

A possible solution discussed in the literature is the collapsing of variable response categories (Rutkowski et al., 2019). However, research cautions against the collapsing of categories due to the potential negative impact on measurement reliability that comes as a result of the statistical information being lost when response categories are collapsed (Embretson & Reise, 2000; Muraki, 1993). Recommendations in the invariance research literature point to obtaining larger sample sizes when the number of categories is not the same across compared groups to avoid results that inaccurately reflect the properties of one's measure (Rutkowski et al., 2019). It is possible that with a larger sample size, the issue of underused categories will be remedied, and responses could be obtained for all response categories across groups.

Furthermore, a larger sample size for invariance testing could avoid the collapsing of response categories that might have been meaningful for the Latinx population given the fact that Latinx parents used the full variety of item response categories in comparison to their White counterparts (Rutkowski et a., 2019). The need for a larger sample size is further supported by the fact that invariance testing with categorical variables includes the addition of holding item thresholds to equality, which adds more parameters to the model and consequently requires an even larger sample size. Taken together, attempts to evaluate invariance with the study's current sample size and data may have produced a biased response, and any claims with regards to invariance or non-invariance may not replicate with other samples or may not be accurate.

Exploratory Factor Analyses

EFA results suggested that the initial theorized five-factor structure was over-factored and did not best represent the PE construct for Latinx parents. Instead, the results indicated that the three and four factor PE structure demonstrated the most viable options in terms of theoretical justification and model fit. However, the three-factor structure would have reduced the multi-dimensionality of the PE latent construct and removed the ability to make clear distinctions between dimensions of PE and how these different types of PE impact outcomes (Boonk et al., 2018; Hong & Ho, 2005; Jeynes, 2018). Specifically, the three-factor structure oversimplified the dimensionality of the PE construct with only Home-Based, School-Based, and Bien Educado factors. Most notably, the Home-Based factor combined all home-environment related items and parent-child communication items when aspects of these items have some level of distinction with regards to what purpose the item has in

supporting an outcome of PE. For instance, communication that is related to direct learning versus those related to academic socialization. Such a lack of distinction has been criticized in the research literature to inhibit the utility of the instrument to evaluate relationships between specific types of PE behaviors and various student outcomes (Hong & Ho, 2005).

In comparison, the four-factor model is more representative of the theoretical multi-dimensionality of PE and meets the needs within the literature to create a measure with distinct and multi-dimensional PE dimensions with specific behaviors that are known to be predictive of positive student outcomes (Boonk et al., 2018; Hong & Ho, 2005; Jeynes, 2018). Furthermore, the four-factor model demonstrates closer model fit in comparison to the three-factor model. Modifications to the four-factor EFA were successfully able to identify the most parsimonious model that was theoretically interpretable and demonstrated good model fit. The PE domains that emerged from the four-factor structure include Bien Educado, School Engagement, Academic Support, and Academic Socialization. Several items were removed from the model due to their lack of relationship to any of the PE factors including HE_9 *After School Activities,* HE_16 *Learn Everyday Places,* PSC_21 *Read Watch Info*.

Item HE_9 *After School Activities* reflected PE behaviors of placing their child in enriching extracurricular instruction to supplement their child's learning (Altschul, 2011). Based on the content of this item, it would be assumed that the item is related to the Academic Support factor. This item's relationship to PE engagement may be influenced by financial barriers as enrolling children in after school activities can require a certain level of financial status to be able to afford such activities (Anderson & Minke, 2007; Gilbert et al., 2017). Furthermore, there is some evidence that suggests the item may not be as

representative of Latinx PE and rather the use of extra-curricular activities is more commonly practiced by non-Spanish speaking families (Kelly-Vance et al., 2006). It is also possible that the relationship of this item to other items on the CSPEQ may have been impacted by the pandemic as students and families were not able to access such after school activities during this time (García & Weiss, 2020; Jalongo, 2021; Ribeiro et al., 2021; Wilson, 2020).

The HE_16 *Learn Everyday Places* item is indicative of parent behaviors to foster their child's cognitive development in the community and thus would be expected to load onto the Academic Support factor (McWayne et al., 2013; McWayne et al., 2014). The item's lack of relationship to domains of PE is a surprising finding given the literature identified that enriching community activities supporting children's cognitive, linguistic, and physical abilities is an important PE behavior for all students (Boonk et al., 2018; Dearing et al., 2004; Graves & Brown Wright, 2011; McWayne et al., 2004; Rogers et al., 2009; Sheldon & Epstein, 2005; Stylianides & Stylianides, 2011; Wen et al., 2012; Youn et al., 2012) including Latinx students (Althschul 2011; Cooper et al., 2010). Furthermore, this item was identified as a part of the supplemental education domain within McWayne and colleagues' culturally responsive PE measure for Latinx families (2013). Again, the ability to identify a relationship between this PE behavior and domains of PE may have been impeded by the pandemic which prevented families from engaging in their communities (Anderson et al., 2021; Saracho, 2022).

The third item, PSC_21 *Read Watch Info*, reflected parents' efforts to communicate with their teachers by consuming the information or resources shared with them by their child's teacher. The indirect nature of this communication represents an additional method for parents that are less likely to communicate directly with teachers or their school

(LaRocuqe et al., 2011; Kraft & Dogherty, 2013; Kraft & Monti-Nussbaum, 2017; Kraft & Rogers, 2015). This is important considering the barriers Latinx families can face when trying to communicate with their teachers such as limited English language proficiency or negative school experiences due to cultural mismatch or discrimination (Hill, 2009; Smith et al., 2008). The item intended to capture other efforts of parents to partake in the school-home communication dynamic by using the information shared by the school to learn more about their child's school and how to support their child's learning. Consequently, it was theoretically expected to be related to either parent-school communication or academic support related domains of PE. Thus, it was a surprising finding that this item did not relate to other factors such as Academic Support, as consuming school related information is a PE behavior that would allow a parent to help their child's academic success at home. However, it was plausible that the item did not relate to other home-school communication items, as it was the only item that did not represent the explicit communication activities between parent and teacher.

Other items that were not included in the final model were due to their lack of theoretical support for loading onto their respective factor. These included Item HE_17 *Bring Educational Toys*, Items 27 *Go to School Events*, and Item BE_8 *Take Care of Things*. The intended function of item HE_17, *Bring Educational Toys*, was to reflect the importance of parents providing educational resources to foster cognitively enriching experiences in the home environment (Althschul 2011; Boonk et al., 2018; Cooper et al., 2010; Dearing et al., 2004; Graves & Brown Wright, 2011; McWayne et al., 2004; McWayne et al., 2013; Rogers et al., 2009; Sheldon & Epstein, 2005; Stylianides & Stylianides, 2011; Wen et al., 2012; Youn et al., 2012). However, this item did not relate to PE domains in theoretically expected

ways and loaded onto the School Engagement factor. It is unclear how this PE behavior is being explained by school-based engagement with regards to parent-teacher communication and interacting with the school setting to support their child's learning. Additionally, this item cross-loaded with the Academic Socialization factor. The relationship that this item has with Academic Socialization makes more theoretical sense as bringing home education toys or resources could potentially orient their child towards learning and cultivate academic interests. Overall, the findings regarding this item are contradictory with the PE domains identified by McWayne and colleagues (2013) that finds the provision of educational resources at home to be a part of supplemental education.

Item 27, *Go to School Events*, is indicative of PE behaviors related to the school-based setting by representing the frequency of parent attendance at school events and overall presence on the school campus. Similar items were identified on other culturally responsive measures, (i.e. FIQ and PEFL) and had demonstrated a clear relationship to school participation or school-based engagement PE domains (FIQ: Fantuzzo et al., 2000; PEFL: McWayne et al., 2013). As a result, item 27's loading to the Bien Educado factor demonstrated little theoretical support. There is no evidence to explain its relationship to other items related to educación and other Latinx cultural PE practices represented by the items within the Bien Educado domain. Seeing that this item is related to physically being in the school setting, it is again a possibility that the impact of the pandemic has changed the outcome of the results for this item (García & Weiss, 2020; Jalongo, 2021; Ribeiro et al., 2021; Wilson, 2020).

Additionally, Item BE_8, *Take Care of Things*, cannot be theoretically justified as to its loading with other items representing Academic Socialization PE behaviors. It remains

unclear as to how this PE behavior would foster academic expectations, values, and goals like other items in the Academic Socialization domain. Rather it is theoretically expected that this item is related to the Bien Educado factor due to its underlying Latinx cultural value of educación (Auerbach, 2009; Olmedo, 2003; Valenzuela, 2010). More specifically item 8 reflects how parents foster a child's ability to be responsible and respectful with their possessions as well as support their child's independence (Kelly-Vance et al., 2006; McWayne et al., 2014). This is a surprising finding as this item is part of the PEFL's foundational education PE dimension that was adapted for the present study's measure to represent Latinx PE behaviors informed by the cultural notion of educación.

The final CSPEQ model consisted of 35 items from which four reliable and culturally informed PE domains emerged: *Bien Educado, Academic Support, and Academic Socialization, School Engagement.* Three of the four factors represented home and community related domains (Bien Educado, Academic Support, and Academic Socialization), and one factor reflected PE behaviors related to the school-setting (School Engagement). The resulting multiple dimensions of PE that include numerous distinct home-based PE domains affirm the literature findings that Latinx parents engage in a wider variety of home-based engagement behaviors (Altschul, 2011; Boonk et al., 2018; Jeynes; 2018).

Bien Educado. The Bien Educado domain consists of 8 items that reflect the PE behaviors related to the overall Latinx cultural notion of educación or broader concept of what it means to be well educated. This includes the PE behaviors that support a child's moral, behavioral, and socioemotional skills as well as independence and pragmatic skills (Auerbach, 2009; Olmedo, 2003; Valenzuela, 2010). Embedded within this are PE practices of instilling values of respeto, familismo, or sharing funds of knowledge (i.e., familial

heritage, cultural, and social knowledge) (Gonzalez et al., 1995; Kelly-Vance et al., 2006; Lopez et al., 2001; McWayne et al., 2014; Valencia, 2002; Vélez-Ibáñez & Greenberg, 2005). Items 31, 35, and 37 encompass PE behaviors that focus on a child's value of respeto, socio-emotional skills, and moral and behavioral development within the context of the broader value of educación. For example, item 31 "I teach my child that the way he/she behaves has consequences" is indicative of behavioral management, moral development, and respeto while item 37, "I teach my child how to behave in different spaces" attends to underlying cultural values fostering socio-emotional skills, respeto, and behavioral development. Items 34, 36, 38, 39, and 40 are reflective of Latinx parent efforts to share funds of knowledge to support their child's pragmatic life skills, foster familismo, cultural values, family heritage, and social knowledge. For example, item 39, "I teach my child to ask for help when he/she needs it" represents educación in terms of the development of pragmatic skills to support a child's independence. Item 38, "I teach my child who his/her family members are," represents PE behaviors with the underlying Latinx value of familismo and direct efforts to share funds of knowledge about family heritage.

It is important to address that item BE_34, "I teach my child skills or other important things I learn from my community," cross-loaded with the Academic Socialization domain. While the item may share some commonality of orienting their child to learning like the items in the Academic Socialization domain, the item's relationship within the Bien Educado domain is theoretically more plausible. In particular, this type of PE behavior has more to do with developing a child's pragmatic skills and sharing funds of knowledge from the parent's own learned experiences rather than solely about the notion of the importance of education. Furthermore, this type of knowledge being shared is more diverse than a focus on academics

as it is compounded and exchanged within the social networks of Latinx communities and families over time (Gonzalez et al., 1995; Lopez et al., 2001; Valencia, 2002; Vélez-Ibáñez & Greenberg, 2005).

An interesting finding is that the Bien Educado factor remained generally consistent with the previous theorized factor that was adapted from the PEFL's Foundational Education PE domain (McWayne et al., 2013, 2014). However, a key difference is that the Latinx values underlying the PE behaviors of this domain no longer included values of estudios, ganas, and empeños. Instead, there were stronger relationships amongst items focusing on the practice of sharing funds of knowledge and values of educación, respeto, and familismo. This may be due to the fact that this domain is more representative of PE behaviors that fall under the broad notion of educación that focuses on supporting a child's ability to be well-behaved, responsible, moral, respectful, and independent (Auerbach, 2006, 2007; Olmedo, 2003; Valenzuela, 2010). In comparison items that reflect values of estudios, ganas, and empeños are less related as they are more oriented to an underlying factor of academic socialization. Taken together, the resulting Bien Educado domain affirms the relevance of including culturally informed PE behaviors related to cultural notions of educación within the measurement of PE for elementary-aged children.

