

Board 280: Family Partnerships in Search for Equity and Excellence in Education: Building a Sense of Belonging with Ownership and Pride Among First-Generation College Students at a Hispanic-Serving Institution

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Juan Salinas Jr. grew up in the border town of Nuevo Progreso, Tamaulipas, Mexico. At age ten, he immigrated to the U.S. where he began his education in a new world where he had to endure the social, cultural, and linguistic inequities found in educational institutions. The love and guidance his parents provided him with helped him shape his identity and commitment to family values and unity. Dr. Salinas is currently an educational leader and community organizer. He and his wife, Griselda, co-founded AVE Frontera, a community-based organization, in an effort to bring families and community resources together to create equitable, educational opportunities that instill pride in students and their families as they become culturally aware of their historical background.

Dr. Salinas holds a Doctoral Degree in Educational Leadership, a Masters Degree in Mathematics, and a Bachelor's Degree in Electrical Engineering, which he received from the University of Texas Rio Grande Valley formerly known as UTPA. His doctoral studies and engagement with community-based organizations allowed him to find the sense of belonging that he always looked for in the Rio Grande Valley. His collaborations with community leaders in education, engineering, and governmental agencies was recognized by grant awards from Anne K. C. Foundation, the U.S. Department of Education, and the National Science Foundation. Dr. Salinas and his family continue to volunteer their time to hold pláticas (authentic dialogue) with other families from different communities to design, organize, and create educational opportunities for children, parents, and grandparents.

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Abstract

In their quest to further their understanding of the power of *plática* (authentic dialogue) in community engagement efforts, the researchers/practitioners embedded themselves in deep, critical conversations with family leaders from a community-based organization on issues of equity and excellence in education. The Family-Centered transformational theory was developed and shaped by fully engaging in fostering trusting relationships and partnerships with students, their families, and educators over seven years. Family Organizing, Strategic Training, Education and Research is the set of processes and methods that gave form to the Family-Centered Theory of Change. This theory of change was incorporated in the professional development of thirty-two STEM faculty, revised curricula in twenty-two different STEM courses, transformed teaching practices in fifty-two STEM course sections and impacted over 2,000 students and their families. The purpose of this study is to advance the body of knowledge on the operationalization of servingness and to provide insight on the utilization of metrics to assess the impact of equitable, community engagement efforts of servingness at Hispanic-Serving Institutions.

Well researched metrics on the sense of belonging and institutional integration were used to assess the effectiveness of the interventions and helped the researchers focus their intended, holistic outcomes on student success to go beyond achievement and persistence. Two-way ANOVA on baseline data (N=779) showed that female undergraduate students have a statistically significant ($\alpha=0.05$) higher sense of belonging than males throughout their first three years of college. This is consistent with institutional data that show higher retention and graduation rates for female undergraduate students than males, especially in STEM. Research activities have demonstrated that the intervention/enrichment has improved students' motivation, engagement, passing rates, and performance. Theme analysis on (N=151) open-ended surveys collected during an end-of-semester symposium revealed that participants (students, families, and faculty) felt a strong “sense of belonging with ownership and pride.” This “unintended” outcome is of particular interest to the researchers in this study. It not only demonstrates the fulfillment of the intended positive impact of an improved sense of belonging among the participants, but it also suggests equitable outcomes. These results show the effective implementation of the family-centered theory of change in the transformation of teaching practices in STEM courses.

In this study, the researchers/practitioners took a critical ethnographic approach to assess the impact of their community engagement efforts in their search of equity and excellence in education. Garcia, Nuñez, and Sansone's (2019) also recommended ethnographic research to understand structures of servingness. The researchers utilized metrics on the sense of belonging and community engagement advanced by Mitchneck (2022) in the operationalization of Garcia, Nuñez, and Sansone's (2019) multidimensional conceptual framework of servingness. Through critical reflection and reflexivity, the researchers used these metrics to assess the impact of the internal processes and methods of the family-centered theory of change and the navigation of institutional, pragmatic mechanisms that led to equitable outcomes among participants.

Introduction

In this study, we (authors/practitioners) engaged in deep critical reflection through an ethnographic approach “to provide the reader with an adequate contextualization of the cultural phenomena under study,” acknowledging the vital role that our home culture and language have on educational reform [1]. We begin this paper by contextualizing our developmental process of building a strong sense of belonging [2] to our place in the Rio Grande Valley and by analyzing and reflecting on our personal stories, which we captured using oral history methodologies and approaches.

