Art Therapy and Syrian Refugee Children: Using a Design Thinking Framework to Develop Empathy

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Abstract

According to the United Nations High Commissioner for Refugees (UNHCR) the current number of people who have fled Syria due to political conflict has reached 4.5 million, and half of these refugees are children (UNHCR, 2016). Aid workers report that Syrian refugee children show signs of suffering from acute distress and depression (Grant & Harper, 2013). Art therapy has been shown to be beneficial in the recovery of refugees in past conflicts (Chapman, Morabito, Ladakakos, Schreier, & Knudson, 2001; Sarid & Huss, 2010), but its use among Syrian refugees is limited (UNHCR, 2014). This research project brought together a diverse group of stakeholders to participate in design thinking workshops aimed at finding solutions to benefit the lives of Syrian refugee children through the use of art therapy, while evaluating the effectiveness of the design thinking process. The ability of people who have no experiences as refugees to contribute ideas to address the problem was examined and their level of empathy in relation to refugee children before and after the workshops was measured. The study resulted in the development of a coloring book with pages drawn by children in the United States under the supervision of an art therapist, to be donated to aid organizations working with refugee children.

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Introduction

According to the United Nations High Commissioner for Refugees (UNHCR) the current number of people who have fled Syria due to political conflict has reached 4.5 million, and half of those refugees are children (UNHCR, 2016). With the US Department of State reporting that refugee camps can last as long as 17 years, a large number of Syrian children may spend their entire childhood without a permanent home (UNHCR, 2013). According to aid workers, these children show signs of suffering from acute distress and depression. Many have seen loved ones die and this trauma is a source of health and psychological problems (Grant & Harper, 2013). Fieldwork at the Islahyie refugee camp in Turkey revealed that 75% of children have experienced a death in the family, while 60% have witnessed an act of violence, and 30% are victims of violence themselves. The result of this trauma is that 45% of the children now suffer from posttraumatic stress and depression (Sirin & Rogers-Sirin, 2015). Such situations create an atmosphere perfect for the growth of cynicism and disenfranchisement, and children who receive no emotional support run the risk of becoming involved in radicalized terrorist groups who are specifically targeting them for recruitment, perpetuating war for another generation (Karam & Salama, 2014; Shammas, 2015).

The UNHCR and other relief organizations do their best to provide aid, but can do little more than meet basic needs. Art therapy, defined as a mental health process that uses creativity to explore feelings and emotional conflicts ("What is art therapy," 2013), has been used as a technique to help children deal with the difficulties of life in similar situations by giving them an outlet to work through trauma (Chapman, Morabito, Ladakakos, Schreier, & Knudson, 2001; Sarid & Huss, 2010). Examples of art created by

children specifically to deal with the struggles of war can be found dating back to World War II in the Terezin Concentration Camp, where a Bauhaus trained artist who was also imprisoned there led children through exercises to express their emotions in drawings, paintings, and poetry (Volovkova, 1993). Art therapy has been used more recently to help children successfully heal from trauma caused by conflicts in Bosnia, Kosovo, Afghanistan, and Sudan (Baker, 2008; Brunick, 1999; Cummings & Visser, 2009; Nabarro, 2005). This therapy may also be beneficial to children in refugee camps but the opportunities for them to access art supplies have been limited (Hubbard, 2014; UNHCR, 2013).

Purpose of the Study

The overarching mission of this research study was to develop solutions to benefit refugees by conducting a series of design thinking workshops to search for new and potentially innovative ideas to address the psychosocial needs of Syrian refugee children through the use of art therapy. The study sought to evaluate the design thinking process itself by asking whether the workshop participants, especially those who have never been refugees, could develop ideas that may benefit refugee children. Additionally, the study measured, through the use of pre- and post-workshop questionnaires, each participant's level of empathy for refugees to determine if the design thinking process is a valuable way to enhance feelings of caring for those in need.

People were invited to attend the workshop based on each one's unique experience and knowledge. Participants included a former refugee from the Congo who has relocated to the United States, volunteers who assist relocated refugees, people who have lived and worked in the Middle East, architects, interior designers, user experience

and graphic designers, educators, and a marriage and family therapist. These individuals worked together as interdisciplinary teams, brainstorming and generating ideas to ease the trauma of refugee children, with a special focus on the use of art therapy as an intervention. During the workshops, participants utilized design thinking strategies to brainstorm and evaluate ideas, created prototypes to develop those ideas, and considered avenues for implementation. After this process was complete, a further workshop was held with children between the ages of 8 and 12, along with their parents, to evaluate the ideas and brainstorm and prototype new ones before deciding on the solution they felt would be of greatest benefit to refugee children.

Research Questions

Two research questions were asked to determine the value of the design thinking process to address humanitarian issues. The first question, "How might people who are not refugees themselves use design thinking strategies to help refugee children?" sought to evaluate whether or not the participants who were not former refugees could contribute constructive solutions to the problem. A second question, "How does participating in a design thinking workshop build empathy for those in need?" looked at the effect of the workshops on the participants to measure whether or not their feelings of caring and sympathy for refugees increased (see Appendix A for an explanation of the development of the research questions).