Academic socialization. Academic Socialization consists of 7 items that entail parent-child communication that motivates or sets standards and expectations of the child as a student and fosters future planning, aspirations, and goals of education. The Latinx cultural values that underlie this domain are estudios, ganas, and empeños (Auerbach, 2009; Goldsmith & Kurpius, 2018; Hill & Torres, 2010; McWayne, et al., 2015; Olmedo, 2003; Padilla et al., 2005; Reese, 2002). This Academic Socialization domain comprises items that

were initially theorized to represent Parent-child communication and Bien Educado domains. Items 32 and 33 that were incorrectly represented by the Bien Educado domain are better explained within the cultural values of estudios and their association with academic socialization. The emergence of the Academic Socialization domain helped to illuminate distinctions in the parent-child communication factor from the initially proposed five-factor model. Parent-child communication items were differentially loaded onto the final model's Academic Socialization and Academic Support domains based on the function of that parent-child communication. Parent-child communication items regarding the importance of education and fostering motivation, aspirations, goals, and future planning (i.e. ganas and empeños) were strongly associated with the Academic Socialization factor. While the Academic Support domain better explained parent-child communication items regarding daily learning, experiences, or well-being in school in order to support the child's success in school. This makes theoretical sense that the shared factor is not simply based on the behavior of communication between the parent and child, but it is rather the function of that communication (i.e., academic support or academic socialization).

The communication represented in the items within this domain includes both explicit and implicit communication through actions. For example, items 32 and 33 demonstrate PE behaviors that orient their child to their role as a student (estudios) through actions. This includes excusing their child from helping at home so they can focus on homework or making sacrifices so that the child can focus on being a student (Auerbach, 2009; Goldsmith & Kurpius, 2018; Hill & Torres, 2011; McWayne et al., 2013, 2014; Reese, 2002). Explicit communication includes items 6, 15, and 28 reflecting parent conversations with their child that orients and motivates their child to the future in order to establish academic goals and

aspirations (Goldsmith & Kurpius, 2018; McWayne et al., 2013). This also includes items 13 and 14 that reflect the cultural practice of using consejos to promote academic socialization and related values of estudios (Ceballo et al., 2010; Goldsmith & Kurpius, 2018; Reese, 2002).

Again, it is important to highlight that item PCC_6, "I talk to my child about how hard he/she tries or talks in school," cross-loaded with Academic Supports. It is possible that the discussion that a parent has with their child about their learning efforts is related to Academic Supports as these conversations can initiate a need for direct parent intervention in their child's learning. However, the distinct nature of this item has been identified in the research literature to be a way Latinx parents can discuss their child's learning efforts in the context of empeños (commitment/dedication to academic goals), ganas (student drive to succeed), and praise for their child's orientation to estudios (Altschul, 2011; Goldsmith & Kurpius, 2018).

Academic support. The Academic Support domain consists of 9 items that encompass parent efforts to support their child's academic success and schoolwork in the home setting. This PE domain combined the initial 5-factor theoretical model's Home Learning Environment and Parent-Child Communication items that all focus upon supporting a child academically. Items 3, 4, 5, 10, and 11 include PE behaviors that foster a home environment conducive to learning. More specifically, items 10 and 11 are related to PE behaviors around homework. Item 11 includes how frequently parents provide direct homework support, while item 10 is indicative of fostering a supportive homework related environment (Walker et al., 2005; Zarate, 2007). Items 3, 4, and 5 reflect parent efforts to engage their children in cognitive and literacy enriching experiences (Boonk et al., 2018;

Cooper et al., 2010; Jeynes, 2018; Loera et al., 2011). Parent-child communication related to supporting their child's academic success at school was represented in items 1, 2, and 7. Items 1 and 2 reflect a parent's communication with their child about school to support their cognitive development by explicitly asking questions to help them learn or discussing their school experiences and learning. Additionally, item 7 entails how parents inquire about their child's socio-emotional well-being and environment at school. School-related discussions with their child regarding their child's school experiences, learning, and well-being demonstrate to their children their support, encouragement, and care for their well-being and academic success (Alschul, 2011; Boonk et al., 2018; Eamon, 2005; Hong & Ho, 2005; Jeynes, 2010; Valadez, 2002). What is interesting is that this dimension of PE expands upon definitions of home-based PE suggesting that efforts to support children's learning at home are not merely supporting their child's homework and providing concrete literacy related activities but also include how parents communicate with their child about school.

The Academic Support domain also included parent behaviors of monitoring a child's school performance within item 26, "I keep track of my child's school performance". While this item was initially theorized to load onto the school-based domain, it is theoretically justified that a parent's ability to monitor their child's academic performance allows them to adjust in the way that they support their child's learning at home. Furthermore, a parent's ability to monitor their child's learning does not appear limited to interacting directly with the school setting and teachers. Given the item's relation to parent-child school discussions and homework support, it is likely that through these processes related to academic support, parents can make their own assessments and monitor how their child is learning. This is supported by the recent literature indicating that the pandemic has increased parents' overall

tracking and knowledge of their child's learning (Bubb & Jones, 2020). It is also worth discussing that this item cross-loads with the Bien Educado domain. This does not make theoretical sense given the literature has examined the monitoring of a child's academic performance to be a school related activity in the qualitative research with Latinx families (Zarate, 2007). Currently, there is no literature that can point to why the monitoring of a child's academic performance is related to the larger culturally related value of educación.

Another surprising finding with this PE domain was the lack of items representing parent efforts to engage their child in cognitively enriching experiences such as learning in the community or bringing toys and resources home to support their child's learning. This was theoretically unexpected given that the items reflecting these PE behaviors were not statistically relevant within the present study's model of PE but have been represented in other culturally response PE measures such as the PEFL (McWayne et al., 2013). Furthermore, cognitively enriching activities in the home and community are a salient aspect of the PE construct across the literature (Althschul 2011; Boonk et al., 2018; Cooper et al., 2010; Dearing et al., 2004; Graves & Brown Wright, 2011; McWayne et al., 2004; Rogers et al., 2009; Sheldon & Epstein, 2005; Stylianides & Stylianides, 2011; Wen et al., 2012; Youn et al., 2012). It is possible these items were related to too many barriers, such as financial barriers or limited access to such opportunities in the family or community. Additionally, access to such activities in the community was likely impacted by the pandemic (Anderson et al., 2021; Saracho, 2022).

School Engagement School Engagement consists of 11 items that reflect PE behaviors directly related to the school setting such as parent-teacher communication, parent help seeking, volunteering, and discussing school related information with their parent

community. These items are consistent with McWayne's theoretical exploration of school-based engagement for Latinx families that explicates three overall activities: school communication, school presence, and learning about or using the school system (McWayne et al., 2013). Parent-school communication was the most salient aspect of this overall School Engagement domain. A total of 8 items identified parent-teacher communication regarding parent-school collaboration, school information or resources, as well as student socio-emotional, behavioral, and academic development. The relevance of this construct in school-based engagement is strongly supported by the literature (Cunha et al., 2017; Berlinski et al., 2016; LaRocuqe et al., 2011; Jeynes, 2018; Kraft & Dogherty, 2013; Kraft & Monti-Nussbaum, 2017; Kraft & Rogers, 2015). Item 12, "I volunteer or donate my skills and time to my child's school," was the only School Engagement item reflecting the traditional PE behaviors of parent presence in the school. Items 29 and 30 highlight PE behaviors of learning and using their school system as the items encompassed parent help seeking at their child's school and communicating with parents within their school community to discuss school related topics.

Overall, the School Engagement items share a commonality of sharing or gathering information about the school whether that is through other parents, communicating with the teachers, or help seeking behaviors at their school. For Latinx parents, it is less about school presence in the traditional PE sense such as attending school events or being involved with parent-lead organizations (Boonk et al., 2018; Henderson & Map 2002; Hill & Torres, 2018; Valadez, 2002). These PE behaviors were not as related to this function of information gathering and sharing to support their child's learning. This is supported in the literature that school presence does not necessarily help Latinx parents support their child's learning

(Altschul, 2011; Cooper et al., 2010). Instead, the PE behaviors in this School Engagement domain provide other ways for parents to connect with their school setting to gather information and increase understanding of their school system in order to grow their cultural capital and networking to better support their child's learning (Bryan et al., 2011; Hill & Taylor, 2004; Lee & Bowen, 2006; Hoover-Dempsey & Sandler, 2005; Hill et al., 2009).

In general, the findings of this study found cross-loadings with many of the school-based items from the initially theorized model. This includes items within the final model's School Engagement domain, item 29 *Help Child Needs* and item 30 *Talk Other Parents*, that cross-loaded with the Bien Educado domain. These items appear to have a clear role in their relationship to school presence, school information seeking, and learning, which are all PE constructs identified within the school-based PE domains of other models from previously established measures (Fantuzzo et al., 2000; McWayne et al., 2013). However, it was theoretically unclear why parent PE behaviors of information seeking through parent community or help seeking within the school were related to the broader notions of eduacion within the Bien Educado factor. What is understood in the literature is that school-based engagement is not looked at the same by Latinx families (Altschul, 2011; Boonk et al., 2018; Henderson & Map, 2002; Hill & Torres, 2018). Thus, the relationship between these school-based setting items needs to be re-evaluated to see if the items related to school presence (attending school events or volunteering) should be considered at all. Alternatively, the effects of the pandemic may have played a part in this outcome as well (García & Weiss, 2020; Jalongo, 2021; Ribeiro et al., 2021; Wilson, 2020).

Limitations and Future Research

While this study has laid the initial foundation for a more culturally informed and accurate measure of Latinx PE within the elementary school context, there are several limitations and additional psychometric research that is warranted to further the reliability and validity of this measure.

A primary limitation of the present study was the small sample size. The current study's measure requires a large sample to appropriately model an instrument with a large number of factors and items (Brown, 2015; Costello & Osborne, 2005). Further validation efforts are required to confirm the factor structure established within the EFA with an independent and larger sample. Relatedly, the small sample size may have engendered the underutilization of response categories for several items within the measure. In particular, there were four items in which the lowest response category was not endorsed by either parent group, including items 26, 31, 35, and 39. Additionally, there were six items in which response categories were endorsed by one group and not the other. Items 1, 8, 34, 37, and 40 had the lowest response category endorsed by Latinx parents, while that same category was endorsed by one or none of the parents in the White group. Item 7 had its lowest category endorsed by White parents, while none of the Latinx parents had used this response category. In particular, further research may be needed to examine item 40, regarding PE behaviors in which they encourage family members to do activities with their children, as 4% of the Latinx parent subsample used the "never" response category in comparison to none of the White parent group. Further information is needed to explain why there may be a difference in the response frequencies across Latinx and Caucasian populations for this specific PE behavior.

While the present study carefully formulated the CSPEQ's likert-scale through qualitative data from cognitive interviews and based upon previously established measures, the accuracy of items' response options should be further explored. It is possible that the underutilized response categories are simply due to the small sample size and future studies with larger samples will not identify these same issues. Alternatively, if larger samples continue to find underutilized response categories, then the appropriateness of item response options for the CSPEQ should be explored and potentially modified. It would be important for future uses of the measure to determine whether these ten items will only have 4 response options instead of 5. Validation methods such as Rasch analysis or item response theory (IRT) could explore the CSPEQ's psychometric properties regarding its response categories and item difficulty. In particular, it would be helpful to see whether item response categories function in a linear expected way and how different items of the CSPEQ distinguish between varying levels of parent engagement.

The study's demographics for the Latinx parent sample were overall reflective of the U.S. population's demographics. However, there were some limitations with regard to the diversity of Latinx parent demographics and generalizability of the CSPEQ across Latinx subgroups. The study largely consisted of parents from California, approximately 38%, and thus generalizations of the study's findings are more strongly supported for parents in California. Additionally, over half of the parent respondents identified as female (68%). Attention to this parent demographic is important as efforts to recruit and understand fathers within the PE research have largely been neglected (Kim, 2018). Thus, future psychometric research regarding the CSPEQ should further diversify its samples of Latinx parents with special attention to these demographics.

