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Original Paper

Involving Parents and Community Leaders to Promote College and Career Aspirations among Refugee Youth

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Abstract

Among challenges of refugee students attempting to pursue ambitions to attend a university and subsequently take up a professional career, are uncertainty about how to navigate from high school to college and unawareness of career fields. In this paper, we report on results of a project focused on promoting STEM aspirations and understanding college navigation among refugee families in the United States. Through partnerships between refugee community organizations and a university, families participated in workshops that included learning about a breadth of STEM careers and how to chart a successful course from secondary to postsecondary education.

Keywords

refugee education, STEM, STEM education, social capital, college social capital

1. Introduction

This study reports on the effects of a project that was a partnership among multiple grassroots ethnic community-based organizations (ECBOs) and a large public university. The design of the project focused on families with children in grades 7-12, who had been refugees and resettled in the Phoenix metropolitan area. The general goals of the project were to (a) help families develop comfort with and understanding of the processes of applying to and attending college, and (b) promote awareness and interest in a breadth of careers, particularly science, technology, engineering, and mathematics (STEM) careers.

The project emerged from conversations between the refugee community leaders and key university faculty members in which the community leaders expressed desires to improve familiarity with college-going practices among their refugee youth. During initial discussions, several school-based intervention approaches were considered. However, the community leaders expressed that any initiative

undertaken should include parents learning side-by-side with their children. In their estimation, a reason youth in their communities were not consistently pursuing and completing college was sometimes due to complacency with adequate-paying jobs that did not require college degrees, and sometimes due to lack of insider guidance about how to navigate the American university system. Though the parents were well-respected and known to want their children to attend college and have fulfilling future careers, community leaders contended that empowering parents to better enable them to support, if not even better "nag," their children about schoolwork and enacting college dreams was quite important. Importantly, the community leaders also stressed a desire to leverage the funds of knowledge of their particular communities to support their families and to further community identity as it relates to valuing and promoting education. With these imperatives in mind, guidelines for this partnership were (a) have parents and their children learning alongside each other, (b) facilitation led by community leaders in collaboration with university faculty and staff, and (c) emphasis on both college navigation and STEM career awareness.

The purpose of this paper is to describe the setting, outline major facets of the ECBO-university partnership and report on how project participation affected attitudes about college and STEM among both students and parents. Using a social cognitive career theory framework (Lent et al., 2002), we address the following research questions:

RQ1. To what extent does project participation affect students' (a) self-efficacy, (b) outcome expectations, (c) interest, (d), identity, (e) capital, and (f) aspirations, relevant to STEM?

RQ2. To what extent does project participation affect parents' familial (a) self-efficacy, (b) identity, (c) capital, and (d) aspirations, relevant to STEM?

RQ3. To what extent does project participation affect student and parents' college social capital?

2. Relevant Literature

2.1 Refugee Students and School

Although policies regulating the mobility of immigrants and particularly refugees have not been consistent over time, the United States nevertheless prides itself as being a nation of immigrants. Since 1975, the United States has admitted 3.5 million refugees (Refugee Processing Center, 2022). Refugees typically face arduous years-long challenges before finding permanent residence in a host country. The U.S. Department of State and collaborating non-profit resettlement agencies establish initial housing and provide necessities to newly arrived refugees. However, the need to quickly become self-sufficient often leads to families relying on older children because they are generally the first to acquire conversational abilities (de Abreu & O'Dell, 2017). Such role reversals can create identity confusion for children, who view themselves less as students at school and more as surrogate heads of households (Atwell et al., 2009). Additionally, refugees may be subject to discrimination and viewed as extreme outsiders at school, where they typically do not have the enclave social support found among minority groups with higher proportions (McBrien, 2005). Due to emerging language skills and different social

norms, K-12 school personnel have perceived refugee children as having learning disabilities even without diagnoses (Graham et al., 2016). These challenges contribute to refugee students dropping out of school at a rate three times that of White students and twice that of Latinx students (Krebs, 2013).

Pathways from high school to college may appear particularly formidable for refugee youth. College admissions forms can deter students of refugee backgrounds, especially when the standard admissions processes are designed with the assumption that applying students attended an American high school for four years (Higgins & Misawa, 2022; Loo, 2021). In addition to typical intimidating college admissions processes, refugee youth may confront other challenges such as language complexity and uncertainty about transfer of credit from other countries—these hurdles can consequently negatively affect feelings of belonging (Garcia et al., 2019).