Definition of Terms

A number of terms should be defined to properly understand the issue at hand. A refugee is anyone who crosses a border to escape persecution, but this definition is problematic because it does not include those who are internally displaced (Lewis, 2008).

People are designated as refugees when they are given legal status as such by a host country, but not all people who cross a border complete the paperwork necessary to gain status as a refugee and many more suffer under similar conditions before they are able to cross a border into another country (Sipus, 2009). Trauma is defined by the American Psychological Association as an emotional response to a terrible event and can result in a number of symptoms, including unprecedented emotions, flashbacks, strained relationships, and even physical symptoms such as headaches and nausea ("Recovering emotionally from a disaster," 2013). Furthermore, experiencing these events shatters a child's belief that the world is a safe place (Qouta, Punamaki, & Sarraj, 2008).

According to the American Art Therapy Association, art therapy is a mental health process that uses creativity to explore feelings and emotional conflicts, creates self-awareness, develops social skills, and reduces anxiety while increasing self-esteem. Artwork created through this process can take the form of drawing, painting, sculpture or other forms of art ("What is art therapy," 2013). The aim of art therapy and other therapeutic treatments is to provide psychosocial support for those who have experienced traumatic events. Psychosocial well-being relates to a person's mental health shaped by their social conditions ("Psychosocial," n.d.). Receiving psychosocial support for refugees involves helping people to heal from psychological wounds while rebuilding their social structures ("Psychosocial support," 2009).

Empathy is defined as the cognitive ability to observe and understand the emotions of another, combined with the affective ability to share those emotions, often resulting in sympathy or concern for the person being observed (Richter & Kunzmann, 2011; Sağkal, Türnüklü, & Totan, 2012). Design thinking is an experimental, human-

centered approach to problem solving which utilizes the design process to address complex issues. Through empathy, design thinking aims to gain insight from observation and translate it into useful products and services that will enhance and improve lives. The focus of design thinking provides this through the use of multi-disciplinary teams who work together to observe the needs of a client, brainstorm a variety of possible solutions, and build prototypes to test the feasibility of the ideas – all in an attempt to find innovative solutions to the world's most difficult problems (Brown, 2009).

Background and Review of Related Literature

An evaluation of the literature follows as an exploration of the use of design thinking and art therapy to address the needs of refugee children. The nature of the political unrest in Syria means that the numbers and statistics presented here are likely to change, but an effort has been made to keep the information current. Even if the war were to end today it would take a considerable amount of time for the rebuilding of Syria to begin and refugees would still face a long road on their journey home.

Background of the Syrian Conflict

The Arab Spring, a political movement that has swept the Middle East, began with violence in December 2010. Mohammed Bouazizi, a merchant in Tunisia whose fruit cart and produce had been confiscated for being unlicensed, set himself on fire in front of his provincial headquarters in an act of self-immolation to protest his treatment by government officials (Abouzeid, 2011). This singular act set off a series of protests and riots that resonated with the public. By February 2012 leadership in the countries of Tunisia, Egypt, Libya, and Yemen had toppled, major protests had happened in Bahrain, Morocco, and Jordan, and Syria had plunged into civil war (Manfreda, 2014).

The first protests in Syria linked with the Arab Spring began in March 2011 in the city of Deraa after a group of teenagers who had sprayed a school wall with graffiti which read, "The people want the fall of the regime," were arrested and tortured (Rodgers, Gritten, Offer, & Asare, 2016; Sinjab, 2011). These arrests resulted in demonstrations that demanded the boys' release, along with new political freedoms and an end to government corruption. When the crowds refused to disperse, security forces fired on the protestors, killing three people and injuring hundreds more ("Middle East unrest: Three

killed at protest in Syria," 2011). The protests quickly spread to Damascus and other cities throughout Syria, escalating in violence. Buildings were burned and police officers and protestors lost their lives in the clashes (Kahn, 2011). By April, protests in more than 20 cities demanded Syria's president Bashar al-Assad step down from power. Assad's response was to deploy the Syrian army, complete with tanks and artillery, against the civilians, leading to hundreds of deaths by the end of the spring ("Armed residents put up resistance to Syrian army," 2011).

Violence continued to escalate and a group of seven officers from the Syrian army defected to form the Free Syrian Army in July of 2011, vowing to fight against any government forces that fired on civilians ("Defecting troops form Free Syrian Army," 2011). The next month, the Syrian National Council was formed by expatriate Syrians living in Turkey to formally oppose the Assad regime ("Anti-Assad dissidents form Syrian National Council," 2011). The conflict was now a civil war. By April 2012, just a year after the first protests, 10,000 Syrians had been killed in fighting. The United Nations made its first attempt to broker a peace plan but it failed when the Assad regime refused to implement it ("Syria agrees to Kofi Annan's April 10 peace deadline," 2012).