Future psychometric research examining the CSPEQ would benefit from examining its factor structure across the various diverse identities within the Latinx population including Latinx national origins; language proficiency, SES, and education level; acculturation and generational status; parent and child gender; parent and child age. The CSPEQ was developed within the context of theory, established measures, and research examining Latinx parent populations. While this includes shared Latinx cultural norms or Latinidad, it is worth noting that much of the Latinx populations within these available resources consist of large proportions of Mexican American families (Cruz-Santiago & Ramírez García, 2011; De Genova & Ramos-Zayas, 2003). Furthermore, measurement development efforts (e.g., cognitive interviews) were largely conducted in the context of California elementary schools that serve large populations of Latinx families of Mexican descent. Thus, the generalizability of the CSPEQ must be further explored in psychometric research. The Latinx population is very heterogeneous and the varying Latinx identities that may be related to the national origins of Latinx parents could potentially impact PE behaviors and thus parent responses to the measure (Jang, 2019). Consequently, it would be helpful for future research to examine the CSPEQ's factor structure across the national origins of Latinx families (e.g., Mexican American, Puerto Rican American, Cuban American) to ensure that PE functions similarly across these groups.

The present study also took into consideration barriers related to language, SES, and parent education level during the development of the measure, given the research that Latinx PE can vary depending on English language proficiency, educational attainment, and SES (Kim & Sheridan, 2015; McWayne et al., 2016). Future psychometric research should also examine how the CSPEQ's factor structure holds across parents with varying levels of

education, language proficiency, and SES. Similarly, there is evidence that parent generational status and acculturation can shift the PE practices of parents. (Carranza et al., 2009; Lopez et al., 2000; Hill & Tyson, 2018; Moreno & Lopez, 1999). This literature suggests that Latinx parents' levels of acculturation and generational status can not only influence the types of PE behaviors they engage in but also their cultural congruence with the schools. Again, this is another key parent demographic that should be evaluated in future psychometric research using invariance testing.

Research examining the factor structure of the CSPEQ should also examine parent gender since PE is largely looked at with mothers and not fathers (Kim, 2018). Relatedly PE behaviors may look differently for Latinx families depending on child gender. The literature points to differences in female students in which Latinx girls take on larger responsibilities for their families in comparison to males (Suárez-Orozco & Qin, 2006). Within the general PE literature, there is also some evidence that PE levels are in general lower for boys (Lee et al., 2007). Future research examining how the factor structure holds across child age is also implicated in the research findings that parent engagement behaviors shift as children progress through development and level of schooling (Boonk et al., 2018; Seginer, 2006). Even within the elementary school setting, studies have shown that in general PE decreases as the child's age increases (Dearing et al., 2006; Green et al., 2007; Hoover-Dempsey et al., 2005). Lastly, it would be worth re-visiting whether this Latinx PE model holds for the White parent population. An interesting finding from the separate group CFA analyses revealed that the Latinx culturally informed Bien Educado factor was able to explain PE behaviors for White parents. This suggests that these parent behaviors may also be relevant to White

families and further research is needed to examine the salience of these types of PE behaviors in White families.

As previously indicated, the present study provides preliminary psychometric evidence establishing this new culturally informed PE measure for Latinx families. Consequently, future validation research is needed to explore the CSPEQ's relationship to expected outcomes of PE such as academic achievement. Criteria reliability should be established not only through the more distal outcomes of grades, math, and reading performance, but also through more proximal outcomes such as student academic motivation, academic self-efficacy, self-regulatory abilities, and social self-efficacy (Boonk et al., 2018; Hill & Tyson, 2009; Hoover-Dempsey & Sandler, 1995, 1997, 2005, & 2010; Jeynes, 2018). It is also important that future research considers examining the factor structure across the different Spanish and English language versions of the CSPEQ.

The present study's efforts to identify Latinx culturally informed PE practices within measurement highlight the need to address the limited knowledge regarding Latinx PE in the literature and school systems. More research is needed to examine PE within Latinx families as this could provide valuable information that augments the theoretical interpretations of some of the items that were retained or removed within the CSPEQ's model modification. For example, notions of educación are not seen as two different PE activities of developing either cognitive or socio-emotional and behavioral capacities (Okagi & Bingham, 2010; Reese et al., 1995). It is possible an item related to this broader notion of educación, such as item 8, that was removed from the final model may somehow be understood by Latinx families as a part of academic socialization. Qualitative research may be beneficial in understanding the relationship between the various CSPEQ factors and items. There is also a

need in the research to examine the significance of school-engagement within a Latinx culturally informed model of PE. In particular, school related PE items on the questionnaire continued to be problematic (i.e. cross-loading items). Thus, research is needed to better understand Latinx parents' perceptions of school-based PE activities as well. It may be the case that there is no distinction between the home and school-based PE activities and thus PE measures need to re-evaluate how they include the traditional "school-based" activities.

An additional limitation of the study is the significant but unclear impact of the pandemic on this study's measurement development and the results of the study itself. Our understanding of the impact of the pandemic on the PE, student and family outcomes, and the U.S. education system is in its infancy. It would be negligent to ignore the fact that the pandemic has shaped PE expectations and behaviors that are not being accounted for in this study's PE measure. For instance, school-based engagement that requires parents to be physically at a school was not feasible during some of the time period from which parents reported their PE behaviors. This potentially influenced the results of the study. Furthermore, it is notable that school-based PE behaviors related to parents' physical presence at school may no longer be helpful or even be outdated given the aftermath of COVID-19. Future research is needed to explore these research questions.

In general, more research is needed to evaluate the impact of the pandemic on PE and what is now required to not only support student learning but recover from the significant losses sustained in student education and schools. However, PE will certainly continue to be important to schools. For example, research has shown that children's academic motivation has decreased significantly as a result of the pandemic (Saracho, 2022) and PE has been supported in theoretical models and the research to increase student academic motivation

(Carranza et al., 2009; Fan & Williams, 2010; Hong & Ho, 2005; Green et al., 2007; Gonida & Cortina, 2014; Walker et al., 2011). As a result, it is critical for schools and researchers to have accurate PE measurement tools to allow them to evaluate the changes in PE and understand the role of PE in the recovery from the pandemic. The CSPEQ takes significant steps to move away from the traditional school-based focused measures and move towards an emphasis on home-based engagement. This shift in measurement may be better adaptable to our changing education and family home spaces as a result of the pandemic. More importantly, the CSPEQ provides more accurate measurement of PE for Latinx parents, a population has been disproportionally affected by the pandemic.

Implications and Conclusion

The present study provides significant contributions to PE measurement by establishing and validating a measure that provides a new culturally embedded framework of PE for Latinx families. In particular, the CSPEQ is the first PE measure known to the researcher that encompasses a culturally informed model of PE for Latinx families within the elementary school setting. Prior efforts are limited to the early childhood school context (McWayne et al., 2013). The CSPEQ is an important addition to culturally informed PE measurement for Latinx families because it reflects developmentally appropriate items for the elementary school setting and adds a range of important PE behaviors such as parent-child communication.

The development of the CSPEQ demonstrates several important shifts in PE measurement. First, the results of the CSPEQ confirm that PE is a multidimensional construct that can include both salient PE domains and parent behaviors that are associated with PE outcomes. Thus, the CSPEQ's ability to capture multiple salient domains of PE and

behaviors has the potential to allow researchers to examine predictive components of PE for Latinx families and help better identify what types of distinct PE behaviors help Latinx students in different ways. Additionally, the model of PE identified in the CSPEQ re-evaluates school-based engagement by consisting of only one factor of school engagement and placing less emphasis on this domain in the overall model. Results demonstrated that school-based engagement is less related to traditional PE behaviors of parent presence in schools such as attending school events. Instead, the school engagement construct consisted of PE behaviors related to parent-teacher communication and other PE behaviors focused on parent efforts to gather information, learn about, and use the school system.

PE is also recognized within this study to be a multidimensional construct that includes a multitude of distinct home-based domains of PE. The results of the present study identified a variety of specific home-based PE behaviors captured by several PE domains important to positive student outcomes (Goodall & Montgomery, 2014; Jeynes, 2018; Sylva et al., 2008). This measurement model affirms the wide variety of Latinx PE behaviors that are identified in the literature but are lacking in the existing PE measurement (Altschul, 2011; Boonk et al., 2018; Jeynes; 2018). The PE model identified in this study addresses the lack of home-based dimensions and behaviors in previous measures that limited a comprehensive understanding of how Latinx families engage. Consequently, the CSPEQ can better capture the diverse and unique ways Latinx families support their child's learning at home. The utility of the CSPEQ is strengthened by the aftereffects of the pandemic that witnessed an increase in parent responsibility for children's learning at home and a subsequent shift in emphasis on home-based PE (Grossman, & Grossman, 2012; Jalongo, 2021; Ribeiro et al., 2021; Sonnenschein et al., 2020).

The CSPEQ demonstrated that PE models can be developed to include a culturally informed framework of PE and address various barriers to enable accessibility for Latinx families of varying socioeconomic, linguistic, and immigrant status backgrounds. The results of this study affirmed culturally informed PE behaviors of Latinx parents and illuminated how those culturally embedded behaviors are related to various dimensions of PE. A particularly important implication is that the relationship between PE behaviors and their domains was shaped by their underlying Latinx cultural values. Such findings highlight the importance of using an emic approach of focusing on cultural norms and practices of Latinx families in the construction of a new theoretical model of PE. Conversely, schools typically use the etic approach of analyzing the PE construct in the same way across groups. This systemic school conceptualization of PE has perpetuated deficit perspectives of Latinx PE and opportunity gaps. The use of the emic approach within the CSPEQ and school approaches to PE, in general, can allow for a strengths-based framework that is highlighted in the literature to close achievement gaps. As a measurement tool in schools, the CSPEQ can help create a cultural shift in which school definitions, beliefs, and understanding of Latinx PE are no longer centered on Whiteness. The significance of this culturally informed measure is evidenced by its ability to highlight rather than diminish Latinx PE efforts and thus slow the perpetuation of racist stereotypes that Latinx families have little to contribute to their child's education.

While the CSPEQ provides important first steps to conceptualizing and measuring PE for Latinx families in culturally informed ways, the present study only provides preliminary validation efforts. However, the implications of this study highlight the importance of continued validation efforts to enable the use of this measure for schools serving large

populations of Latinx families. It is evident that the CSPEQ has the potential to accurately identify PE behaviors for Latinx families to garner a more accurate understanding of PE within these communities and shift school systems in their thinking regarding Latinx family engagement altogether.

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Appendix A
Review of Parent Engagement Measures

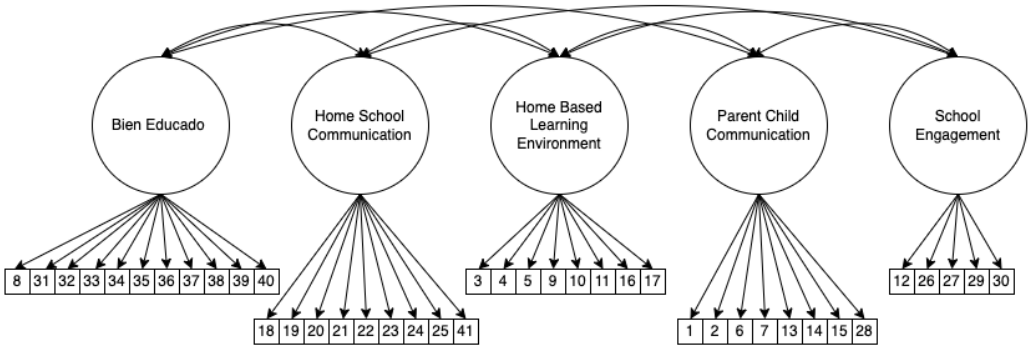
Parent Engagement Measures (Parent Self Report Early Childhood & Elementary)