Regarding STEM, students of refugee backgrounds have been overlooked, if not entirely disregarded. While much research and effort has been dedicated to identifying effective practices to support learning, and even STEM learning, for large minority groups in the U.S., such as African Americans and domestic Latinx students, similar bodies of tailored educational research and support does not exist for refugee populations. Among the few studies that have particularly focused on involving refugee students in STEM, Çakır et al. (2022) found that engaging refugee students in a series of design-challenge STEM activities positively corresponded to students' sense of belonging at their school and their attitudes toward their teacher. It has also been observed that grouping refugee students of the same culture who have similar "coming to America" stories can promote comfort with STEM, and even encourage useful and educative discourse about the subject (Ryu et al., 2019; Ryu & Daniel, 2020).

2.2 Influence of Parents and Community

Broadly, in the United States, as schools align STEM curriculum and pedagogy with standards of the National Council of Teachers of Mathematics (NCTM) and Next Generation Science Standards (NGSS), classroom practices tend to become more student-centered and often integrate engaging and stimulating hands-on activities (National Research Council, 2012). Clearly, integrating lessons that encourage critical thinking about science and math principles is a good idea. Yet, despite system-wide efforts to improve the quality of STEM learning, many capable high school students choose other career paths—this results in a "hidden supply" of qualified students (Blumenstyk, 2014). It is therefore posited that K-12 education often fails to engage students with the primary reason people actually participate in STEM learning, and that is because they see how successfully completing specific classes will help them gain entry into future professions they find interesting and relevant (Osborn et al., 2012). This confronts the common assumption that science and math can be presented in such an intrinsically interesting way that a person will feel compelled to pursue a STEM career. This is faulty thinking. STEM subjects by themselves are found to be fascinating by only a small percentage of students (Lyons, 2006). In reality, the main driver that motivates people to follow a career path is that they see the connection to their future selves doing important and relevant work and they have opportunity to

share that vision of self with others they respect (Adamuti-Trache & Andres, 2008). In other words, though a person may be very good at science and math and might even find it interesting, they do not necessarily see how it connects to their future (Osborn et al., 2012).

Families possess the greatest potential to impact these visions of "possible selves" and make career aspirations more thinkable (Archer et al., 2012). Beginning at early years of childhood, the involvement and influence of parents and other family members tremendously affects career aspirations. (Adya & Kaiser, 2005; Mau, 2003). Parents affect the career decisions of their children in ways such as acting as role models from a particular career field and impressing shared values regarding what constitutes a worthwhile avocation (Gianakos, 1999; Vautero et al., 2021). Family finances, personal awareness of college costs, and communication about ways to pay for college also affect college and career selection decisions (Shim et al., 2010).

In the 1970s, Krumboltz et al. (1976) developed the social learning theory of career selection that highlights the value of parental influence on a child's development. Specific to STEM, Harackiewics et al. (2012) and Rozek et al. (2017) discovered that delivering information about the value of STEM via parents has significant effects on children's learning choices and on their career pursuits. Similarly, Craig et al. (2018) highlighted the value of families on STEM interest through children and parents engaging in informal science activities and having ongoing conversations about STEM. That is why learning that involves families in the discussion of college and career pathways provides a promising opportunity to promote aspirations.

Widening the view from families, communities can be important collective influencers and change agents. However, the term "community" is often broadly applied. In some cases, it may refer to like-minded people or to people in a geographic area such as a neighborhood or a school's boundaries. Relevant to the work of our project, Brown's definition of community (2004) is applied as being people of the same racial, ethnic, or tribal identity, particularly when individuals are knitted together through an organized effort. Unfortunately, educational institutions often dismiss the networks and cultural knowledge of local communities, particularly communities of color (Yosso, 2005). Keeping this in mind, we acknowledge and value the role of community members as potential forces that can shape student aspirations and career pathways.

Due to the mix and variance of U.S. State Department policies, presence and capacity of resettlement agencies, local government advocacy, and acceptance among residents—regions, if not specific cities and town, have emerged as centers for refugee relocation in the United States. Additionally, secondary migration, i.e., refugees moving from the place where they were initially settled to another locale within the United States, also contributes to refugees from same nations settling in same U.S. areas (Weine, et al., 2011). These dynamics contribute, for example, to the Minneapolis metropolitan area being home to a high concentration of people of Somali descent. In the case of this study, we worked with the localized diasporas of Burundians, Congolese, and Syrians living in the Phoenix metropolitan area.