Steve, as many of his long-time friends called him, immigrated from Tamaulipas, Mexico, to Weslaco, Texas, in the 1950s when he was only eight years old. Steve shared with us that during the mid-1900s, Weslaco and neighboring cities in the Rio Grande Valley were divided. Steve described that “people's lives were divided into two parts by the railroad; to the north of the railroad lived the Mexicans and Mexican Americans, and to the south were the Anglos.” The educational system was not appropriate at the time for Mexican and Mexican American students because it did not allow both languages, Spanish and English, to flow. Steve’s father passed away when he was only six years old while still living in Mexico. His mother took on the role of both father and mother and reared Steve and his brother with strong work ethic, family values, and sense of self-identity. With the support and commitment of his mother, Steve graduated from high school as a salutatorian, the University of Texas A&M College Station with a Bachelor of Science in chemical engineering, Harvard University with a master’s in psychology, and the University of Texas-Pan American with a second master’s in mathematics education.

Steve devoted a major part of his life, over fifty years, to serving the community by mentoring and tutoring students from all levels and disciplines. He also provided them with access to educational opportunities and resources for their personal needs. Juan (corresponding author) is one of those students. His educational journey in the U.S. began when he arrived at the Rio Grande Valley at the age of ten. He lived among different relatives and family friends in the border town of Progreso, Texas, while his parents remained in Mexico. His parents immigrated to the U.S. two years later to better support and provide for him and siblings. Juan met Steve in the ninth grade of high school and found unconditional support. Steve mentored Juan in mathematics and education and was always there for him, especially when Juan needed him the most during difficult times. Steve gave Juan over thirty years of friendship until his passing in September 2022. He became a life-long example for Juan, demonstrating how to help the community by his actions towards others, especially students. Juan continues Steve’s legacy by leading a community-based organization where he is able to serve many students providing them with academic support, mentorship, and nurturing cultural experiences. The goal is to help students become professionals who seek to help others following Steve’s legacy. To us (the authors), Juan has been instrumental, serving as a guide and a leader in our educational and professional journeys.

Shelly immigrated from Mexico to Donna, Texas with her family when she was seven years old during the mid-1980s. She sought migration to northern states in the U.S. to work in agriculture like many other families. Juan shared with us that the first thing he noticed was that all his relatives and family friends who lived in his neighborhood were farm workers who also had

immigrated from Mexico and were migrant farm workers. During Shelly's middle school years, she believed her future would consist of working in the agriculture fields just like her family and friends did. Each year, she had to leave school a month early as her responsibility was to go with her family to work in the fields during her summer vacation. She and her family would drive for several days to get to agricultural labor camps. They would spend long hours driving and rest for only one day until arriving at their destination in states like Michigan and Florida. Upon arriving in the northern states and the east coast of the United States, she would enroll in school to continue her education. Shelly shares that "the school system there was different from the one in the valley [Rio Grande Valley]," she felt assured and more secure to study there. Shelly and Juan met each other at sixteen and eighteen, respectively. After meeting Juan, Shelly was motivated to follow Juan's path; to attend college and seek a professional career. Thus, getting married to Juan, allowed Shelly to be the first in her family to attend college. During her educational and professional career, she had the support and mentorship of Juan and Steve. This continuous support and her twenty-year teaching experience led her to form a family support group to help close the gap between families and school. The support group's goal was to influence families to become more involved in their children's education.

We, and many others who knew Steve's work, feel fortunate to continue Steve's legacy in helping families who want excellence and equity in their children's education. We understand that inequities still exist in our educational systems that keep Latino students from reaching their fullest potential [3]. In 2016, along with the family leaders who believed and hoped for this ideology, Shelly and Juan founded AVE Frontera, a nonprofit organization committed to integrate families and education. Today, in 2024, we can see the impact through the actions of those family leaders who knew Steve's work. We continue the legacy he left in our hearts by following his example of helping other families in our communities get a quality education for their children.