The Syrian conflict continued to escalate. The condemnation of the international community intensified in August 2013, when rockets filled with the chemical nerve agent sarin were fired on civilians in Damascus, killing hundreds of civilians. Assad and the Syrian army were blamed for the attack, but they pointed to rebel groups as the perpetrators. Under threat of military action by the United States, Assad eventually agreed to destroy Syria's chemical weapons stockpile (Rodgers, Gritten, Offer, & Asare, 2016). The use of chemical weapons has continued, however, and the Organization for

the Prohibition of Chemical Weapons (OPCW) confirmed that chlorine was used as a chemical weapon against rebel-held areas in the spring and summer of 2014 ("OPCW Fact Finding Mission," 2014).

The fighting in Syria has led to an unprecedented humanitarian crisis (Walsh, 2014). As of February 2016, a total of 4,598,691 Syrians have registered with the UNHCR as refugees (2016). Another 6.5 million are internally displaced within Syria, with 4.5 million living in areas that humanitarian organizations have difficulty reaching, and 400,000 of these are classified as besieged ("United Nations statement to the press on Syria," 2015). The 2016 humanitarian response plan from the UNHCR estimates that \$3.2 billion will be needed in the coming year to provide aid to 13.5 million people, including 6 million children, who are still living within Syria's borders ("2016 Syrian Arab Republic Humanitarian Response Plan," 2015). Current estimates place the population of Syria at 16.6 million people, down from 22 million people before the war began ("Time to go," 2015). Of the 4.5 million people who have fled Syria and registered as refugees, only 10% of them are currently living in refugee camps in neighboring countries. Most refugees, approximately 80%, have found their own accommodations in the countries of Turkey, Lebanon, and Jordan. Another 10% have sought asylum status in the European countries of Serbia, Germany, Sweden, Hungary, and Austria, among others (UNHCR, 2016).

The Syrian civil war has changed significantly since it began in 2011. The secular moderates who initially opposed the Assad regime are now outnumbered by Islamists and jihadists who have usurped their cause. In June 2014 jihadists in Syria established a caliphate in the vacuum caused by the besieged Assad regime. This caliphate, called the

Islamic State of Syria and the Levant (ISIS or ISIL), formed by uniting smaller jihadist groups under one organization and purports to be an organized state that recognizes only Islamic law. ISIS treats anyone it identifies as infidels or apostates with a brutality that has shocked the international community ("What is Islamic State?," 2015). The emergence of ISIS has resulted in a deterioration of the conditions in Syria as its fighters engage against rebels, rival Islamist groups, forces still loyal to Assad, and the Kurdish ethnic minority. The United States and Russia have both conducted air campaigns to destroy ISIS but have made little progress, as the US avoids bombing targets that will benefit the Assad regime, and Russia has been accused of targeting western-backed rebel groups (Rodgers, Gritten, Offer, & Asare, 2016).

International involvement in the Syrian conflict has become a situation some are calling a proxy war as countries take sides that serve their own interests. Further complicating the situation is the regional conflict between Sunni and Shia, the two major denominations of Islam. Sunni Muslims are the majority in Syria and much of the Middle East, and rebel opposition groups are dominated by the Sunni, while the Shia-dominated country of Iran has spent billions of dollars to assist Assad. Russia has also come to the defense of Assad, engaging in air strikes against opposition groups, and Lebanon's Shia Islamist movement Hezbollah also supports Assad. Sunni rebel groups have gained support from most other countries in the Middle East, along with the United States, the United Kingdom, and France (Rodgers, Gritten, Offer, & Asare, 2016).

The international community has repeatedly tried to find a diplomatic solution to the Syrian conflict. In 2012 the Geneva Communiqué called for the formation of a transitional government with executive powers (United Nations, 2012). This proposal

ultimately failed and a second round of negotiations in 2014 also broke down due to the Syrian government's refusal to consider rebel demands. A series of ceasefires in isolated cities proposed by the United Nations was also rejected, but in December 2015 a siege in the suburbs of Homs was finally brought to an end through peace talks. In January 2016 negotiations resumed in Geneva, Switzerland, between the Syrian government and the rebel opposition at the urging of the United States and Russia to discuss a proposal for peace that would begin with a ceasefire and end with elections (Rodgers, Gritten, Offer, & Asare, 2016). As of February 2016, talks are focused on a ceasefire in Aleppo, a city where 250,000 people have been killed in fighting. Government forces are trying to recapture the city from rebels and Russia has proposed a truce that would begin in March 2016 (Nichols, Perry, & Pamuk, 2016). At the conclusion of the meetings, the unanimous agreement of the immediate delivery of humanitarian supplies to the besieged residents of Aleppo was announced, along with the implementation of a nationwide ceasefire between all entities except for ISIS and other terrorist organizations that were not involved in the talks (Wagner & Kennedy, 2016).