Authors	Instrument Name or Type	Domains	Involvement Indicators	Items
Anderson & Minke (2007)	Parent Involvement Practices Scale	-Home based involvement -School based involvement	Spend time working on number skills, attend parent teacher conference	32
Cooper & Crosnoe (2007)		- school-based	Assist teachers in classroom, volunteer at school, PTO or other school meetings, talked to teacher about school work, attend school events or conferences	8
Domina (2005)	Survey developed for study	-school-based -home-based	PTA & teacher meetings, classroom volunteer, volunteers outside class, hw help, check hw	6
Driessen et al 2005	Survey developed for study	-school-based -home-based	Hw help, parent child relation on school issues, non academic activities, tv regulation, school & home rules, secondary education	8
Epstein & Salinas (1993)	Parent Questionnaire Parents Elementary	-home based -school based	School group participation, parent school perceptions, school information desired	80
Fantuzzo, Tighe, & Childs (2000)	Family Involvement Questionnaire (FIQ)	-school based -home based -home school conferencing	Limit TV watching, working with child on number skills, volunteering, planning classroom activities with teacher, attend class trips, talk to teacher about classroom rules, communication through phone or notes	42
Garcia-Coll et al. (2002)	Parent Involvement Interview	-parent PE values -school based -home-based -provision material resources	Actively involved in school, initiate teacher communication, behavior or time management, place at home to do work & educational resources	8
Khol et al. (2000)	Parent-Teacher Involvement Questionnaire (PTIQ)	-parent-teacher relationships quality - school-based -parent-teacher contact -Home-based -Parent endorsement of school	How often read to child, school is preparing child for future, do you feel teacher cares about child, attend school events, PTO meetings, how often did you call teacher in past year, attend parent teacher conference	26

		-teacher perception of parent (Teacher reported)		
Lee & Bowen (2005)	Survey developed for study	School-based	Visit school, PTA meetings, volunteer school/class, attend school events,	6
McBride et al. (2009)	Survey developed for study	School-based	Class volunteer, teacher conferences, teacher communication, school events, PTA.	
Mcwayne et al. (2013)	PEFL	-Foundational Education -Supplemental Education -Future-oriented Teaching -School Participation	Volunteer at school, tell stories to child, teach child how to share, talk with child about what would like them to be in the future, enroll child in classes outside of school, teach child who their family members are	43
Schueller, McIntyre, & Gehlbach, (2017)	Parent Involvement	-School Based	Meet with teachers, involved in school parent groups, communicate with other parents about school, volunteer/help at school	4
Walker, Wilkins, Dallaire, Sandler, & Hoover Dempsey (2005)	Parent Involvement Scales	-School Based -Home Based	Volunteer at school, communicate teacher regularly, hw help, attend school needs, support teacher decisions, stay on top of things at school, explain tough assignments to child, talk with parents from school, make school better, talk to child about school day	10
Wong & Hughes (2006)	Parent Reported Involvement Measure	-Parent positive school perceptions -Parent-Teacher Communication -Parent teacher shared responsibility -Parent School based involvement	Parent monitor hw completions, parent asks teacher question or makes suggestion about child, teacher is responsible for solving child's learning problem, attends parent teacher conference, school volunteering, parent enjoys talking with child's teacher, child's school is good place for child to be	32

Appendix B
Parent Engagement Theoretical Framework

Proposed Correlated Factor Model of Parent Engagement



Appendix C

Final Qualtrics Parent Engagement Questionnaire

Culturally Inclusive Parent Engagement Questionnaire (CIPEQ)

The Culturally Inclusive Parent Engagement Questionnaire (CIPEQ) is being created to help schools understand the many different ways parents support their child's learning and development both at home and school. There are no correct answers or one correct way of being involved in a child's learning. Additionally, there are many ways in which parents can get involved in the education of their children.

Think about **ONE of your elementary aged children** and how you support that child's learning and answer all the questions **based on what you actually do**, instead of what you hope or believe you should do.

DIRECTIONS: For each question below, please circle how often the following **behaviors** have happened within **this academic year for ONE of your elementary aged children:** *Monthly, Once a week, Several times a week, Daily, Multiple times a day*

1. I talk to my child about what he/she learns or does in school.

- ○ Monthly
- ○ Once a week
- ○ Several times a week
- ○ Daily
- ○ Multiple times a day

2. I ask my child questions to help him/her learn.

- ○ Monthly
- ○ Once a week
- ○ Several times a week
- ○ Daily
- ○ Multiple times a day

3. I tell stories or read to my child (in any language).

- ○ Monthly
- ○ Once a week
- ○ Several times a week
- ○ Daily
- ○ Multiple times a day

4. I have my child take part in activities I do around the house (cooking, cleaning, fixing things).

- ○ Monthly
- ○ Once a week
- ○ Several times a week
- ○ Daily
- ○ Multiple times a day

5. I listen to my child read to me (in any language).

- ○ Monthly
- ○ Once a week
- ○ Several times a week
- ○ Daily
- ○ Multiple times a day

DIRECTIONS: For each question below, please circle how often the following **behaviors** have happened within **this academic year for ONE of your elementary aged children:** *Never, A few times a year, Monthly, Weekly, Daily*

6. I talk to my child about how hard she/he tries or works in school.

- ○ Never
- ○ A few times a year
- ○ Monthly
- ○ Weekly
- ○ Daily

7. I talk to my child about how he/she gets along with others at school (such as other students, teachers, school staff).

- ○ Never

○ A few times a year

○ Monthly

○ Weekly

○ Daily

8. I teach my child how to take care of his or her things.

○ Never

○ A few times a year

○ Monthly

○ Weekly

○ Daily

9. I have my child participate in after-school activities or classes (for example Boys & Girls club, Girls inc., sports teams, art, dance, computers).

○ Never

○ A few times a year

○ Monthly

○ Weekly

○ Daily

10. I make sure my child has a regular place and time to do schoolwork at home.

○ Never

○ A few times a year

○ Monthly

○ Weekly

○ Daily

11. I support my child while she/he does homework (asking my child questions, simply sitting with them, directly helping myself or through another family member, or hiring a tutor to help).

- ○ Never
- ○ A few times a year
- ○ Monthly
- ○ Weekly
- ○ Daily

DIRECTIONS: For each question below, please circle how often the following **behaviors** have happened within **this academic year for ONE of your elementary aged children:** *Not at all this year, Few times a year, Monthly, Weekly, Several times a week*

12. I volunteer or donate my skills and time to my child's school.

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

13. I tell my child stories about the lives of others to motivate my child to become someone in life.

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

14. I tell my child stories about when I was in school.

- ○ Not at all this year

- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

15. I talk to my child about how much I love learning new things.

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

16. I help my child learn in everyday places or community learning spaces (such as public transportation, playground, supermarket, library, nature/gardens, church/temple, museum, zoo, aquarium, parks, community events).

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

17. I bring home educational toys and learning materials for my child (flashcards, books, videos, notebooks).

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly

○ Several times a week

18. I talk with the teacher about the resources, information, and practices that happen at my child's school (such as tutoring programs, school-wide programs, school curriculum).

○ Not at all this year

○ Few times a year

○ Monthly

○ Weekly

○ Several times a week

19. I talk to the teacher about how we can work together to help my child be successful (our roles, values, and expectations).

○ Not at all this year

○ Few times a year

○ Monthly

○ Weekly

○ Several times a week

20. I share with the teacher what I or my family do with my child at home (activities, family gatherings, rules or responsibilities, dealing with child's behavior).

○ Not at all this year

○ Few times a year

○ Monthly

○ Weekly

○ Several times a week

21. I read or watch information about my child's classroom or school that is shared with me (such as information on the school's website, classroom newsletter, online communication tools like ParentSquare or Google Classroom).

○ Not at all this year

- Few times a year
- Monthly
- Weekly
- Several times a week

22. I share my knowledge about my child's behaviors, strengths, and weaknesses with my child's teacher.

- Not at all this year
- Few times a year
- Monthly
- Weekly
- Several times a week

23. I have friendly or personal conversations with my child's teacher about topics other than school.

- Not at all this year
- Few times a year
- Monthly
- Weekly
- Several times a week

24. I talk to the teacher about my child's learning.

- Not at all this year
- Few times a year
- Monthly
- Weekly
- Several times a week

25. I talk to the teacher about how my child gets along with his/her classmates at school.

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

DIRECTIONS: For each question below, please circle how often the following **behaviors** have happened within **this academic year for ONE of your elementary aged children:** *Never, Rarely, Sometimes, Frequently, Almost always*

26. I keep track of my child's school performance.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

27. I go to social events, meetings, workshops, or parent teacher conferences at my child's school.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

28. I talk with my child about what I would like her/him to be in the future.

- ○ Never
- ○ Rarely

○ Sometimes

○ Frequently

○ Almost always

29. I look for help at my child's school so that my child gets what she/he needs.

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

30. I talk with other parents about my child's school (such as events, staff, students, class activities).

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

31. I teach my child that the way he/she behaves has consequences.

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

32. I excuse my child from helping at home so he/she can focus on homework and learning.

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

33. I make sacrifices at home so that my child can focus on being a student.

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

34. I teach my child skills or other important things I learn from my job or community (values from work, skills like tasks with numbers, cleaning, business, and crafting).

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

35. I help my child follow the rules and expectations.

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

36. I teach my child about my family's country's traditions, food, and music.

- Never
- Rarely
- Sometimes
- Frequently
- Almost always

37. I teach my child how to behave in different situations or places (such as social situations, home, school, doctor offices, other family members' homes, library).

- Never
- Rarely
- Sometimes
- Frequently
- Almost always

38. I teach my child who his/her family members are (family history, ancestors, talk about current family members).

- Never
- Rarely
- Sometimes
- Frequently
- Almost always

39. I teach my child to ask for help when he/she needs it.

- Never
- Rarely
- Sometimes
- Frequently

○ Almost always

40. I encourage other family members to do activities with my child (either immediate or non-immediate family).

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

41. I talk with the teacher about how my child behaves at school.

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

Appendix D
Demographics

Demographic Questionnaire

Parents/Guardians: Please complete the following information about **YOURSELF**.

Relationship to Child:

Your age:

_____

What is your gender?

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ Prefer not to say
- ○ Other _____

What is your marital status?

- ○ Single
- ○ Married/Partnered
- ○ Separated/Divorced
- ○ Widowed

How many children do you have?

Did your child attend preschool?

- ○ No
- ○ Yes

Highest educational grade level or professional degree completed:

- ○ Less than high school
- ○ High school diploma
- ○ Some college/professional training
- ○ College degree
- ○ Graduate school

Please indicate your Ethnicity:

If applicable, what Latin American country/countries are you and your family from?

With what generational status do YOU identify?

- ○ I was born outside of the U.S. Please specify country: _____
- ○ First Generation (you were born in the U.S. and your parents were born outside of the U.S.)
- ○ Second Generation (you and your parents were born in the U.S., but your grandparents were not)
- ○ Third Generation and beyond (you, your parents, and your grandparents were born in the U.S.)

What language did you learn first?

- ○ Spanish
- ○ English
- ○ Other

What language do you feel most comfortable speaking?

- ○ Spanish
- ○ English
- ○ Both Spanish and English
- ○ Other

Please complete the following information about **YOUR CHILD** in elementary school (choose only one of your elementary aged children).
Your child's age:

Your child's grade:

What type of school does your child attend?

- ○ Public school
- ○ Special education school
- ○ Private school
- ○ Charter school
- ○ Magnet school
- ○ Other _____

What state does your child attend school?

What is your child's gender?

- ○ Male
- ○ Female
- ○ Non-binary / third gender
- ○ Other _____
- ○ Prefer Not to Say

What ethnicity is your child:

- ☐ White
- ☐ Mexican, Mexican American, Chicano/a/x
- ☐ Puerto Rican

- [ ] Cuban
- [ ] Another Hispanic, Latino/a/x or Spanish origin

With what generational status does your child identify?

- ○ He/she was born outside of the U.S. Please specify country: _____
- ○ First Generation (your child was born in the U.S. and you were born outside of the U.S.)
- ○ Second Generation (you and your child were born in the U.S., but your grandparents were not)
- ○ Third Generation and beyond (you, your child, and your parents were born in the U.S.)

What language did your child learn first?

- ○ Spanish
- ○ English
- ○ Other _____

What language does your child feel most comfortable speaking?

- ○ Spanish
- ○ English
- ○ Both Spanish and English
- ○ Other

Does your child qualify for free and reduced lunch?