For all three of these communities, the project's faculty and staff collaborated directly with leaders of each particular ethnic community-based organization (ECBO). Often, ECBOs are established to support communities with refugee roots. Thus, ECBOs often emerge as grassroots organizations spurred by and led by former refugees (Gonzales Benson, 2020). Such ECBOs characteristically organize cultural/social events, provide or connect immigrants to English-language programs, and support immediate welfare needs of respective community members (Gonzales Benson, 2021). Less common is the activity of ECBOs facilitating "next phase" college pathway education; the phrase "next phase" is used here to refer to supports beyond immediate needs that arise during early days of resettlement. Examples of next phase support include helping immigrants develop their professional network and providing advice about home-buying goals.

3. Theoretical Framework

To guide thinking and to aid in examining effects of parents and their children learning together, social cognitive career theory (SCCT) was foundational to this study. An adapted model of SCCT is presented in Figure 1. SCCT indicates individuals are most likely to implement career choices (i.e., take action that leads to achieving aspirations) if they believe their choices will be met by minimal barriers and ample support (Lent et al., 1994; Lent, 2005). SCCT emphasizes the interplay among three interconnected variables affecting career goals and aspirations: *self-efficacy, outcome expectations,* and *interests* (Brown & Lent, 2006). *Self-efficacy* refers to believing you have the ability to take action and perform effectively. Self-efficacy depends on the behavior or the future-self considered. This is especially important when children consider careers (Bandura et al., 2001). Self-efficacy is affected by developing familiarity with a behavior and by social persuasion. *Outcome expectations* are beliefs about likely consequences of courses of actions (Patton et al., 2004). Therefore, an outcome expectation answers the internal question of "what will happen if I try this?"

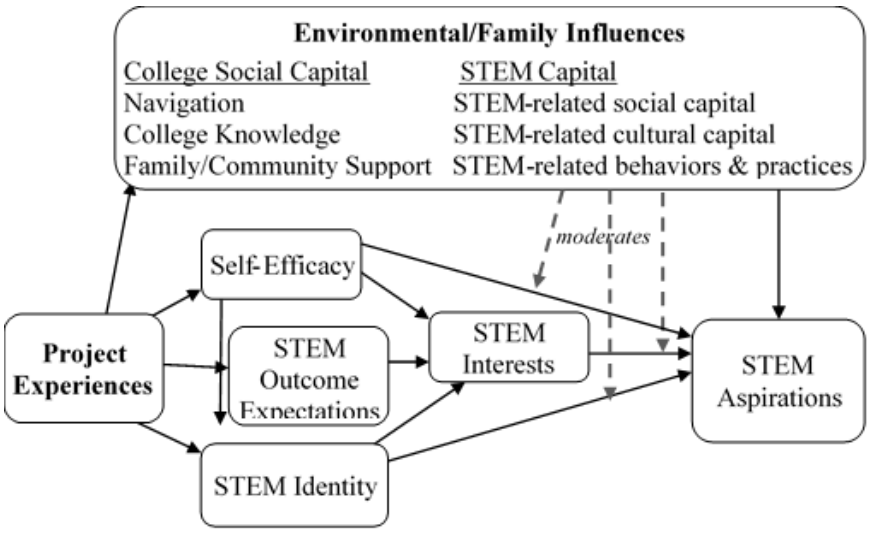

Figure 1. Conceptual Framework of STEM Aspirations, based on Lent et al. (1994)

Because our project included the goal of promoting interest in STEM careers, the original SCCT model was modified. First, *interests* were contextualized as *STEM interests* which derive from identity, self-efficacy, and outcome expectations. Simply, people tend to develop interest in careers they feel they will be successful at and from which they expect positive outcomes. As interest is fostered, people develop aligned career goals. To impact interest, especially among adolescents, it is important to provide exposure to experiences that affect self-efficacy and outcome expectations (Lent et al., 2005).