Statistics of Refugee Camps

The conflict in Syria has been called the worst humanitarian crisis of the 21st century (Walsh, 2014). It is one of the largest exoduses in recent history and as of April 2016, the number of registered refugees has reached 4.5 million. Children now make up 52% of the total refugee population (UNHCR, 2016). A staggering 8,000 children have been separated from their families and have arrived at the camps alone (UNHCR, 2014). The sheer number of refugees and the scale of the problem make Syria unique among other refugee situations around the world (Grant & Harper, 2013). Aid organizations and

governments have established 60 camps and communities in the countries of Jordan, Lebanon, Egypt, Iraq, and Turkey (UNHCR, 2014; Petti, 2013).

Refugee camps are typically high-density. This is necessary because of the large number of refugees who need housing, is the most efficient way to use resources, and the best way to manage security concerns (Allen, 2013; Sipus, 2009). Al Zaatari, along the Syrian border in Jordan, is the largest of the refugee camps. Organized and run by the UNHCR, it opened in 2012 and within a year had 144,000 residents, making it Jordan's fourth largest city (see Figure 1). A second camp, Azraq, was opened as an overflow community 12 miles away and quickly grew to 60,000 inhabitants. Zaatari is located in the desert just 12km from the Syrian border, measures 3.5 km from west to east, and 3 km from north to south, and is divided into 12 districts and 530 sectors ("Zaatari: A day in the life episode 1," 2013). The camp functions much like any city, and Zaatari has a thriving central market located on a street that residents jokingly call the Champs-Élysées after the famous shopping district in Paris. The market has more than 700 shops and stalls offering a variety of fresh produce and packaged goods, and includes coffee shops, restaurants, barbershops, beauty salons, pet stores, flower and bridal shops, a travel agency with shuttle service to the airport in nearby Amman, and a pizza delivery service that devised a system for assigning addresses to individual shelters that the camp has since copied (Kimmelman, 2014; Petche, 2013; Tarantola, 2013).



Figure 1. Children walk among caravan shelters at the Zaatari refugee camp near Mafraq, Jordan. Photo © Caroline Gluck/Oxfam, used under a Creative Commons Attribution-NonCommercial 2.0 Generic (CC BY-NC 2.0) license.

In Azraq, which opened in spring 2014, officials from the Jordanian government and the UNHCR had more time to plan and incorporated lessons learned at Zaatari, making it the best-planned refugee camp ever built (see Figure 2). Azraq initially housed 51,000 refugees, with expansion space to hold up to 130,000 people. The camp features corrugated iron shelters for families, which are 13 feet by 17 feet, and placed in rows of 12 to 16, spaced six feet apart. These rows are clustered into villages of 10,000 to 15,000, with playgrounds, water points, disabled restrooms, clinics, hospitals, schools, mosques, markets, and police stations (Pelham, 2014). Refugees are assigned villages to live in based on the region in Syria they come from, and they can reserve shelters nearby for extended family members they expect to arrive in the future. The iron shelters are designed to protect refugees from the wind that tears canvas tents to shreds, and can be disassembled and taken home by the residents when it is time to return to Syria. More than 20 partnering non-governmental organizations (NGOs) provide services like schools and community centers at the camp, and CARE International holds a town-hall style meeting for the residents every day at noon to discuss issues important to them (Gormley, 2014). In spite of this planning, Azraq is still a forbidding place for refugees to live. The camp is located in the desert and the landscape is desolate, without trees, plants or even birds. It is surrounded by a fence of chicken and barbed wire to protect the residents but this also makes it difficult for them to leave (Pelham, 2014).



Figure 2. Azraq refugee camp in Jordan. Photo by Caroline Gluck/EU/ECHO. Photo © Caroline Gluck/EU/ECHO, used under a Creative Commons Attribution-Non Commercial 2.0 Generic (CC BY-NC 2.0) license.

Turkey has implemented another solution for refugees, and made the decision to run its own camps without support from the UNHCR. One such camp, the Kilis Accommodation Facility, opened in 2012 and is home to 14,000 residents who live in over 2,000 shelters (see Figure 3). At Kilis, the streets are clean and refugees have electricity and plumbing. Playgrounds were built for children, along with schools that some Syrians say are better than the schools they came from. Kilis is staffed by Turks and paid for entirely by Turkey's Disaster and Emergency Management Presidency (AFAD). By running these camps themselves, the Turks say they can better control their border and insure the safety of the refugees and the Turkish people (McClelland, 2014).



Figure 3. Kilis Refugee Camp on the border between Turkey and Syria. Photo © Michael Swan, used under a Creative Commons Attribution- NoDerivs 2.0 Generic (CC BY-ND 2.0) license.

Through trial and error, the UNHCR has learned that the complexity of refugee communities requires they be thought of not as camps but as cities (Rodriguez, 2013). The estimates for the lifespan of a refugee camp vary between 7 and 17 years (Allen, 2013; US Department of State, 2013; Lewis, 2008). Even if camps are meant to be temporary, they often become permanent and some believe they should be planned from the beginning for the eventual transformation into a permanent settlement (Petti, 2013; Rodriguez, 2013). Aid workers are beginning to see refugee camps as transitional population centers which can become a benefit to host countries rather than a drain on resources. The UNHCR is now looking to the long-term development of Zaatari by installing a permanent water system rather than continuing to bring water in trucks and Jordan's Ministry of Environment has promised to plant thousands of trees. Camp

officials are even negotiating with Google to install wireless internet service (Kimmelman, 2014). The longer the Syrian conflict lasts, the less likely it is that life for refugees will return to normal, and past conflicts have shown that few refugees are ever able to return home (Lewis, 2008; Grant & Harper, 2013). While refugee camps have many of the characteristics of any other city, the residents have no political voice and little control over their future (Petti, 2013; Rodriguez, 2013).