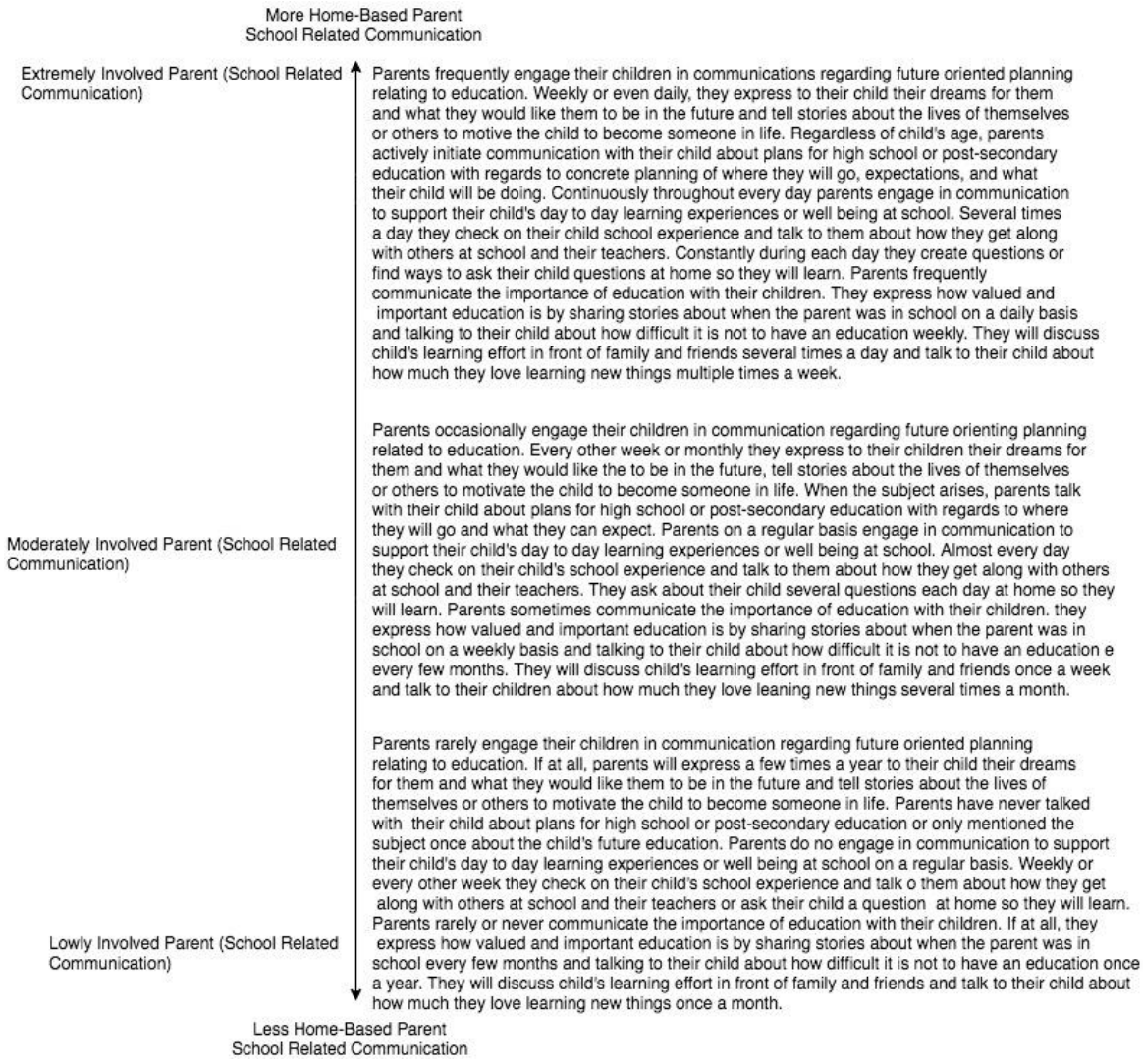
- ○ Yes
- ○ No

Your child participates in a Dual Language Immersion Program:

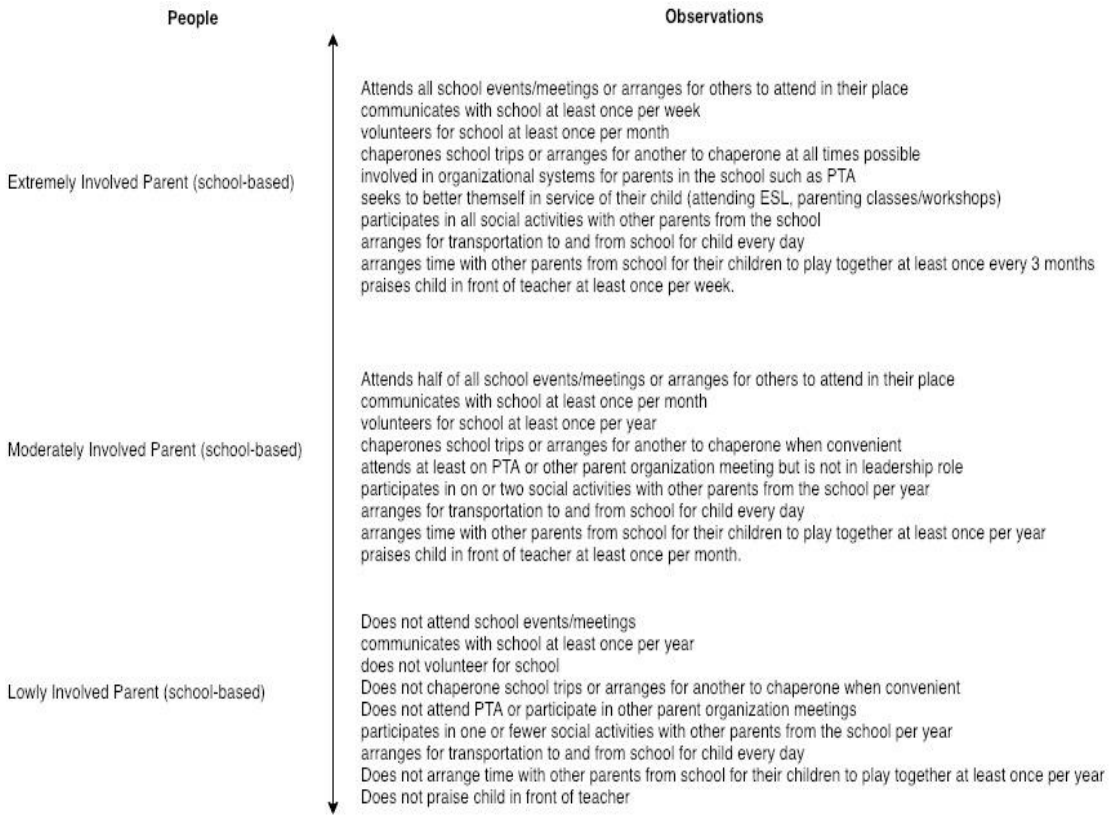
- ○ Yes
- ○ No

Appendix E
Construct Maps by PE Dimensions

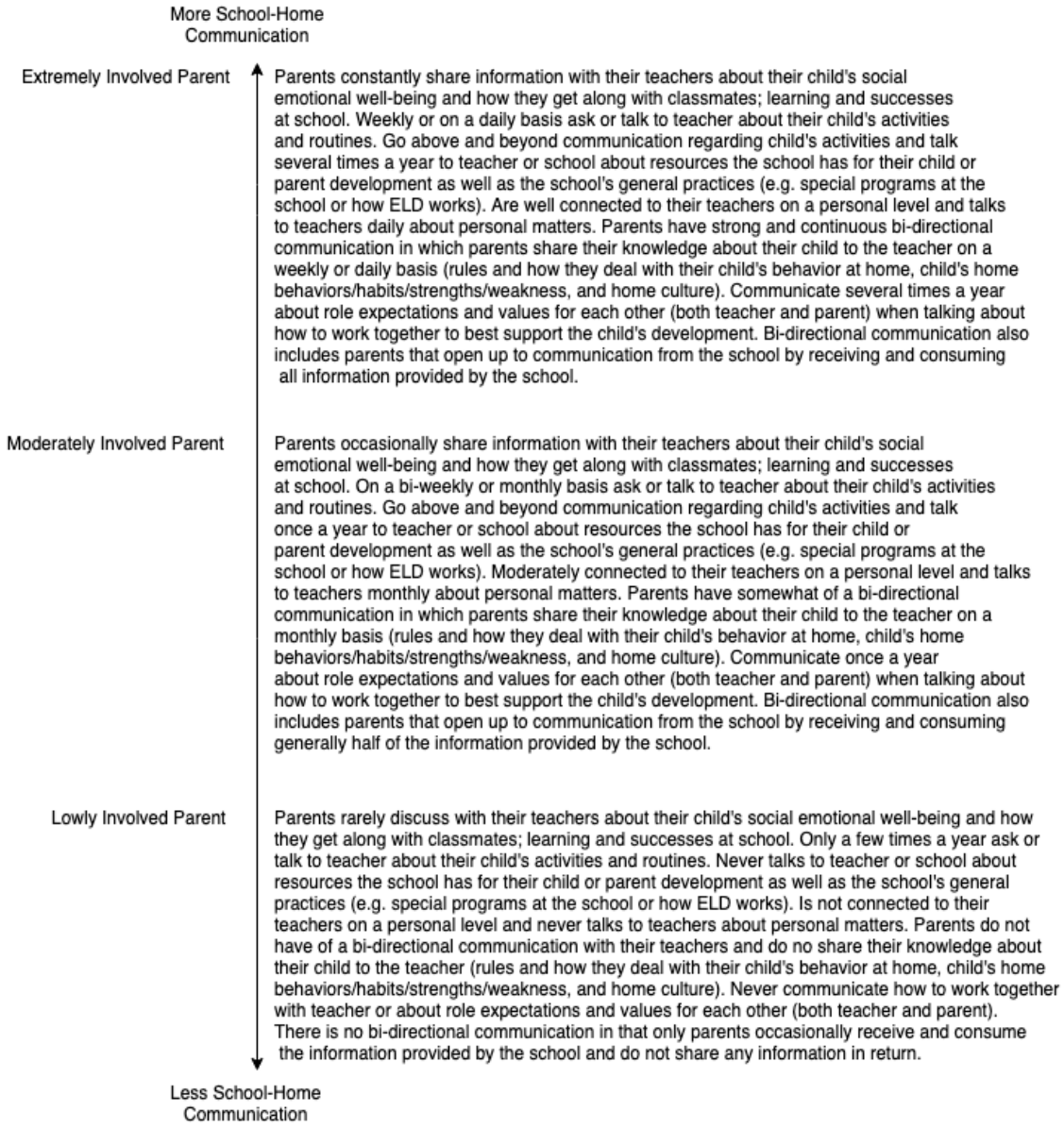
Parent-Child Communication Construct Map