We share these stories to ground this paper on the work that AVE Frontera family leaders (children, youth, and adults) have done in search of equity and excellence in education. We use critical ethnography to elevate the voices of each of those family leaders as intellectuals in academia and change agents of their community [4], the Rio Grande Valley. The work was guided by a Family-Centered Theory of Change [5] and has improved students' motivation, engagement, passing rates, and performance. Salinas et al. [5] conducted theme analysis on (N=151) open-ended surveys collected during an end-of-semester symposium that revealed participants (students, families, and faculty) feeling a strong "sense of belonging with ownership and pride." This "unintended" outcome is of particular interest to us. It not only demonstrates the fulfillment of the intended positive impact of an improved sense of belonging among the participants, but it also suggests equitable outcomes. These results demonstrate the effective implementation of the family-centered theory of change in the transformation of teaching practices in STEM courses. We intend to further analyze these outcomes through critical reflections and reflexivity. This paper's structure is organized by the theory of change process emphasizing the transformational impact of family leaders and their contribution to improving student success at a Hispanic-Serving Institution in the Rio Grande Valley. We recognize our stories as true and generate new knowledge to shed light on building a sense of belonging with ownership and pride among first-generation college students.

The goal of this paper is to take a critical ethnographic approach to assess the impact of community engagement efforts in our search of equity and excellence in education. To do this, we used the following questions to guide the research:

1. How do AVE Frontera family leaders employ structures of servingness, put forth by Garcia, Nuñez, and Sansone [6] and Mitchneck [7], in their search of equity and excellence in education?
2. How do AVE Frontera family leaders operationalize their sense of belonging with ownership and pride?
3. How do AVE Frontera family leaders operationalize their community engagement efforts?
4. How do internal and external processes of the family-centered theory of change yield equitable outcomes?

Data and Methods

Mixed methods were used to collect quantitative and qualitative data [8]. Interconnections between quantitative and qualitative findings will be further analyzed through a critical ethnography process organized in three internal processes of the family-centered theory of change (1) family organizing, (2) strategic training, and (3) education and research as shown in Figure 1. Through these interconnections “the observed become part of the process of observing, the reality and story of people, cultures, and communities” [4].

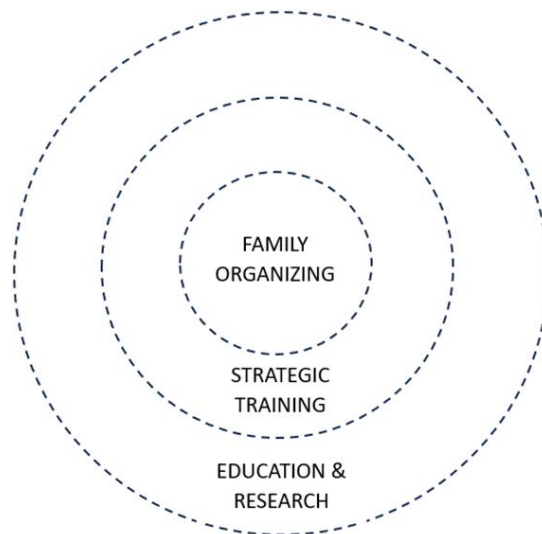


Fig. 1 Family-Centered Theory of Change Model

Well established metrics on sense of belonging [2], [9] were used in this research to quantitatively assess the effectiveness of the interventions. This helped the researchers focus on their intended, holistic goals over student success that go beyond achievement and persistence. This metric’s psychometric properties have been shown to have strong reliability and validity measures [2], [9]. An online pre-survey questionnaire in Qualtrics was used to collect sense of belonging data from 779 undergraduate students enrolled in STEM courses. Over 90% were Latinx students with the largest group (over 80%) comprising of Mexican American students.

Quantitative data analysis was conducted using SPSS version 28 software. The students' instructor distributed the pre-survey link via the class's online platform and students completed the survey within the first four weeks in the fall 2022 semester. There are three sets of null hypotheses for the given set of quantitative data for study:

H1₀: There is no significant difference between population means of years at institution.

H2₀: There is no significant difference between population means of gender.

H3₀: There is no interaction between gender and years at institution.

Exploratory and confirmatory analyses on post-survey data are currently being conducted.

To collect qualitative data, we conducted three focus group interviews with a total of ten Mexican American AVE Frontera family leaders. Two were youth leaders who immigrated from Mexico to the U.S. during their early high school years and three other youth leaders whose parents immigrated into the U.S. All youth leaders are first-generation college students and identify as Mexican American. We also conducted a focus group interview with five adult women leaders who immigrated from Mexico to the U.S. seeking educational opportunities for their children. Initially, we transcribed the video and audio recordings word-by-word and developed codes using small text excerpts and labeled them [10]. The transcriptions helped us generate over thirty codes that consisted of similar phrases said by the interviewees and which later we combined with new ones generated from other sources of data (e.g. poster presentations, video testimonies, observational notes, written responses to open ended surveys, and personal statements). We conducted a theme analysis by collecting similar codes into categories. Through critical reflections and reflexivity, we analyzed the grouped codes developing them into themes. We gathered multiple times to engage in pláticas (authentic dialogue) building from each other's ideas and perspectives, while reaching consensus and final agreements.