Refugee communities also face many of the problems cities do. Rates of disease and crime are high, and women and children are hit particularly hard (Allen, 2013). Food shortages, prostitution, and drug problems plague camps (Tarantola, 2013). Inadequate healthcare is resulting in the spread of communicable diseases and authorities fear the resurgence of polio (UNHCR, 2014). Children also suffer from a loss of education and, particularly for boys, high rates of child labor. Case managers and social workers from the UNHCR and partnering NGOs work to register and transport children to available schools in host countries. Children are eager to learn and their parents place a high value on education, but the needs outstrip the available resources (UNHCR, 2013). Over 400,000 children are missing out on an education, putting them at risk of becoming a lost generation with little hope of a future (Grant & Harper, 2013; UNHCR, 2014). Many refugee families have lost a father and young boys are forced to become providers. One in ten children is currently engaged in child labor in an attempt to earn money for their families (Grant & Harper, 2013; UNHCR, 2013). Young boys are also at risk of being recruited to go back to Syria to fight in the conflict (Halaby, 2013; Karam & Salama, 2014; UNHCR, 2013). Many girls are forced to stay in their shelters out of fear for their

safety, and 25% of children only leave their shelters once a week. This isolation and loneliness causes immense suffering for children (UNHCR, 2013).

The host countries of refugee camps offer front-line protection and essential support for those who have been displaced (UNHCR, 2014). Unfortunately, camps are causing an immense strain on infrastructure (Allen, 2013). Jordan in particular struggles to provide needed services, and even though many people are kind and generous to refugees, the camps create tension between communities (UNHCR, 2013). Refugee camps are potentially destabilizing and create blight on established communities who discourage the refugees from settling permanently. Some feel life needs to be made difficult for refugees or they will never leave (Lewis, 2008). The camps have caused price increases and strain the available resources for healthcare, education, and social services (UNHCR, 2014). Long-term settlement is against the government policy of the host countries, and planning for camps needs to comply with the requirements of the local population. The laws of the host countries also dictate a refugee's right to employment, healthcare, social services and education (Sipus, 2009). It must be kept in mind that refugees are not in these camps by choice, and they have nowhere else to go. With no end to the conflict in sight, host countries should realize many refugees might be there for good and provide opportunities for them to become citizens (Petti, 2013).

Resources Available to Refugees

Refugees who reach a camp come with little, usually arriving with their family members, the clothing they are wearing, and very few personal possessions (see Figure 4). They often deal with their reduced circumstances by eating less, selling their assets, going into debt, and sometimes engaging in child labor (Rodriguez, 2013; UNHCR, 2014). This is a difficult adjustment for the middle-class Syrians who enjoyed most conveniences before the war began, and are now in need of food assistance, shelter, and healthcare ("Issue brief: The Syrian humanitarian crisis," 2014). Of the nearly one million school age child refugees, 60% of them are not in school due to the limited resources of the countries they flee to. The shelters they are provided with range from prefabricated caravans and shipping containers, to tents and plastic tarps, depending on where they settle (UNHCR, 2014). In Zaatari refugees were first given canvas tents, one per family, with no electricity. The flimsy tents only lasted six months in the harsh desert before they had to be replaced and did not provide adequate protection against the cold, or the rats and scorpions found in the camp. Since then the tents have been systematically replaced with prefabricated wooden caravans which provide families with more living space and can be personalized to feel more like a home ("Zaatari: A day in the life episode 15," 2013). For refugees who find themselves in Lebanon, which does not allow the UNHCR to organize formal refugee camps, Syrians must find shelter wherever they can find it. Available apartments are scarce and expensive, and many refugees live in makeshift tent communities in whatever available land they can find. Some Lebanese farmers have allowed refugees to rent land to build shelters on, and refugee children must apply to be accepted into a local town's schools, something that often is not possible. As many as 40% of refugee children in Lebanon are engaged in child labor to support their families instead of attending school (Gilbert, 2014).



Figure 4. Mother and child registering for refugee status at the UNHCR registration center in Tripoli, Lebanon. Photo © Mohamed Azakir/World Bank, used under a Creative Commons Attribution-Non Commercial 2.0 Generic (CC BY-NC 2.0) license.