Three further modifications were made to the SCCT model. The first was the integration of *STEM identity*. The second and third adaptations defined the SCCT environmental influences: *STEM capital* and *college social capital*. Research suggests *STEM identity* and *STEM capital* strongly influence aspirations to pursue STEM learning and STEM careers; likewise, *social capital*, particularly as it relates to higher education (i.e., college social capital), is a predictor of engagement (Seibert et al., 2001).

Specifically, STEM identity encompasses the degree to which an individual embraces the notion of being a "STEM person" (Chang et al., 2011). Identity can be a more powerful predictor of STEM pursuits than even enjoyment, competence, or experience with STEM (Archer et al., 2010). McGee (2015) has explored this phenomenon in mathematics specifically, and found that Black college students with robust mathematics identities succeeded in this field, despite facing stereotypes and racial marginalization. STEM capital is rooted in Bourdieu's concept of cultural capital and *habitus* or ingrained habits we possess due to life experiences. These habits or "feel for the game" are often unconscious routines among people possessing strong STEM capital, but can be nonexistent for others.

Following Archer's model, STEM capital is composed of three components: *STEM-related cultural capital, STEM-related behaviors and practices,* and *STEM-related social capital* (Archer, et al., 2015). *STEM-related cultural capital* includes STEM literacy, habits of mind that STEM helps develop (e.g., reasoning), understanding the utility of STEM skills (e.g., that they are transferable to many disciplines), and includes attitudes about the relevance of STEM. *STEM-related behaviors and practices* refer to customs of engaging with STEM such as going online to look up information about a puzzling phenomenon or participating in informal learning opportunities (e.g., going to science museums). Of course, these opportunities frequently necessitate money, and therefore STEM capital is often moderated by financial resources. *STEM-related social capital* signifies a person's social contacts and networks within STEM, their ability to navigate STEM social institutions, and their family's capacity to help with that navigation.

Finally, within the framework, *college social capital* encompasses *college knowledge*, such as understanding the variety of careers and pathways available or knowing about costs and funding. It also entails possessing ability and tenacity to *navigate* college, and *family and community support* (Massey et al., 2011; Stanton-Salazar, 2011).

4. Program Description

In this project, three grassroots ECBOs representing the Burundian, Congolese, and Syrian communities in the Phoenix metropolitan area collaborated with faculty and staff from a large public university. The aim of this collaboratively developed project was to support local refugee families from the respective communities by providing next-phase supports focused on developing postsecondary plans and broadening understanding of STEM career paths. Guiding tenets from the onset of project planning were the need for university faculty and staff to respect and value backgrounds and assets of participating families and the imperative of parents and children learning together.

Before launching, community leaders and the university faculty and staff members convened for regular meetings to plan and refine the project over a period of approximately eight months. The project was piloted with the Burundian ECBO and their community during Fall 2021. In Fall 2022, the project expanded to additionally include families from the Congolese and Syrian communities. Prior to initiating project activities with each community, the university faculty and staff engaged with the community leaders to get their advice and suggestions regarding interacting with parents and youth of their communities. The Congolese leaders provided suggestions during Zoom meetings and at an informal face-to-face lunch. The president of the Syrian ECBO hosted a dinner party and dedicated time to informing the university faculty and staff about the situation and general history of the families he was recruiting for the project. The Burundian community leaders facilitated a cultural sensitivity training for the university personnel. The cultural sensitivity training included informing faculty and staff about cultural norms and recent history, such as Burundian students appearing shy when they simply are being respectful. Corresponding, the university faculty and staff discussed planned STEM activities with all ECBO leaders to ensure there were no cultural taboos related to ideas for various presentations and activities with the families.

To address objectives related to understanding transitioning from high school to college, such as identifying careers of interest and establishing short-term goals, the existing American Dream Academy program was adapted. Previously, American Dream Academy was offered by the university's outreach office to families through collaborations with high schools. In those prior iterations of American Dream Academy, families (i.e., at least one parent and one child) chose to participate in the program after school hours and the unifying connection among participating families was simply that their children attended the same high school.

Important adaptations were made to American Dream Academy curriculum and methods. First, ECBO leaders were trained to be the main facilitators. Although university experts did lead presentations related to financial aid and admissions, it was expressed to participants that these were *guest* presenters visiting the community leaders' classrooms. Additionally, curriculum was adapted to align with the community. Adaptations included simple changes such as changing the phrase "find someone who likes sushi" to "find someone who likes fufu" (a food found in African cuisine) for the African families completing an icebreaker activity. Other adaptations included ensuring a college-student panel activity

included current college students who were members of our ECBO communities, as well as integrating discussions related to brief "career talk" videos and longer role model videos featuring young STEM professionals who too were members of the communities.