Findings and Results

We rejected H2₀: There is no significant difference between population means of gender supported by the two-way ANOVA results presented in Table 1. This sample consisted of undergraduate students enrolled in STEM courses, of which 45% were female, 55% were male, 32% were in their first year at the institution, 13% were in their second year, 25% were in their third, 15% were in their fourth, and 15% had attended the institution for five years or more.

Table 1. Two-Way ANOVA Summary Table.

SOURCE	SUM OF SQUARE	DF	MEAN SQUARES	F	SIG	H ₀
Years at Institution	1.802	4	.450	1.348	.390	Fail to reject H1 ₀
Gender	3.466	1	3.466	9.68*	.024	Reject H2 ₀
Years at Institution *Gender	1.337	4	.334	0.520	.721	Fail to reject H3 ₀

Significance codes: *p < .05; **p < .01

Preliminary results on two-way ANOVA on baseline data (N=779) showed that female undergraduate students have statistically significant, at 95% confidence, higher sense of belonging [2] than males across groups of students in their first, second, and third year of college

see Figure 2. This is consistent with institutional data that show higher retention and graduation rates for female undergraduate students than males, especially in STEM. A general downward trend on the level of sense of belonging was observed during the first four years for both, males and females. The last group in the analysis of variance were students that remained enrolled after their fourth year and is the first time that the trend moved upward for males, although not statistically significant at the $\alpha=0.05$ level.

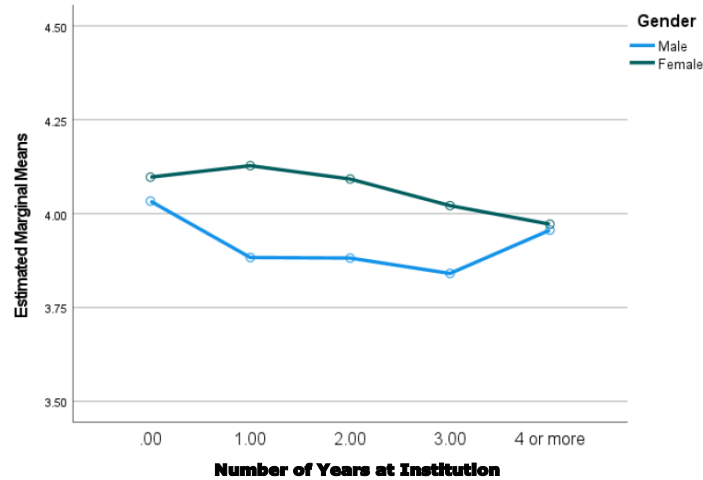


Fig. 2 Two-Way ANOVA: Marginal Means on Sense of Belonging

Family Organizing

The ideology “Family & Education, the Future of a Nation SM” and the Family-Centered Theory of Change model was developed over a period of over five years as described in Salinas et al. [5]. The AVE Frontera model was initiated by family leaders at the Weslaco center in 2017. This center is where the family leaders established a need for families to integrate themselves in their children’s education, especially in their post-secondary education. The founders’ own experience with their children led them to believe that the outcomes become stronger when the whole family was integrated. Although it is not required that the entire family gets involved, individual members can still become family leaders within the AVE Frontera family support system. The families and individuals can contribute significantly to the organization's mission, making each a family leader.

Mission Statement: Ave Frontera will serve as a vehicle of engagement that is family-centered that instills cultural pride and awareness amongst its members and fulfills their physical, emotional, social, spiritual, and intellectual needs.

This mission is being fulfilled through the power of pláticas [11] or weekly gatherings allowing family leaders to engage in conversations about their children’s education, educational opportunities, and by sharing personal experiences and traditions. In turn, family leaders can reflect in open dialogue building upon the conversation and most importantly learning through the experiences of others. The environment in which pláticas occur allows students to showcase their talents such as music, folklore, art, and other intellectual abilities. Families and their children can speak confidently about their experiences supporting one another with their

immediate needs in support of their well-being. The pláticas allow families to feel supported while discussing education, culture, and family values in their native language. This allows family leaders to build strong connections and pride between their cultural roots and education leading to equitable outcomes. One of the adult women interviewed shared in Spanish:

“Yo a mis hijos también les enseñado mucho lo de México, pero en la escuela no lo enseñaban [enseñado] y entonces no era lo mismo, no aprendían igual. Y allí [AVE Frontera] pos con el Folclórico y todas las cosas que celebramos Mexicanas pos ya aprenden más, Nuestros hijos de su cultura y especialmente verlos crecer en sus estudios académicos, verdad.”