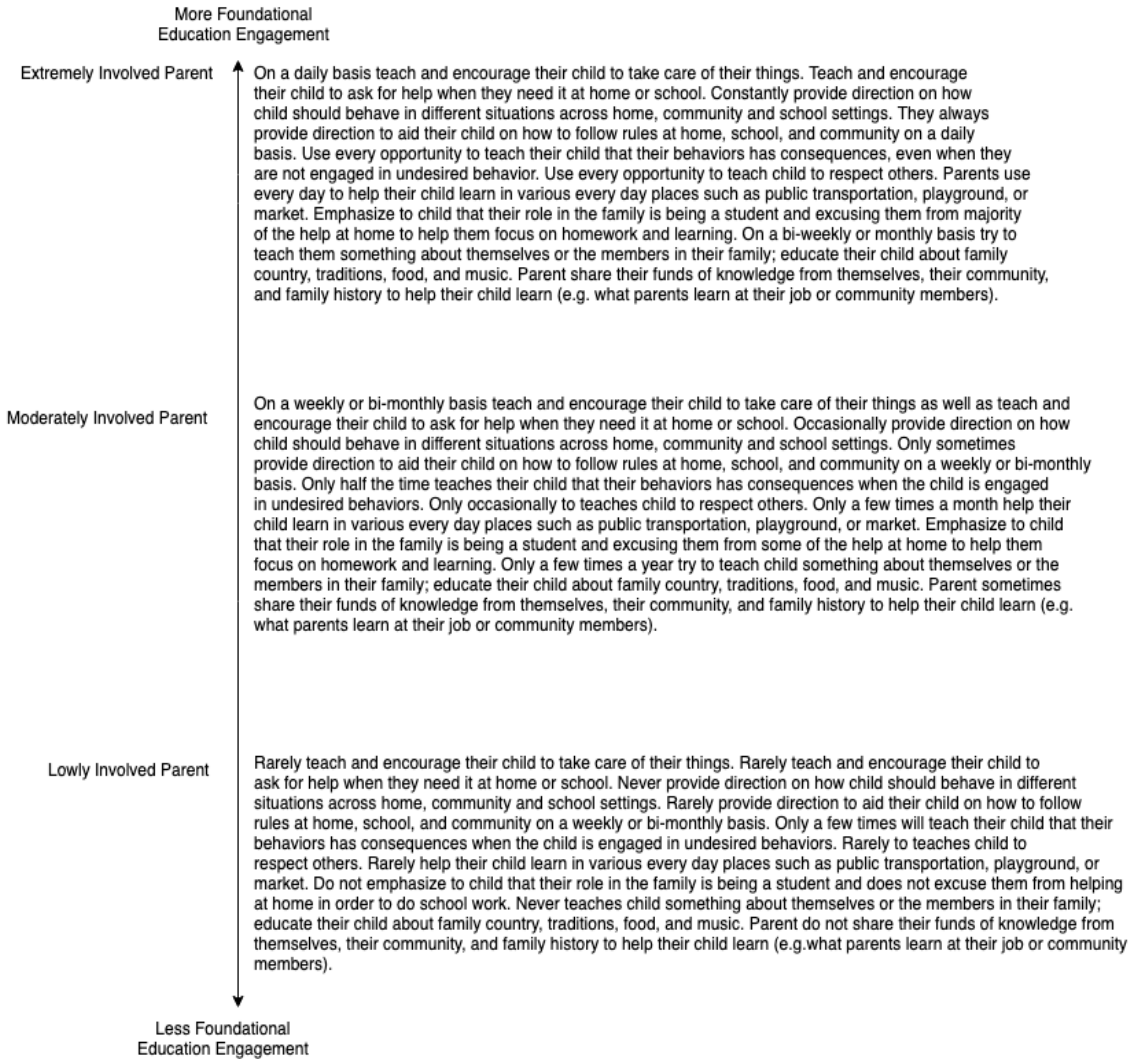
School Engagement Construct Map



School-Home Communication Construct Map



Bien Educado Construct Map



Appendix F
Cognitive Interview Pilot Procedures

- Review consent form with parent and obtain signatures prior to start of interview
- Read PE measure directions to parent and confirm clarity of directions
- Explain and model for parent think aloud process that you will be asking parents to engage in when they respond to each question.
- Engage parents in Think Aloud Training Activity Before parents begin as respond to items
    - We are going to do an activity that will help prep you to think aloud so that as you answer questions – we can see "How did you come up with that answer?"
    - Try to visualize the place where you live and think about how many windows there are in that place. As you count to the windows tell me what you are seeing and thinking about.
        - If windows do not work try lights or doors perhaps

Table 4.1 Common Cognitive Probes

Cognitive Probe	*Example*
Comprehension/Interpretation Probe	What does the term "outpatient" mean to you?
Paraphrasing	Can you repeat the question I just asked in your own words?
Confidence Judgment	How sure are you that your health insurance covers drug and alcohol treatment?
Recall Probe	How do you remember that you went to the doctor five times in the past 12 months?
Specific Probe	Why do you think that cancer is the most serious health problem?
General Probes	How did you arrive at that answer? Was that easy or hard to answer? I noticed that you hesitated. Tell me what you were thinking.

Additional Response Process Questions :

- Can you repeat the question you just read in your own words?
- What does the term mean to you?
- Was it easy or difficult to remember how many or how often you did something?
- Was it easy or difficult to choose an answer?
- How did you come up with that answer?

Appendix G
Initial CSPEQ Items Draft with Source

Initial CSPEQ Items by each dimension of Parent Involvement

Bien Educado Dimension	**Source**
22. I teach my child to show respect to others.	PEFL
23. I teach my child that his/her behavior has consequences.*	PEFL
24. I excuse my child from helping at home so they can focus on homework and learning.*	RES
25. I make sacrifices at home so my child can focus on being a student.	RES
26. I teach my child skills or other important things I learn from my job or community.*	RES
27. I help my child follow the rules and expectations.	PEFL
29. I teach my child about my family's country's traditions, food, and music.	PEFL
30. I teach my child how to behave in different situations.*	PEFL
31. I teach my child who his/her family members are.	PEFL
32. I teach my child to ask for help when he/she needs it.	PEFL
33. Teach my child how to take care of his or her things.	PEFL
Home-Based Learning Environment	
28. I help my child learn in every day places (such as public transportation, playground, supermarket).*	PEFL
34. I take my child to places in the community to learn (library, museum, zoo, aquarium).**	PEFL
35. I tell stories or read to my child (in any language).	RES
36. I encourage other family members to do activities with my child.*	PEFL
37. I put my child in activities or classes outside of school (for example boys & girls club, sports team, art, dance, computers).*	RES
38. My child participates in activities I do around the house (cooking, cleaning, fixing things).	PEFL
39. I bring home educational toys and learning materials for my child (flashcards, books, videos, notebooks).	RES
40. I listen to my child read to me (in any language).	RES

41. I make sure my child has a regular place and time to do school work at home.	RES
42. I help my child with homework or ask questions about their homework.*	RES
43. I monitor my child's homework (whether it is completed or turned in; how much time they spend doing it).**	RES
44. I monitor my child's activities at home (set wake up and bedtimes; limit my child's time spent on tv, computer, tablets/ipad, or phone; check if homework is completed/turned it or how much time they spend doing homework).*	RES
School Engagement Dimension	
2. I monitor my child's school attendance and school performance.*	RES
4. I go to events, meetings, or parent teacher conferences at my child's school.*	PEFL/FIQ
6. I volunteer at my child's school.*	PEFL
8. I seek help at my child's school so that my child receives what she/he needs.*	PEFL
11. I go on class or schoolwide trips with my child.**	PEFL/FIQ
13. I donate my skills and time to my child's school.**	RES
15. I participate in social activities at school.**	FIQ
18. I talk with other parents about my child's school (events, staff, students, class activities).	FIQ
School-Home Communication Dimension	
45. I talk to my teacher about resources, information, and practices that happen at my child's school.*	RES
46. I talk to my teacher about how we can work together to help my child be successful (our roles, values, and expectations).	RES
47. I share with my teacher what I or my family do with my child at home (activities, family gatherings, rules or responsibilities, dealing with child's behavior).	RES
48. I read or watch information about my child's classroom or school that is shared with me.*	RES
49. I talk with my child's teachers about my child's behavior at school.*	RES
50. I share my knowledge about my child's behaviors, strengths, and weaknesses with my child's teacher.	RES
51. I talk with my child's teachers about personal or family matters.*	FIQ

52. I talk to my child's teachers about his/her daily routine.*	FIQ
53. I talk with my child's teachers about my child's learning	RES
54. I talk to the teachers about how my child gets along with his/her classmates at school	FIQ
Parent-Child Communication Dimension	
1. I talk to my child about their learning efforts.*	RES
3. I talk to my child about how they get along with others at school and/or the teacher.	RES
5. I talk with my child about what I would like her/him to be in the future.	PEFL
7. I tell stories about the lives of others to motivate my child to become someone in life.	PEFL
9. I ask and talk about my child's daily school experiences with her/him.**	FIQ
10. I talk to my child about what they learn or do in school.*	RES
12. I share stories about when I was in school.*	FIQ
14. I talk about plans for high school with my child.**	RES
16. I talk with my child about how difficult it is not to have an education.	PEFL
17. I ask my child questions so she or he will learn.	PEFL
19. I talk about plans for after high school (careers, college or trade school) with my child.**	RES
20. I talk to my child about how much I love learning new things.	FIQ
21. I tell things to my child to encourage them.	RES

Note. RES= researcher derived item; PEFL= derived from the PEFL; FIQ= derived from FIQ

* item changed based on parent interviews to improve clarity or content domain

**Item removed

Appendix H
Cognitive Interview Consent Form

PE Questionnaire Interview Consent Form

PURPOSE:
You are being asked to participate in a research study. The purpose of the study is to create and test a culturally sensitive and more thorough school PE questionnaire for elementary aged children. The goals of the study are to see how well this questionnaire works to help measure PE in children's learning.

PROCEDURES:
If you decide to participate, you will be giving permission to the researcher to use the PE questionnaire responses to improve the measure's questions. Your participation includes taking time to complete the PE questionnaire during an individual face-to-face interview with the researcher. The interview process, including the completion of the questionnaire, will take approximately 40-60 minutes. During the interview parents will be asked questions about their response process to questions and parenting behaviors related to how you support your child in school. While completing the questionnaire, you are able to skip any question that you do not want to answer on the questionnaire and/or any probing follow up questions from the researcher.

RISKS: There are no significant risks anticipated with participation in the project.

BENEFITS: The results of this study will be used to develop and improve upon PE measures to be comprehensive and broaden definitions of PE to make it more inclusive for diverse families. The creation of this PE measure can help to understand the many different ways parents participate in their child's learning and development both at home and school. It can be used to identify levels of PE in different areas to help shape school practices and PE efforts or understand the impact of school programs and services on PE. Parent potential benefits from completing the questionnaire and/or interviews include greater insight and reflection on parenting practices that could ultimately support child rearing efforts.

CONFIDENTIALITY:
Although the audio interview data collected by the researcher will include identifiable information about you, recordings from the interview sessions will be promptly transcribed to omit any identifiable information and immediately deleted upon the completion of the transcription. Parent interview recordings and transcriptions will be collected/stored on a password protected lab laptop that is kept within a locked UCSB laboratory office. In addition, all of the information gathered from parent interviews will not be published or documented within the results of the study. Rather information will be used to inform the development of the PE survey questions and any changes needed to be made to the survey. However, absolute confidentiality cannot be guaranteed, since research documents are not protected from subpoena. Data shared with the researcher will not be shared with any other researchers to be used in future research studies.

RIGHT TO REFUSE OR WITHDRAW:
You may refuse to participate and still receive any benefits you would receive if you were not in the study. Participation in the research study will have no impact on your own nor your child's standing within the school. You may change your mind about being in the study and quit after the study has started.

QUESTIONS: If you have any questions about this research project or if you think you may have been injured as a result of your participation, please contact: Jennifer Scheller, jscheller@education.ucsb.edu, 650-678-8194. If you have any questions regarding your rights and participation as a research subject, please contact the Human Subjects Committee at (805) 893 -3807 or hsc@research.ucsb.edu. Or write to the University of California, Human Subjects Committee, Office of Research, Santa Barbara, CA 93106-2050.

PARTICIPATION IN RESEARCH IS VOLUNTARY. YOUR SIGNATURE BELOW WILL INDICATE THAT YOU HAVE DECIDED TO PARTICIPATE AS A RESEARCH SUBJECT IN THE STUDY DESCRIBED ABOVE.

Child's Name:_____

Signature of Parent or Legal Representative:_____
Date:_____

Appendix J
Pilot Parent Engagement Measure

Culturally Inclusive Parent Engagement Questionnaire (CIPEQ)

The Culturally Inclusive Parent Engagement Questionnaire (CIPEQ) is being created to help schools understand the many different ways parents support their child's learning and development both at home and school. There are no correct answers or one correct way of being involved in a child's learning. Additionally, there are many ways in which parents can get involved in the education of their children.

Think about **ONE of your elementary aged children** and how you support that child's learning and answer all the questions based on what you actually do, instead of what you hope or believe you should do.

DIRECTIONS: For each question below, please circle how often the following **behaviors** have happened **within this academic year for ONE of your elementary-aged children:** *monthly, once a week, several times a week, daily, multiple times a day*

1. I talk to my child about what he/she learns or does in school.

- ○ Monthly
- ○ Once a week
- ○ Several times a week
- ○ Daily
- ○ Multiple times a day

2. I ask my child questions to help him/her learn.

- ○ Monthly
- ○ Once a week
- ○ Several times a week
- ○ Daily
- ○ Multiple times a day

3. I tell things to my child to encourage them and their learning.

- ○ Monthly
- ○ Once a week
- ○ Several times a week
- ○ Daily
- ○ Multiple times a day

4. I teach my child to show respect to others.

- ○ Monthly
- ○ Once a week
- ○ Several times a week
- ○ Daily

○ Multiple times a day

5. I tell stories or read to my child (in any language).

○ Monthly

○ Once a week

○ Several times a week

○ Daily

○ Multiple times a day

6. I have my child take part in activities I do around the house (cooking, cleaning, fixing things).

○ Monthly

○ Once a week

○ Several times a week

○ Daily

○ Multiple times a day

7. I listen to my child read to me (in any language).

○ Monthly

○ Once a week

○ Several times a week

○ Daily

○ Multiple times a day

8. I monitor my child's activities at home (set wake up and bedtimes; limit my child's time spent on tv, computer, tablets/ipad, or phone; check if homework is completed/turned in or how much time they spend doing homework).