To address goals related to STEM, faculty were enlisted to create STEM Career Activities. The activities included hands-on and career-talk components. There was a variety of hands-on components including engaging participants in brief lab activities and playing decision-making board games. The career-talk portions of the STEM Career Activities focused on practical matters such as relevant high school subjects, related careers, outlining college pathways (i.e., applicable associate, bachelor's, and master's degrees), and projected salaries for various STEM professions, including health field professions.

The ECBO leaders recruited the family participants and families were grouped into classrooms based on parents' first language. This meant that some Congolese families, whose first language was Kinyarwanda, participated in the Burundian classroom in which English instruction was translated to Kirundi (mutually intelligible with Kinyarwanda). Otherwise, the ECBO leaders provided as-needed translation in Swahili and Arabic to the Congolese and Syrian families, respectively. The families attended five Saturday workshops that combined the ADA curriculum and STEM Career Activities. At a typical workshop, families engaged with community leaders as they facilitated ADA curriculum in the morning, ate lunch in a campus dining facility alongside resident college students, and returned to their classroom to participate in a STEM Career Activity.

5. Methods

5.1 Participants

Parents and their children completed pre-surveys at the onset on the morning of the first day of the program. Participants completed post-surveys at the end of the last workshop day following conclusion of all American Dream Academy and STEM Career Activities. To maintain confidentiality and promote openness, participants were not required to write their names on the surveys. The project participants from the Burundian, Congolese, and Syrian communities completed the surveys. The Burundians piloted the project in the first year of the project and in the second year of the project, all three communities participated. For this study, data were aggregated from the first and second years of the project and the three communities. This resulted in data comprised of 49 parents and 110 students in grades 7-12 who completed pre and post surveys. These data were from refugee families living in the United States from less than one year to 19 years.

5.2 Survey Instruments and Data Analysis

Adhering to our conceptual model of STEM aspirations, the youth survey contains 25 five-point Likert-scale items to address the following constructs: *self-efficacy*, *STEM outcome expectations, STEM interests, STEM identity, college social capital, STEM capital,* and *aspirations*. Survey items prompted respondents to consider current and potential future situations. For instance, students were

asked to indicate from *strongly disagree* to *strongly agree* the extent to which they agreed with the statement "I know people who I can talk to who have jobs in STEM fields" (STEM capital) and "If I had a career in a STEM field, I would find the work enjoyable" (outcome expectation).

The parent survey contains 17 five-point Likert scale items that address parent confidence about their children's ability to succeed in higher education, as well as their familial STEM identity, college social capital, STEM capital, and aspirations for their children. The parent survey does not include items related to STEM outcome expectations or STEM interests because our research interest related to those constructs focused primarily on understanding dispositions of the students. While the youth survey prompted respondents to indicate beliefs as they considered personal dispositions, the parent survey prompted respondents to either answer in consideration of their children or on behalf of their family. For example, students were asked about the degree to which they considered themselves to be "science and math people" (STEM identity) while parents were prompted to indicate the extent to which members of their families consider themselves to be "science and math people."

To address the framework constructs, survey items were adopted from existing validated instruments. The major sources of items were the STEM Career Interest Survey (STEM-CIS) (Kier, et al. 2014) and the Student Science Capital Survey (Archer et al., 2015). The STEM-CIS is based on SCCT and assesses respondent aspects in areas of self-efficacy (e.g., *I am able to get a good grade in science*), outcome expectations (e.g., *If I do well in math, it will help me in my future career*), and interest (e.g., *I am interested in careers that use technology*). The Student Science Capital Survey provides items that address science identity and science capital which were adapted to more broadly address STEM. To address college social capital and STEM aspirations, items from the Career Maturity Inventory (Crites & Savickas, 1978) and the STEM Career Interest Questionnaire (Tyler-Wood et al., 2010) were utilized.

The parent survey was translated into Arabic, Swahili, and Kirundi languages. Once translated, the surveys were back-translated by a different individual to English to ensure the survey items maintained original meaning. Parents then had the option of completing the survey in English, Arabic, Swahili, or Kirundi. For a few parents with low literacy skills, the survey items were read to them by a community leader in their preferred language and the community leader assisted with transferring responses to the survey.