(I also taught my children a lot about Mexico and the culture because they didn't teach it at school and it wasn't the same, they didn't learn the same. In AVE Frontera, there is Folkloric dancing and other traditional cultural events we celebrate as Mexicans. AVE Frontera not only allows our children to learn and recognize their cultural roots but also grow in an academic aspect.)

Becoming a Family Support System

Juan's community engagement experiences that helped him during his doctoral studies and research allowed him to reconnect with families in the community [9]. His upbringing and consejos (advice) by his parents and from Steve developed Juan into an educational leader that now engages at a deeper level with students and their families. When Juan and Shelly decided that they would commit and engage deeply in search of equity and excellence in education, they sought the support from the family leaders to take on this endeavor. Those family leaders then became the creators of the theoretical and axiomatic foundations of the Family-Centered Theory of Change model and gave rise to a deeper level of family engagement towards a new modality of community-engaged scholarship [5], [9].

Through weekly gatherings, family leaders engage in authentic dialogue guided by the AVE Frontera mission and in search of achieving the organization's vision by acting in the present and thinking about the future. The family leaders built confianza (trust) among themselves and thus the Weslaco center became a family friendly and familiar space, where they could talk with confidence. They are often curious to learn about educational opportunities and how to support their children and other students in education. In this environment, parents can see their children socialize with other children in a way that they had not seen before. The center provides a space and resources so that youth leaders can expose and nourish their talents in music, folklore, art, and intellectual abilities. It is a place where adults can share and learn from each other's traditions, memories, experiences, and beliefs. Children, youth, and adults support each other academically, emotionally, spiritually, intellectually, and culturally.

Family leaders noticed that these meetings were different than the parent meetings that occurred at their children's schools. They described those parent meetings as meetings that tended to be formal, presentation style, and in English (not in a language they could understand). Whenever translations were available, they tended to be fast-paced, the information was presented in a hurry. Parents often felt a lack of appreciation for the families being present ready to learn. The

presenters conducted their meetings as business-only transactions with no interest in wanting to get to know the person. The “educators” were not hospitable, and meetings turned out to be a bad experience. Parents often left the meetings with the sensation of not wanting to attend other parent meetings. Another of the women interviewed said in Spanish:

“Se entregan a esas clases y uno ya no puede estar ahí. Cuando yo entre a AVE Frontera, es lo primero que me dijeron, no había razón por la que yo no pudiera estar en la vida de la educación de mis hijos. Al oír eso me dieron ánimos para yo seguirle en AVE Frontera. Estoy muy contenta y orgullosa porque voy a la Universidad y me siento bien, como todas las madres. Muchas madres que quisieran estar allí, y quisa no están allí porque no saben, verdad. Muchas veces nos dicen incorrectamente las cosas en la escuela, entonces para mí era como, ya perdí a mi hijo después de la high school [preparatoria] y es mentira; podemos seguir apoyándolos como dicen los jóvenes que ellos necesitan mucho apoyo.”

(Once our children reach the University level, we, as parents, often think we can no longer be there. When I entered AVE Frontera, it was the first thing they told me, there was no reason why I couldn't be in the life of my children's education. Hearing that gave me encouragement to continue in AVE Frontera. I am very happy and very proud because I am going to university, and I feel like all mothers. Many mothers who want to be there, and perhaps are not there because they do not know they can. Many times, we are told things incorrectly at school meetings, and from my experience, I thought I had lost my son after high school but it was a lie; we can continue supporting them and giving them that support they need as they continue to higher education.)

Strategic Training

AVE Frontera began as a club that Shelly voluntarily formed in her classroom in a local elementary school in Weslaco, Texas. She met with her fifth-grade students during lunch where they expressed the difficulties they were facing, transforming not only the educational system but establishing a new culture of caring in this group. Shelly invited families to support their children's needs through dedicated attention and time. When the club transitioned outside of academic premises and into Juan and Shelly's residence, families at AVE Frontera felt more comfortable expressing their personal and professional experiences. Families found a need to engage in their children's education and the education of others. Family leaders organized several community events and collaborated with educational and community leaders bringing about the necessary resources. The events were designed to share knowledge and experiences with other students and families while simultaneously involving and learning from them what they wanted to share.