Organizing a refugee community is a complicated task. Cities take more than 20 years to develop, but Zaatari grew to capacity in a few short months ("Zaatari: A day in the life episode 1," 2013). As the camp grew, survey teams mapped out locations for future neighborhoods and families were assigned a place for their tent or caravan as they arrived ("Zaatari: A day in the life episode 2," 2013). This configuration may be efficient, especially by western standards, but it is not conducive to creating family or community bonds, especially for extended families that wish to live together. The UNHCR does allow refugees to modify the shelters once they are settled, but moving them can be difficult (Lewis, 2008). Refugees in Zaatari resorted to the construction of makeshift rigs by dismantling perimeter fences and attaching tires to the fence posts to transport wooden caravan shelters to new locations and rearrange their neighborhoods ("Zaatari: A day in

the life episode 2," 2013). Shelters are often rearranged into a U-shape pattern to create a central courtyard between caravans of extended family members ("Zaatari: A day in the life episode 15," 2013). Zaatari also has a number of communal resources, including water tanks, restrooms with squat toilets and showers, and kitchens. As many as 250 people must share the communal restrooms, and some refugees have responded to the overcrowding and lack of privacy by dismantling these facilities and rebuilding them as part of their private spaces. This misappropriation of resources has caused the camp planners to rethink the way they organize, devising new ways to combine the Syrian's vision of the camp with their own ("Zaatari: A day in the life episode 1," 2013).

Not all refugees are lucky enough to leave Syria and make it to one of these camps. The Kilis Accommodation Facility in Turkey is considered to be a model for an ideal refugee community, but only a few kilometers away on the other side of the Syrian border, as many as 25,000 refugees survive in the Bab al-Salameh camp in squalid conditions, unable to make it over the border. These Syrians are considered internally displaced and are not included in the count of officially registered refugees who have crossed a border. Some stay in the camp permanently while others return to their homes for a period of time, only to return when fighting intensifies. The makeshift camp conditions are toxic, with polluted water and scant resources. Aid organizations try to supply these refugees with food and supplies but many are given food for only one meal a day. In an attempt to create a semblance of a normal life, residents have set up a market street, a medical clinic, and an overcrowded school where as many as 650 students receive lessons in tattered tents partitioned into classrooms by curtains. The school has no books or paper to print homework and the teachers who work for meager wages worry

the children will remain illiterate (Looney, 2014). The UNHCR reports that 241,000 Syrians are living in inhumane conditions within Syria and requests to bring aid supplies through border crossings are repeatedly denied by the Syrian government (Amos, 2014).

Even with the shelters provided in UNHCR refugee camps, these communities are difficult places to live. The host countries, especially Jordan, are already water poor and refugees are putting a strain on available clean water supplies. Inadequate hygiene and sanitation creates conditions in which diseases spread quickly. Many children are not vaccinated and there is a fear of a reemergence of polio in the camps. Food insecurity also means there is a risk of malnutrition, despite the best efforts of aid organizations (UNHCR, 2014). In November 2014 the World Food Programme (WFP) was forced to cut food vouchers for all but the most needy of refugees from Syria, as well as those in Afghanistan, even though 85% of refugee families say they don't have enough money to buy food each day. Food rations were cut to 60% of the previous amount due to a shortfall in donations from the international community, as the WFP's needed global budget doubled from \$4.3 billion to \$8.5 billion in 2014, largely due to the escalation of fighting in Syria. For Syrian refugees alone, \$35 million a week is needed to provide adequate food rations (Murphy, 2014).

In addition to giving refugees food and shelter, the UNHCR also provides psychological support and counseling when it can. It is estimated that 246,000 children will receive psychosocial support of some form, usually in an education setting, and the mental well-being of children is identified as a priority for humanitarian intervention (UNHCR, 2014). Teachers in schools with refugee children are given special training to support their needs, and the United Nations Children's Fund (UNICEF) is building

playgrounds and providing other opportunities for recreation and additional psychological support. Many refugees also volunteer to help one another and serve on a variety of committees exploring issues that affect their children. Unfortunately, there is still a serious gap in the services available and the needs of refugees. Even in the Zaatari refugee camp, 80% of the children there are not receiving the psychological help they need (Curry, 2013). There are no child psychologists working in camps in either Jordan or Lebanon to provide for the specific needs of the children's emotional well-being (UNHCR, 2013).

A number of NGOs are working with the UNHCR to provide additional support. According to one such group, Save the Children, "the scale, brutality and duration of the [Syrian] conflict have created levels of need almost impossible to imagine" ("A devastating toll," 2014, p. 1). Aid workers for Save the Children report that the war has devastated Syria's health system, and supplies are so scarce that one doctor was seen using a car battery to run a homemade dialysis machine ("A devastating toll," 2014). To provide for the specific physical and psychosocial needs of children, this NGO runs over 50 safe play spaces for refugee children in various locations and 14 of these centers reach 3,200 children a day between the ages of 5 and 16. One six-year-old boy attended a workshop held by Save the Children along with his brothers and found the opportunity to play was a chance to forget his fear and remember the good times before the war (Save the Children, 2013). Save the Children has issued recommendations to the international community that include a call for all NGOs to share information and for international donors to provide funds to organizations based on need rather than political agendas (Martlew, 2013).