Although survey items were drawn from confirmed instruments, this process does not necessarily yield substantiated instruments. Face validity of the surveys was advanced by having STEM education experts as well as community leaders review the surveys for content and readability. Additionally, internal validity testing of the surveys indicated the youth survey to have a high internal reliability based on its Cronbach's coefficient ($\alpha = .932$) and the parent survey to have an acceptable internal reliability ($\alpha = .786$).

For analysis, data were grouped based on construct and aggregate mean construct scores were calculated (e.g., STEM identity). Shipro Wilk tests were applied to the pre and post data sets from both

parents and the students to assess normality and applicability of standard t-tests. As is often the case with Likert scale items, not all data were normally distributed. Therefore, the more conservative Mann Whitney U tests were applied to determine if there were statistically significant differences from pre to post.

6. Results

6.1 Students

Students experienced statistically significant positive changes ($p < .05$) in their dispositions related to *STEM outcome expectations*, *college social capital* and *STEM capital*. Generally, these positive self-reported changes reflected students' improved views regarding STEM careers and their ability to navigate a successful college journey. Table 1 summarizes changes across all of the constructs measured on the student survey.

The significant change in outcome expectations imply that students experienced overall improved beliefs about future images of their selves in STEM careers. Examples of survey items related to the outcome expectations construct include "If I had a career in a STEM field, I would find the work enjoyable," and "If I had a career in a STEM field, I would find the work fulfilling."

Table 1. Pre and Post Means, Student Survey

	Pre		Post		
	Mean	Std. Dev.	Mean	Std. Dev.	*p*
Self-efficacy	3.57	.65	3.61	.51	.654
STEM outcome expectations	3.84	.74	4.15	.61	.002*
STEM Career Interest	3.61	.75	3.76	.64	.209
STEM Identity	3.23	.82	3.34	.85	.346
College Social Capital	3.80	.56	4.16	.60	<.001*
STEM Capital	3.51	.63	4.06	.61	<.001*
STEM Aspirations	4.21	.68	4.33	.78	.238

*$p < .05$

Also in relation to STEM perspectives, students indicated their STEM capital had significantly increased by the end of the workshops. This conveys an increased "wealth" of assets such as knowing people one can talk to in STEM fields and having parents who stress the value of possessing STEM-related skills. As an example, the items related to STEM capital on the students' survey included the prompt to indicate the extent of agreement with the following statement: "I know people who I can talk to who have jobs in STEM fields."

The overall significantly improved college social capital among students indicates they believe that resources they possess related to college knowledge and their comfort with navigating the path to and through college increased significantly. The increased college social capital additionally suggests improved support and college-going expectations from family members. Examples of youth survey items within the college social capital construct include, "My family and I are comfortable talking about me going to college and the types of careers I might have in the future," and "I know how to figure out which college majors I am interested in."

Even though there were statistically significant changes among the three aforementioned constructs, these changes are balanced with the realization that the gains, while positive, were not enormous. Simultaneously, it is noted that there were positive gains across all constructs. Regarding those with significantly positive change, the effect sizes of *STEM outcome expectations*, *college social capital*, and *STEM capital* were calculated to be 0.21, 0.29, and 0.38, respectively. This implies participation in the program had small but statistically significant effects on the students in these areas.

6.2 Parents

Among the five constructs addressed by the parent survey, analysis revealed statistically significant change in the areas of *college social capital* and *STEM capital* ($p < .05$). Table 2 provides overall pre and post descriptive data. The significant changes among parents parallels results from the students. Like their children, the parents became more comfortable with their family's ability to support their children's college pathway, i.e., college social capital. College social capital survey items addressed ideas related to college knowledge (i.e., knowing about the variety of careers and applying for college) as well as the ability and tenacity to navigate college. Within this construct, the parent survey items included assessing one's ability to help their child select a future college major, indicating the extent to which they know people sharing their family's race and ethnicity who have earned a university degree, and indicating the extent to which they are familiar with the process of applying to universities in the United States. For example, parents indicated their level of agreement with the statement, "If my child asks, I am able to help them select their future college major." The change in college social capital was calculated to have an effect size of 0.43, which is considered a small to moderate effect of participating in the program.