Below is a list of examples of some of the community events:

- First Family Night (November 2019) was a collaboration with a mathematics education professor who brought college students (pre-service teachers) to present culturally relevant math activities to family leaders.

- STEAM Night (March 2020) was a collaboration with high school teachers and students who presented interactive math, science, engineering, and art activities.
- Spring Break Tutoring (March 2020) AVE Frontera family leaders and cofounders collaborated to provide tutoring services in math and reading to children.
- Support for families to use Zoom, Google Classroom (May 2020) Youth leaders provided technology support to families who had children in Elementary that needed their parents' assistance during the quarantine in the pandemic.
- English & Spanish Language Acquisition (Summer 2020), Family leaders collaborated with college students, faculty, staff, and administrators to develop a dual language curriculum for youth and adults. The resources available through this program included scholarships, technology tools, and training.
- Children's Day (May 2021) Family leaders collaborated with other families in a neighborhood to have fun playing with traditional Mexican toys (top, rope, yo-yo, bouncer, and a ball for each child).

To organize each of these events, several pláticas took place in which thorough discussions came about but the fact that each family leader knew each other and shared similar family values, conflicts did not have a negative effect. The collaboration that emerged in these events was strong and everybody helped in the ways they could. This sort of relationship is what made AVE Frontera seem like a big family. We know each other, we understand each other, and we are always there for one another.

Developing ownership among first-generation college students

A collaboration with the University of Texas Rio Grande Valley produced the FIESTA (Family Integrated Education: Serving & Transforming Academia) project, funded by the National Science Foundation. This allowed families not only to visit a university campus but to present their experiences in the classroom through the form of interactive pláticas. Their pláticas engaged professors, students, and family members to acknowledge their cultural roots and feel connected to one another through their experiences, family heritage, and language. Simultaneously while families were engaging at the university level, AVE Frontera also acknowledged the need for financial support for college students creating scholarship opportunities. A majority of educational opportunities were located in Edinburg, Texas, however family leaders wanted educational opportunities to occur through organization in their hometown, Weslaco, Texas.

Education and Research

The building of confidence among family leaders through pláticas in the organization, planning, and implementation of social, cultural, and educational events have led to a sense of family among members. This sense of family gave family leaders enthusiasm, new aspirations, and a clear look into the future of their children's education. During one of AVE Frontera's professional development, it provided training to sixty K-12 teachers on how to build a sense of belonging and community engagement among students, families, and teachers from diverse backgrounds. The evaluation and feedback received from participants expressed that the training they had received has never been seen in other training workshops. The teachers expressed

recommendations toward their school and school district to implement this new type of training they had just experienced [12]. The training was presented by family leaders where they shared their community engagement experiences, the impact and transformation within themselves and their families, and how their children benefited from these educational opportunities. The teachers expressed pride in the accomplishments of family leaders and their commitment to education. This way, family leaders began to acquire a new experience within educational settings, an opportunity many did not receive before. These new leadership experiences allowed family leaders and their children to feel confident in a now-familiar educational environment.

Language, Culture, and Education

Conectando Generaciones (connecting generations) is a family centered curriculum created in the fall of 2020 by AVE Frontera family leaders where families connected with parents and grandparents regarding a recipe passed on by generations. This curriculum centers the role of education on family by focusing on the place of family origin, telling their family's story, showcasing talents and skills of family ancestors, and bringing back special events and traditions they experienced in their childhood. In turn, students, families, and educators are given a platform in which they can interact with one another and share their ancestral and experiential knowledge. These family stories were validated and appreciated by the teachers as they connected their experiences to scientific knowledge and academic content in similar ways Moll, Amanti, Neff, and González [13] described funds of knowledge. After telling their stories, (a) a biology teacher expressed that crops grown by our ancestors were more compatible with our DNA, (b) an engineering teacher found that the ingenuity of family ancestors solved real-world problems which engineers still face today, and (c) language arts teachers discovered a multitude of Spanish words that are not common and felt the need to find innovative and creative ways to preserve them through education. This program allows a connection between family and education.