○ Monthly

○ Once a week

○ Several times a week

○ Daily

○ Multiple times a day

DIRECTIONS: For each question below, please circle how often the following behaviors have happened within this academic year for ONE of your elementary aged children : Never, A few times a year, Monthly, Weekly, Daily

9. I talk to my child about how hard she/he tries or works in school.

○ Never

○ A few times a year

○ Monthly

○ Weekly

○ Daily

10. I talk to my child about how he/she gets along with others at school (such as other students, teachers, school staff).

○ Never

○ A few times a year

○ Monthly

○ Weekly

○ Daily

11. I teach my child how to take care of his or her things.

○ Never

○ A few times a year

○ Monthly

○ Weekly

○ Daily

12. I have my child participate in after-school activities or classes (for example Boys & Girls club, Girls inc., sports teams, art, dance, computers).

- Never
- A few times a year
- Monthly
- Weekly
- Daily

13. I make sure my child has a regular place and time to do schoolwork at home.

- Never
- A few times a year
- Monthly
- Weekly
- Daily

14. I support my child while she/he does homework (asking my child questions, simply sitting with them, directly helping myself or through another family member, or hiring a tutor to help).

- Never
- A few times a year
- Monthly
- Weekly
- Daily

DIRECTIONS: For each question below, please circle how often the following behaviors have happened within this academic year for ONE of your elementary aged children:
Not at all this year, Few times a year, Monthly, Weekly, Several times a week

15. I volunteer or donate my skills and time to my child's school.

- Not at all this year

○ Few times a year

○ Monthly

○ Weekly

○ Several times a week

16. I tell my child stories about the lives of others to motivate my child to become someone in life.

○ Not at all this year

○ Few times a year

○ Monthly

○ Weekly

○ Several times a week

17. I tell my child stories about when I was in school.

○ Not at all this year

○ Few times a year

○ Monthly

○ Weekly

○ Several times a week

18. I talk with my child about how difficult it is to not have an education.

○ Not at all this year

○ Few times a year

○ Monthly

○ Weekly

○ Several times a week

19. I talk to my child about how much I love learning new things.

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

20. I help my child learn in everyday places or community learning spaces (such as public transportation, playground, supermarket, library, nature/gardens, church/temple, museum, zoo, aquarium, parks, community events).

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

21. I bring home educational toys and learning materials for my child (flashcards, books, videos, notebooks).

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

22. I talk with the teacher about the resources, information, and practices that happen at my child's school (such as tutoring programs, school-wide programs, school curriculum).

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly

- ○ Weekly
- ○ Several times a week

23. I talk to the teacher about how we can work together to help my child be successful (our roles, values, and expectations).

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

24. I share with the teacher what I or my family do with my child at home (activities, family gatherings, rules or responsibilities, dealing with child's behavior).

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

25. I read or watch information about my child’s classroom or school that is shared with me (such as information on the school’s website, classroom newsletter, online communication tools like ParentSquare or Google Classroom).

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

26. I share my knowledge about my child’s behaviors, strengths, and weaknesses with my child’s teacher.

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

27. I have friendly or personal conversations with my child’s teacher about topics other than school.

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

28. I talk to the teacher about my child's daily school routine.

- ○ Not at all this year
- ○ Few times a year

- ○ Monthly
- ○ Weekly
- ○ Several times a week

29. I talk to the teacher about my child's learning.

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

30. I talk to the teacher about how my child gets along with his/her classmates at school.

- ○ Not at all this year
- ○ Few times a year
- ○ Monthly
- ○ Weekly
- ○ Several times a week

DIRECTIONS: For each question below, please circle how often the following behaviors have happened within this academic year for ONE of your elementary aged children: Never, Rarely, Sometimes, Frequently, Almost always.

31. I keep track of my child's school performance.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

32. I go to social events, meetings, workshops, or parent teacher conferences at my child's school.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

33. I talk with my child about what I would like her/him to be in the future.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

34. I look for help at my child's school so that my child gets what she/he needs.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

35. I talk with other parents about my child's school (such as events, staff, students, class activities).

- ○ Never
- ○ Rarely
- ○ Sometimes

- ○ Frequently
- ○ Almost always

36. I teach my child that the way he/she behaves has consequences.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

37. I excuse my child from helping at home so he/she can focus on homework and learning.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

38. I make sacrifices at home so that my child can focus on being a student.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

39. I teach my child skills or other important things I learn from my job or community (values from work, skills like tasks with numbers, cleaning, business, and crafting).

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

40. I help my child follow the rules and expectations.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

41. I teach my child about my family’s country’s traditions, food, and music.

- ○ Never
- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

42. I teach my child how to behave in different situations or places (such as social situations, home, school, doctor offices, other family members' homes, library).

- ○ Never
- ○ Rarely
- ○ Sometimes

○ Frequently

○ Almost always

43. I teach my child who his/her family members are (family history, ancestors, talk about current family members).

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

44. I teach my child to ask for help when he/she needs it.

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

45. I encourage other family members to do activities with my child (either immediate or non-immediate family).

○ Never

○ Rarely

○ Sometimes

○ Frequently

○ Almost always

46. I talk with the teacher about how my child behaves at school.

○ Never

- ○ Rarely
- ○ Sometimes
- ○ Frequently
- ○ Almost always

Appendix J
Pilot Questionnaire Consent Form

PE Questionnaire Pilot Consent Form

PURPOSE:
You are being asked to participate in a research study. The purpose of the study is to create and test a culturally sensitive and more thorough school PE questionnaire for elementary aged children. The goals of the study are to see how well this questionnaire works to help measure PE in children's learning.

PROCEDURES:
If you decide to participate, you will be giving permission to the researcher to use the PE questionnaire data for the research study. Your participation includes taking time to complete the PE questionnaire. The PE questionnaire will take approximately 10-20 minutes to complete. While completing the questionnaire, you are able to skip any question that you do not want to answer.

RISKS: There are no significant risks anticipated with participation in the project.

BENEFITS: The results of this study will be used to develop and improve upon PE measures to be comprehensive and broaden definitions of PE to make it more inclusive for diverse families. The creation of this PE measure can help to understand the many different ways parents participate in their child's learning and development both at home and school. It can be used to identify levels of PE in different areas to help shape school practices and PE efforts or understand the impact of school programs and services on PE.

CONFIDENTIALITY:
Although the data collected by or through the school will include identifiable information about you, all of the data will be stripped of identifying information prior to being shared with UCSB researchers. In addition, all of the research conducted will be looking at patterns of individual question responses across all participants and not the responses of individual parents. All of the data that is shared will be stored on password protected computers in a locked research office on UCSB's campus. However, absolute confidentiality cannot be guaranteed, since research documents are not protected from subpoena. Data shared with the researcher will not be shared with any other researchers to be used in future research studies.

RIGHT TO REFUSE OR WITHDRAW:
You may refuse to participate and still receive any benefits you would receive if you were not in the study. Participation in the research study will have no impact on your own nor your child's standing within the school. You may change your mind about being in the study and quit after the study has started.

QUESTIONS: If you have any questions about this research project or if you think you may have been injured as a result of your participation, please contact: Jennifer Scheller, jscheller@education.ucsb.edu, 650-678-8194. If you have any questions regarding your rights and participation as a research subject, please contact the Human Subjects Committee at (805) 893 -3807 or hsc@research.ucsb.edu. Or write to the University of California, Human Subjects Committee, Office of Research, Santa Barbara, CA 93106-2050.

PARTICIPATION IN RESEARCH IS VOLUNTARY. YOUR SIGNATURE BELOW WILL INDICATE THAT YOU HAVE DECIDED TO PARTICIPATE AS A RESEARCH SUBJECT IN THE STUDY DESCRIBED ABOVE.

- ○ I agree to participate in this study
- ○ I do not agree to participate in this study

Appendix K
Parent Volunteer Questionnaire Consent Form

Parent Engagement Questionnaire Consent Form

PURPOSE: You are being asked to participate in a research study. The purpose of the study is to create and test a culturally sensitive and more thorough school parent engagement questionnaire for elementary-aged children. The goals of the study are to see how well this questionnaire works to help measure parent engagement in children's learning. This will be done by looking at parent responses to the questions on the questionnaire and seeing if it works equally well for people of different races.

PROCEDURES: If you decide to participate, you will be giving permission to the researcher to use the parent engagement questionnaire data for the research study. Your participation includes taking time to complete the parent engagement questionnaire and a parent/child demographic survey. The parent engagement questionnaire will take approximately 10 minutes to complete and the demographic survey will take 2-3 minutes to complete. While completing the questionnaire, you can skip any question that you do not want to answer.

RISKS: There are no significant risks anticipated with participation in the project.

BENEFITS: The results of this study will be used to develop and improve parent engagement questionnaires to be comprehensive and broaden definitions of parent engagement to make it more inclusive for diverse families. The creation of this parent engagement questionnaire can help to understand the many different ways parents participate in their child's learning and development both at home and school. It can be used to identify levels of parent engagement in different areas to help shape school practices and parent engagement efforts or understand the impact of school programs and services on parent engagement.

CONFIDENTIALITY: The data collected by the investigator will not include any identifiable information about you or your child. In addition, all of the research conducted will be looking at group differences and not the differences of individual children or parents. All of the data that is shared will be stored on password protected computers in a locked research office. In addition, data will be stored online using UCSB's Qualtrics software. Qualtrics data and its corresponding Qualtrics account is password protected and will only be accessed by the researcher. Qualtrics data will also be encrypted to be anonymous and remove IP addresses as well as other online identifiers. Data shared with the researcher will not be shared with any other researchers to be used in future research studies.

RIGHT TO REFUSE OR WITHDRAW: Your participation in this research study is voluntary and you are free to withdraw or discontinue participation at any time when completing the survey. If you withdraw from this research study, you will not be penalized in any way for deciding to stop participating.

QUESTIONS: If you have any questions about this research project, please contact: Jennifer Scheller, jscheller@education.ucsb.edu. If you have any questions regarding your rights and participation as a research subject, please contact the Human Subjects Committee at (805)

893 -3807 or hsc@research.ucsb.edu. Or write to the University of California, Human Subjects Committee, Office of Research, Santa Barbara, CA 93106-2050.

Please print this consent form if you would like to retain a copy for your records.

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY: I have read and understand the above consent form. Participation in this study is voluntary. By clicking "I agree" below and completing the survey, I provide my consent to voluntarily take part as a research subject in this study described above.

○ I agree to participate in this study

○ I do not agree to participate in this study

Appendix L
Central California Elementary School Questionnaire Consent Form

Parent Engagement Questionnaire Consent Form

PURPOSE:
You are being asked to participate in a research study. The purpose of the study is to create and test a culturally sensitive and more thorough school parent engagement questionnaire for elementary aged children. The goals of the study are to see how well this questionnaire works to help measure parent engagement in children's learning. This will be done by looking at parent responses to the questions on the questionnaire and seeing if it works equally well for people of different races. In addition, we are interested in understanding how different types of parent engagement shape children's academic achievement and relate to other areas of child development.

PROCEDURES:
If you decide to participate, you would be giving your school permission to share information about your child's academic achievement (e.g., reading and math scores) and other related academic data (e.g., language proficiency and language status). Your participation includes taking time to complete the parent engagement questionnaire and a parent/child demographic questionnaire. The parent engagement questionnaire will take approximately 10 minutes to complete and the demographic questionnaire will take 2-3 minutes to complete. While completing the questionnaire, you can skip any question that you do not want to answer. Your school will be using the parent engagement questionnaire data as a part of its school practices that will help improve and evaluate its programs or practices. By consenting to participate as a research participant in this study, you will be giving permission to the researcher to use the parent engagement questionnaire data for the research study.

RISKS: There are no significant risks anticipated with participation in the project.

BENEFITS: The results of this study will be used to develop and improve parent engagement questionnaires to be comprehensive and broaden definitions of parent engagement to make it more inclusive for diverse families. The creation of this parent engagement questionnaire can help to understand the many different ways parents participate in their child's learning and development both at home and school. It can be used to identify levels of parent engagement in different areas to help shape school practices and parent engagement efforts or understand the impact of school programs and services on parent engagement.