On the parent survey, items constituting the STEM capital construct assessed parents' own interest in STEM, as well as their familiarity and connections to people in STEM careers. For example, a STEM capital item on the parent survey prompted respondents to consider the degree to which they agreed with the statement, "I stress to my children that knowing about science, math, and technology is useful for their future." Based on the effect size calculation, participation in the STEM capital program had a significant but small impact ($r = 0.38$).

Table 2. Pre and Post Means, Parent Survey

	Pre		Post		
	Mean	Std. Dev.	Mean	Std. Dev.	*p*
Self-efficacy	4.40	.72	4.50	.56	.671
STEM Identity	4.01	.72	4.31	.48	.171
College Social Capital	3.89	.85	4.38	.53	.002*
STEM Capital	4.16	.58	4.47	.47	.008*
STEM Aspirations	4.80	.41	4.84	.31	.880

*$p < .05$

7. Discussion

Analysis of data indicated there were some positive intended results correlated with participating in our project. For the youth, their perceptions about the value of having a future career in a STEM field improved while they simultaneously reported improved associations and comfort with talking about college and developing STEM connections. This result is parallel to the findings of previous studies (Knezek et al., 2013; Sahin et al., 2015; Vela et al., 2020) in which those researchers determined that student perceptions toward STEM careers improved after taking part in STEM-related activities or projects. Perhaps it is not too surprising that time spent focusing on STEM and college knowledge is associated with improved related sentiments. However, what is particularly encouraging is that these results were found among students with refugee backgrounds—children who in the United States are often on the fringes or even outside the boundaries of higher education.

College social capital and STEM capital encompass ideas about family expectations and support. Therefore, the increased capitals indicate improvement in student beliefs about their family's interest in STEM, comfort with talking about STEM careers, and college-going expectations. These improved dispositions are also hallmarks of improved personal competence in matters such as applying to college, selecting a career, and being able to reach out to people in college and/or STEM fields. It is reasonable to conjecture then that the students' STEM outcome expectations were improved as a result of these increased capitals or assets. Conversely, it is possible that improved perceptions about the enjoyableness and fulfillment of having a future STEM career (i.e., outcome expectations) mediated the students' STEM capital and college social capital. The finding that college social capital improved similarly among parents and their children suggests that the refugee families in this project viewed their college capital as a growing resource. In addition to the American Dream Academy curriculum which focused on promoting an understanding of navigating entry into college, the following aspects of this tailored program may have affected college social capital: (a) holding the workshops on a college campus, (b) families regularly meeting and engaging with university faculty and students, and (c) seeing the strong connections between their ECBO leaders and university staff and faculty.

Like their children, parents also reported their families possessing significantly improved STEM capital following completion of the workshops. Here too it is conjectured that the ongoing interaction with STEM faculty and STEM-focused college students fostered familiarity and personal connections. For refugee families who often lack connections, let alone acquaintances, in the fields of higher education and STEM disciplines, these types of connections are particularly valuable. Also observed and necessitating further study was the critical role of the community leaders—most of whom were themselves refugees when they arrived in the United States. It is perhaps discrediting to simply say that the community leaders acted as conduits between the refugee families and the university. In addition to planning and shaping the program, the ECBO community leaders served as teachers and facilitators, modeled interactions with university personnel, and informed the faculty and staff about how to make the program more successful. This type of culturally-responsive programming (Ladson-Billings, 1995) is considered a strength of this project. In spite of the fact that the leadership of each ECBO was unique, organizational leadership, administrative capacity, and zeal were all shared by these grassroots refugee organizations.

Beyond the specifics of the social cognitive career theory variables discussed, this study provides evidence of the value of a unique type of collaboration, i.e., direct alliance between universities and grassroots refugee organizations. Unlike larger non-governmental organizations (NGOs), ECBOs "are part of the private non-profit sector, but are largely neglected in analyses of refugee policy and service provision, and thus remain undertheorized" (Gonzales Benson, 2020, p. 2126). Therefore, in addition to revealing effects of the project, other scholarly significance of this study is the demonstration of a unique type of researcher-practitioner-partnership between ECBOs and universities. In this project, the funds of knowledge (González et al., 2006), funds of identity, and resources of each ECBO were indispensable. Further research and applied projects related to how best to scale to the ECBO-level are therefore recommended as a means to reach and support refugee communities.

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