The evolution of AVE Frontera over the years revealed that sharing the ancestral knowledge of family leaders could be used to enrich curricula and teaching practices within the classroom. These contributions by family leaders complemented Shelly's urge to bring her students' parents into her classroom to share their talents and skills in front of their children and classmates. Shelly felt that the fifth-grade students she serves, most of whom are Mexican American and come from low-socio economic backgrounds, needed to see and learn the skills their parents used every day in their profession. This connection with real-world applications was something more relevant to many of her students, especially for bilingual students. These actions broke the traditional presentations by white collar, doctors, lawyers, and engineers during career days where students are exposed to role models who are unfamiliar and may not be present in their homes. This led Shelly, AVE Frontera's co-founder, to set a vision for the organization which continues to guide family leaders to a future of academic excellence for their children.

Vision Statement: Ave Frontera will develop into a national model for families to lead and advocate for the cultural and educational well-being of their community.

One of the youth leaders expressed:

“My main focus on this experience, is the importance of integrated culture with education, not necessarily just so the student success, better success rate, have higher grades, mainly focused on the unity between themselves and their environment. It happened to me, I wasn’t able express myself much in Spanish and it started to cause separation within other family, my grandparents, and I see it happen with other families today. Unfortunately, it is something that is progressive. That is something we need too. Ultimately, events like in AVE Frontera integrate our culture of being Mexican American in our education.”

The vision statement opened new horizons for AVE Frontera family leaders with a theory of change that allowed them to become change agents in education centered around family. Juan, as Ave Frontera’s co-founder and leader, began to build family centered partnerships with university students, faculty, and administrators. The continued support from academia and family leaders allowed Juan to sharpen the theoretical and conceptual frameworks toward a novel family-centered theory of change [5]. This led to a series of family partnerships with university and community leaders supported by upper-level administrators and funded by the National Science Foundation.

Conclusion

The purpose of this paper was to advance the body of knowledge on the operationalization of servingness [6], [7] and to provide insight on the utilization of metrics to assess the impact of equitable, community engagement efforts of servingness at Hispanic-Serving Institutions. All activities in this project took place at a Hispanic-Serving Institution where most (over 90%) of the students are Latinx, of which over 80% are Mexican nationals or Mexican American. Preliminary results revealed that significant differences with 95% confidence in sense of belonging between male and female students were detected using Salinas’ [9] revised metric for sense of belonging. The findings showed that, in general, females feel a greater sense of belonging than males. This led us to hypothesize that focusing on interventions that target student’s sense of belonging could help improve student success as recommended by previous research [2], [9]. The trajectory of AVE Frontera represented by the experiences and growth of its family leaders led us to believe that the reason they immigrated to the U.S. was to provide better opportunities to their children, particularly in education. Our critical ethnographic approach and the rich data collected through oral histories and interviews helped us describe in detail the operationalization of deeper community engagement efforts by AVE Frontera family leaders. Our theme analysis reaffirmed our understanding of how pragmatic and systemic processes and institutional navigation benefit from family centered practices [5].

Family leaders sharing their stories in undergraduate STEM courses changes the classroom environment. Students listening to their classmates’ stories and personal struggles made them feel they were not alone. This also allowed the instructors to know and better connect with their students, and the students get to know their professor. These types of interactions with family leaders break formalities and position the institution as a platform where the students’ language and family heritage are recognized. When family leaders present to college students in the classroom, they do it with an instilled pride in their family heritage. They transmit a sense of commitment and support to the students who then involve their parents in the family-centered

class project. In the second visit, students share their family stories and connect them to the topics they are studying in their STEM course. Family leaders provide their personal experiences from previous visits and help students find value in their project encouraging them to continue their work. The effectiveness of the family leaders' effort to motivate and engage students and their families can be seen clearly during the end of semester symposium. Most students bring their parents, grandparents, or extended family to the symposium and are often seen co-presenting with the students. Once again, students and their family members present their projects with pride and ownership because their experiences and knowledge are valued and recognized as true knowledge. This level of family engagement is possible because of family leaders' collaborations with faculty and the understanding they are there to support students, not to evaluate them.

The level of community engagement is much deeper. Its operationalization [7] can be derived from the internal processes of the family-centered theory of change: (1) family organizing, (2) strategic training, (3) education and research [5]. The family centeredness and engagement are what have contributed to the increase in the number of participants to the end of semester symposium. Starting in spring 2022, the number of participants increased from 150 in year one of the project to over 1000 in year two, and it is expected to be about 1300 in year three. The feedback from students, families, and faculty is consistent. In each symposium participants express that they want more family-centered courses so that more students and families get this opportunity. The direct impact is even more significant because scientific knowledge is passed down through several generations. Grandparents share what they learned from their parents with their children and grandchildren. At the symposium, this experiential and ancestral knowledge is then shared with other families from the community. Everyone is involved, students, families, faculty, staff, and administrators with AVE Frontera family leaders as facilitators integrated higher education. The transformational impact on family leaders will transcend to a generational social change. A change where family leaders take on a leadership role as part of the higher education community. Figure 3 shows the Family Integrated Education: Serving & Transforming Academia symposium that took place at the end of the fall 2023 semester where over 700 students, their families, and faculty participated.