CONFIDENTIALITY:
Although the data collected by or through the school will include identifiable information about you or your child, all of the data will be stripped of identifying information prior to being shared with UCSB researchers. In addition, all of the research conducted will be looking at group differences and not the differences of individual children or parents. All of the data that is shared will be stored on password protected computers in a locked research office on UCSB's campus. In addition, data will be stored online using UCSB's Qualtrics software. Qualtrics data and its corresponding Qualtrics account is password protected and will only be accessed by the researcher. Qualtrics data will also be encrypted to be

anonymous and remove IP addresses as well as other online identifiers. Unidentifiable data shared with the researcher will also be shared with the researcher's larger UCSB research team that is evaluating programs and practices at your school to be used in future research studies.

RIGHT TO REFUSE OR WITHDRAW:
Your child may refuse to participate and still receive any benefits your child would receive if he/she were not in the study. Participation in the research study will have no impact on your own nor your child's standing within the school. You may change your mind about being in the study and remove your child after the study has started.

QUESTIONS: If you have any questions about this research project or if you think you may have been injured as a result of your participation, please contact: Jennifer Scheller, jscheller@education.ucsb.edu, 650-678-8194. If you have any questions regarding your rights and participation as a research subject, please contact the Human Subjects Committee at (805) 893 -3807 or hsc@research.ucsb.edu. Or write to the University of California, Human Subjects Committee, Office of Research, Santa Barbara, CA 93106-2050.

Please print this consent form if you would like to retain a copy for your records.

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY:
I have read and understand the above consent form. Participation in this study is voluntary. By clicking "I agree" below and completing the survey, I provide my consent to voluntarily take part as a research subject in this study described above.

○ I agree to participate in this study

○ I do not agree to participate in this study

Appendix M
Prolific Parent Questionnaire Consent Form

Parent Engagement Questionnaire Consent Form

PURPOSE: You are being asked to participate in a research study. The purpose of the study is to create and test a culturally sensitive and more thorough school parent engagement questionnaire for elementary aged children. The goals of the study are to see how well this questionnaire works to help measure parent engagement in children's learning. This will be done by looking at parent responses to the questions on the questionnaire and seeing if it works equally well for people of different races.

PROCEDURES: If you decide to participate, you will be giving permission to the researcher to use the parent engagement questionnaire data for the research study. Your participation includes taking time to complete the parent engagement questionnaire and a parent/child demographic questionnaire. The parent engagement questionnaire will take approximately 10 minutes to complete and the demographic survey will take 2-3 minutes to complete.

RISKS: There are no significant risks anticipated with participation in the project.

BENEFITS: The results of this study will be used to develop and improve parent engagement questionnaires to be comprehensive and broaden definitions of parent engagement to make it more inclusive for diverse families. The creation of this parent engagement questionnaire can help to understand the many different ways parents participate in their child's learning and development both at home and school. It can be used to identify levels of parent engagement in different areas to help shape school practices and parent engagement efforts or understand the impact of school programs and services on parent engagement.

CONFIDENTIALITY: The data collected by the investigator will not include any identifiable information about you or your child. In addition, all of the research conducted will be looking at group differences and not the differences of individual children or parents. All of the data that is shared will be stored on password protected computers in a locked research office. In addition, data will be stored online using UCSB's Qualtrics software. Qualtrics data and its corresponding Qualtrics account is password protected and will only be accessed by the researcher. Qualtrics data will also be encrypted to be anonymous and remove IP addresses as well as other online identifiers. Data shared with the researcher will not be shared with any other researchers to be used in future research studies.

RIGHT TO REFUSE OR WITHDRAW: Your participation in this research study is voluntary and you are free to withdraw or discontinue participation at any time when completing the survey.

QUESTIONS: If you have any questions about this research project please contact: Jennifer Scheller, jscheller@education.ucsb.edu. If you have any questions regarding your rights and participation as a research subject, please contact the Human Subjects Committee at (805) 893 -3807 or hsc@research.ucsb.edu. Or write to the University of California, Human

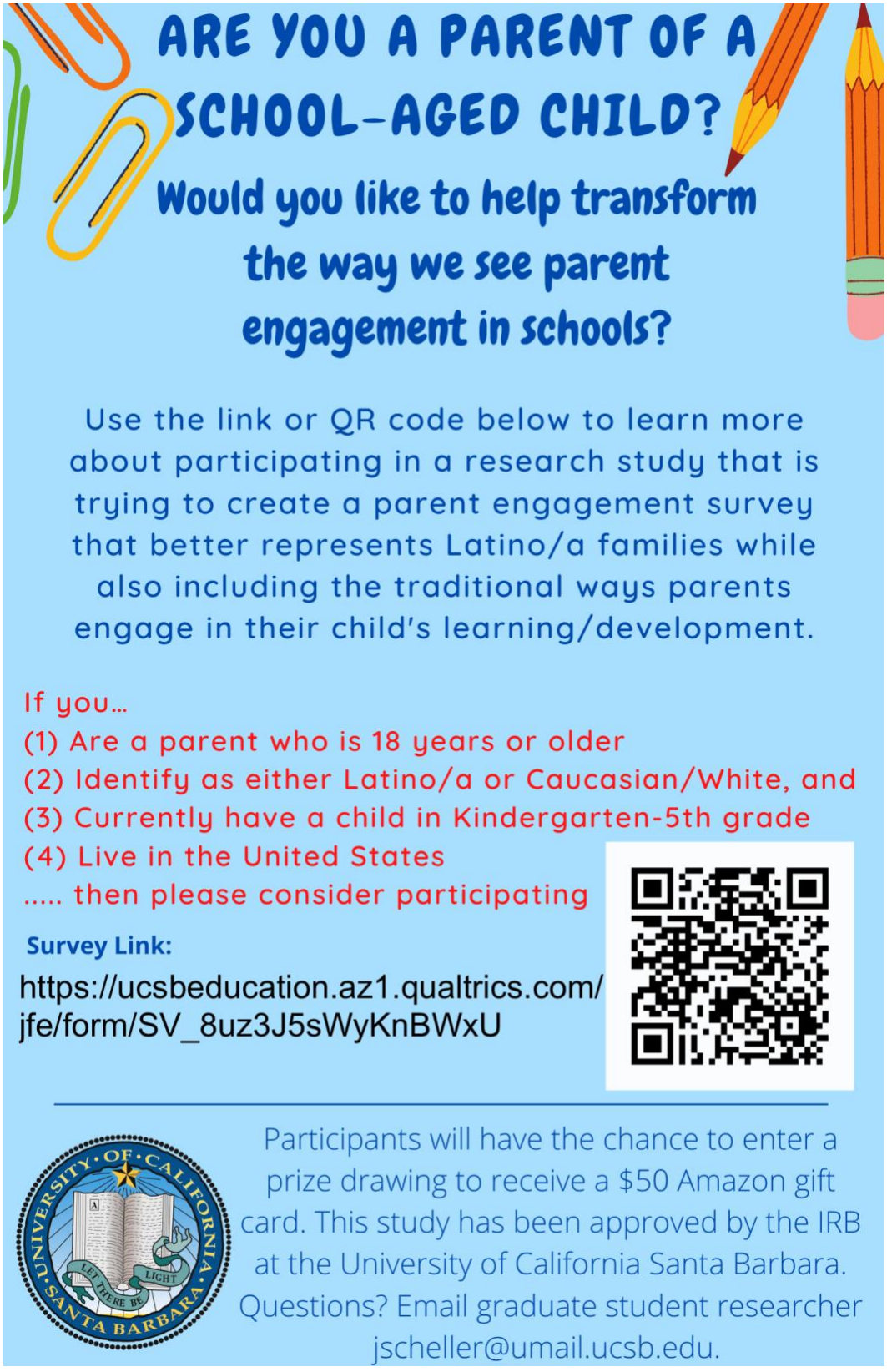
Subjects Committee, Office of Research, Santa Barbara, CA 93106-2050.

Please print this consent form if you would like to retain a copy for your records.

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY: I have read and understand the above consent form. Participation in this study is voluntary. By clicking "I agree" below and completing the survey, I provide my consent to voluntarily take part as a research subject in this study described above.

- ○ I agree to participate in this study
- ○ I do not agree to participate in this study

Appendix N
Parent Volunteer Recruitment Materials



Appendix O
Bivariate Correlations for all 41 CSPEQ Items by PE Domain

Bien Educado Bivariate Correlations for all 41 CSPEQ items

Variables	BE8	BE31	BE32	BE33	BE34	BE35	BE36	BE37	BE38	BE39
BE8 Take Care Things	-									
BE31 Behave Consequence	.25*	-								
BE32 Excuse Focus School	.05	.02	-							
BE33 Sacrifices Focus Student	.15*	.22*	.48*	-						
BE34 Teach Skills Learned	.26*	.37*	.11*	.23*	-					
BE35 Help Rules Follow	.27*	.48*	.09	.24*	.33*	-				
BE36 Country Food Tradition	.21*	.22*	.12*	.11*	.27*	.29*	-			
BE37 Behave Situations Places	.23*	.51*	.06	.23*	.39*	.49*	.35*	-		
BE38 Family Members History	.23*	.24*	.11*	.12*	.32*	.32*	.53*	.43*	-	
BE39 Teach Ask Help	.22*	.43*	-.01	.13*	.31*	.45*	.24*	.46*	.38**	-
BE40 Family Activities	.16*	.24*	-.04	.05	.28*	.27*	.20*	.36*	.40*	.35*

Note. *Correlations significant at p<.01 (2-tailed).

Home Learning Environment Bivariate Correlations for all 41 CSPEQ items

Variables	HE3	HE4	HE5	HE9	HE10	HE11	HE16	HE17
HE3 Tell Stories Read	-							
HE4 Activities House	.37*	-						
HE5 Listen Child Read	.53*	.43*	-					
HE9 After School Activities	.03	.03	.06	-				
HE10 Place Time HW	.03	.08	.21**	.01	-			
HE11 Support HW	.25*	.12*	.36**	.01	.50*	-		
HE16 Learn Everday Places	.29*	.24*	.27*	.04	.04	.15*	-	
HE17 Bring Ed Toys	.32*	.31*	.38*	.08	.02	.12*	.44*	-

Note. *Correlations significant at p<.01 (2-tailed).

Parent-Child Communication Bivariate Correlations for all 41 CSPEQ items

Variables	PCC1	PCC2	PCC6	PCC7	PCC13	PCC14	PCC15	PCC28
PCC1 Talk Learn Does School	-							
PCC2 Ask Questions Learn	.56*	-						
PCC6 Talk Hard Tries School	.32*	.29*	-					
PCC7 Talk Gets Along Others	.41*	.33*	.48*	-				
PCC13 Tell Stories Motivate	.24*	.20*	.34*	.28*	-			
PCC14 Tell Stories School	.27*	.26*	.33*	.30*	.59*	-		
PCC15 Talk Learning Love	.28*	.29*	.43*	.32*	.50*	.60*	-	
PCC28 Talk Child Future	.16*	.10*	.35*	.26*	.36*	.30*	.28*	-

Note. *Correlations significant at p<.01 (2-tailed)

School Engagement Bivariate Correlations for all 41 CSPEQ items

Variables	SB12	SB26	SB27	SB29	SB30
SB12 Volunteer School	-				
SB26 Track Performance	.04	-			
SB27 Go School Events	.28*	.26*	-		
SB29 Help Child Needs	.26*	.30*	.30*	-	
SB30 Talk Other Parents	.37*	.15*	.40*	.42*	-

Note. *Correlations significant at p<.01 (2-tailed).

Parent-School Communication Bivariate Correlations for all 41 CSPEQ items

Variables	PSC18	PSC19	PSC20	PSC21	PSC22	PSC23	PSC24	PSC25	PSC41
PSC18 Talk Resources Info	-								
PSC19 Talk Work Together	.74*	-							
PSC20 Share Do At Home	.64*	.73*	-						
PSC21 Read Watch Info	.18*	.23*	.19*	-					
PSC22 Share Child Knowledge	.62*	.74*	.71*	.19*	-				
PSC23 Personal Convos	.51*	.53*	.54*	.14*	.59*	-			
PSC24 Talk Child Learning	.69*	.78*	.66*	.19*	.77*	.59*	-		
PSC25 Talk Child Get Along	.61*	.66*	.62*	.13*	.65*	.54*	.79*	-	
PSC41 Talk Child Behaves	.53*	.56*	.54*	.15*	.58*	.46*	.61*	.59*	-

Note. *Correlations significant at p<.01 (2-tailed).