The Restart Center for Rehabilitation of Victims of Violence and Torture is working in Lebanon to provide refugees, particularly children, with mental health services. The goal of Restart is to detect cases of trauma early and help refugees receive support to decrease the negative side effects of mental stress. To do this, Restart has implemented an awareness campaign among refugees, providing recreational activities for children and giving them supplies to help reinforce their hobbies and talents in the areas of sports, arts, music and science. They also organize support groups for women. In 2013, a total of 1160 registered Syrian refugees and 257 non-Syrian refugees received psychosocial services through these and other projects by Restart ("Annual report," 2013).

The aid organization CARE International is also working to help Syrian refugees and the countries hosting them. CARE has organized four relief centers in Jordan to reach 395,000 refugees to provide relief supplies and training to allow refugees to help each other with assistance, as well as information and psychological support. In Lebanon, the country with the most refugees, CARE provides water, sanitation, shelter, and cash assistance ("CARE's response to the crisis in Syria," n.d.). In the new Azraq camp in Jordan, CARE is running community centers that will be used for whatever is needed, from social gatherings to workshops and training (Pelham, 2014). CARE describes the Syrian conflict as "the defining crisis of a generation," and says that international aid is failing to meet the needs of refugees ("Issue brief: The Syrian humanitarian crisis," 2014, p. 1). As of February 2014, only 11% of the \$6.5 billion for which the United Nations made an appeal has been provided. CARE estimates that 80% of refugees are living outside of camps. They often find it difficult to obtain work permits and face competition

and discrimination that make it difficult to earn money. CARE recommends that the international community put pressure on the Syrian government to comply with human rights laws, call on governments donating money to focus on the specific needs of women and girls, and ask for flexible, long-term funding to enable development agencies to meet the growing needs ("Issue brief: The Syrian humanitarian crisis," 2014).

Mercy Corps has specifically identified refugee children as being in need of support, reporting that they have "lost an anchor for normalcy, a means for coping with the trauma, and also hope for the future" (Hummer, 2013, para. 2). Mercy Corps feels special attention needs to be paid to these innocent victims who are at risk of becoming a lost generation, and it is their goal to help children cope and heal, as well as save and improve lives ("Syria: An ongoing crisis," 2014). To do this, Mercy Corp has created Child-Friendly Spaces in refugee communities, with the goals of protection, psychological well-being, and healthy social integration for all children (Hummer, 2013).

Psychological Trauma and Refugees

While it is difficult to know the exact number of people suffering from psychological trauma caused by the current crisis in Syria, the effects of political violence on refugees have been studied in other conflicts seen in the Middle East and around the world. Mental health professionals working with refugees have observed that political violence creates instability and insecurity in survivors that severely impacts their relationships and overall mental health (Cummings & Visser, 2009; Papadopoulos, 2005; Qouta, Punamaki, & Sarraj, 2008). This forced displacement causes refugees, especially children, to feel insecure, helpless, and vulnerable. This leads to the development of symptoms such as post-traumatic stress disorder (PTSD), depression, anxiety, increased levels of aggression, sleep disturbances, flashbacks, bedwetting, and speech problems (Baker, 2008; Brunick, 1999; Grant & Harper, 2013; Guttman-Steinmetz, Shoshani, Farhan, Aliman, & Hirschberger, 2011; Qouta et al., 2008; Schlitz & Schlitz, 2013; UNHCR, 2013). Witnessing traumatic events can also impact a child's cognitive development. Disturbances to a child's problem-solving abilities, memory, moral reasoning, emotional expression, and social development have been documented. Traumatic events alter the developmental pathways of the brain, resulting in difficulty concentrating and trouble processing new information (Qouta et al., 2008). The severe psychological impact the war in Syria is having on children is likely to have far-reaching effects (UNHCR, 2014).

Two types of trauma stemming from political conflict have been identified. Type I trauma comes from experiencing a one-time horrific and life-threatening event, like witnessing a killing. Type II trauma comes from the chronic stress and adversity that becomes part of a child's life while living in refugee conditions. When violence against a child's family is involved it heightens the level of the trauma (Qouta et al., 2008). When children experience trauma at the age of six months to two years old, they suffer from nightmares because they are preverbal and are unable to describe what they see and feel. Trauma experienced between one and three years old may cause children to suffer from learning problems. At three to ten years old, children will begin to use words to express their fears. For 9- to 15-year-old children, the added pressure of adolescence can make trauma even harder to cope with (Brunick, 1999).

The UNHCR has documented conditions among Syrian refugees that qualify children of all ages as experiencing both Type I and Type II trauma. High rates of psychological distress are reported among the hundreds of thousands of children who have been wounded and the more than one million that have had their protective environments destroyed (UNHCR, 2014). Child refugees have told aid workers that they have seen family members killed and have even had to help bury the bodies (UNHCR, 2013). It is reported that 20% of all refugees are having difficulty carrying out their daily activities as a result of the atrocities they experienced, and 1 in 20 is in need of mental health care (UNHCR, 2014). Even after refugees are able to leave the conflict and find asylum in another country, the effects of trauma continue. A study of young refugees from the Middle East relocated in Denmark found that 75% had anxiety, sleep disturbances, or depression; 26% exhibited psychological symptoms that adversely affected their lives (Montgomery, 2011).