Fig. 3 FIESTA End of Semester Symposium Fall 2023

Our focus is to bring AVE Frontera family leaders into the classroom to transform teaching practices, foment relationships between students and professors, and make content culturally relevant and family centered. This connection between STEM education and families' experiential and ancestral knowledge capitalizes on students' funds of knowledge [13]. Through this intervention/enrichment, professors can build stronger relationships with their students.

Students feel more comfortable asking each other where they are from, where their families are from, and create relationships with each other through common traditions and family values. Professors can transform the classroom environment from a professional academic tone to a more caring environment. The family-centered projects also allow the student to associate their course of study with their family heritage and find a deeper passion and commitment to their career pathways. The family-centered theory of change [5] considers how students', families', and faculty's language and family heritage intertwined may yield more equitable outcomes for students, especially Latinx and other underrepresented groups or communities in STEM disciplines.

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References

- [1] C. Delgado-Gaitan and H. Trueba, *Crossing cultural borders: Education for immigrant families in America*. The Falmer Press, 1991.
- [2] S. Hurtado and D. F. Carter, "Effects of college transition and perceptions of the campus racial climate and Latino college students' sense of belonging," *Sociology of Education*, vol. 70 issue 4, pp. 324-345, Oct. 1997.
- [3] D. Santiago, S. J. Andrade, and S. Brown, *Re-Release – Latino Student Success at HSIs: Findings from a Demonstration Project*. Washington, D.C.: Excelencia in Education, Jan. 2024.
- [4] M. Guajardo and F. J. Guajardo, Critical ethnography and community change. In Y. Zou and H. T. Trueba (Eds.), *Ethnography and schools: Qualitative approaches to the study of education*, pp. 281-304. Lanham, MD: Rowman & Littlefield Publishers, 2002.
- [5] J. Salinas, P. S. Grewal, J. J. Gutierrez, N. A. Pereyra, D. Ramirez, E. Salinas, G. Salinas, V. Santana, and C. Saygin, "Family-centered theory of change: A conceptual framework for improving teaching and learning in undergraduate STEM courses," *Metropolitan Universities Journal*, vol. 35 issue 1, Feb. 2024.
- [6] G. A. Garcia, A. M. Nuñez, and V. A. Sansone, "Toward a multidimensional conceptual framework for understanding 'servingness' in Hispanic-serving institutions: A synthesis of the research," *Review of Educational Research*, vol. 89 issue 5, pp. 745-784, July 2019.
- [7] B. Mitchneck (Ed.), *Operationalizing the Servingness Framework: Metrics for Institutional Transformation at Hispanic-Serving Institutions*. University of Arizona, 2022.
- [8] N. K. Denzin, and Y. S. Lincoln, *The SAGE handbook of qualitative research*. SAGE Publications, 2011.

- [9] J. Salinas, Jr., "Higher education social responsibility: An empirical analysis and assessment of a Hispanic-serving institution's commitment to community-engaged scholarship, student integration and sense of belonging," Ed.D. dissertation, Dept. Org. and School Leadership, UT Rio Grande Valley, Edinburg, TX, 2018.
- [10] J. W. Creswell, *Qualitative inquiry & research design: Choosing among five approaches*. Sage Publications, 2013.
- [11] J. Guajardo and M. Guajardo, "The power of plática," *Reflections: A Journal of Public Rhetoric, Civic Writing, and Service Learning*, vol. 13 issue 1, pp. 59-164, Fall 2013.
- [12] G. Salinas and J. Lopez, "A vehicle of engagement for quality education and student success: La frontera program for immigrant families and students," The University of Texas Rio Grande Valley. Retrieve from <https://www.utrgv.edu/sustainability/sustainability-research-fellowships/meet-the-fellows/index.htm>, Spring 2021.
- [13] L. C. Moll, C. Amanti, D. Neff, and N. González, "Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms," *Theory into Practice*, vol. 31 issue 2, pp. 132-140, Spring 1992.