The situation may seem bleak but there is hope. It has been found that the longterm effects of trauma experienced by refugee children can be reduced over time (Montgomery, 2011). The UNHCR has identified trauma experienced by child refugees as a major area of concern and has launched the "A Lost Generation?" strategy to explore ways to provide children with safe and protective environments while in refugee camps (see Figure 5). It is hoped that access to education, along with physically and psychologically safe places to play and live, will help children to reclaim their childhoods (UNHCR, 2014). It has been noted by aid workers assisting Iraqi refugees who fled to Syria before the civil war, that providing refugee children with safe spaces, community support and directed activities will help children to reestablish equilibrium and help them

to cope (Quosh, 2013). A study among Palestinian refugee children shows that trauma doesn't affect a person's creativity, and a balance of intelligence and creativity is critical for children to be resilient in such difficult circumstances. Good mental health is a prerequisite for establishing peace and preserving human rights, and providing refugee children with ways to cope with trauma is critical to the process of establishing lasting peace (Qouta et al., 2008).



Figure 5. Syrian children in the Zaatari refugee camp in Jordan. Current conditions in refugee camps do not provide children with adequate places to play. Photo © Caroline Gluck/Oxfam, used under a Creative Commons Attribution-Non Commercial 2.0 Generic (CC BY-NC 2.0) license.

Design Thinking & Humanitarian Initiatives

In recent years, a number of architects and designers have begun to apply their skills to humanitarian projects. Organizations like Habitat for Humanity and Architecture for Humanity have been involved in a number of projects addressing humanitarian issues. In March 2014, the Pritzker Architecture Prize, the most prestigious award in the profession, was awarded to Shigeru Ban largely for his work designing refugee shelters
after disasters in countries like Rwanda, Turkey, India, China, Japan, and New Zealand (Pogrebin, 2014). Redesigning refugee shelters is the subject of many student projects and design competitions, though the complex political nature of regional conflict and the economic factors in play make them difficult to implement (Sipus, 2009; "Ikea creates flat packs for refugees," 2013). Architecture for Humanity worked to raise funds to prototype a community hub that will provide a safe and welcoming gathering place in refugee camps ("Safe spaces for Syrian refugees," 2013; Allen, 2013). Other design initiatives have addressed the need for mobile hospitals and explored the use of shipping containers as shelters, while architects have begun to discuss the moral obligation they have to help those in need (Allen, 2013; Rodriguez, 2013).

A promising development in the fabrication of refugee shelters comes from the Ikea Foundation. The Swedish furniture maker, an expert at designing ready-to-assemble furniture, is working with the UNHCR to develop a flat-pack shelter that can be shipped and assembled anywhere in the world. Traditional canvas tents provided by the UNHCR only last six months before they need to be replaced. The Ikea shelters not only have a lifespan of five years, they are able to generate electricity through solar panels on the roof. A pilot program began testing in refugee camps in Africa in 2013 to judge if they will be feasible on a larger scale. The Ikea Foundation has also collaborated with anthropologists and the refugees themselves to address the design of camps, creating communities that function like villages rather than military style barracks (Hansegard, 2014).

Another promising architectural innovation for refugee shelter comes from the development of a concrete fabric that can be used to create customizable shelters. Once in

place, the fabric is doused with water and as it dries it hardens into an impenetrable shell. Shelters made from this fabric are light and movable but are much more durable than typical refugee shelters. The fabric is being tested by UNICEF and Doctors without Borders to see if it is a feasible alternative to traditional shelters (Yabroff, 2008).

Many design initiatives fail to be implemented because of the complex political and economic climates surrounding conflicts like the one in Syria. Some designers are directing their work at raising public awareness instead. In March 2014, Banksy, a graffiti artist from the United Kingdom, created a piece of artwork depicting a refugee girl releasing a heart-shaped balloon (see Figure 6). The image marked the third year of the Syrian civil war and hopes to raise awareness over the struggle of refugees, 95% of whom are non-combatants in the conflict (Walsh, 2014). Another designer in London conducted art workshops with children to design and develop a "transient sanctuary" for refugee camps. The structure is made of cut wood that can interlock to create an intricate lace-like structure. The flat-pack design that can be easily shipped and assembled anywhere was put on display in London in 2013 to raise awareness (Dorsey, 2013).



Figure 6. Stand with Syria demonstration in Trafalgar Square, London, on March 13, 2014. A projection of Banksy's Syrian balloon girl is seen projected at the base of Nelson's Column. Photo © Philip Lang, used with permission under a Creative Commons Attribution-Non Commercial 2.0 Generic (CC BY-NC 2.0) license.

The effort to support design for refugees has also entered the realm of education. In the summer of 2014, Open Online Education, an organization that offers free online classes to the design community with the focus of finding real-world solutions to global challenges, offered a course on designing emergency shelters for refugees. The 25-week course was aimed at architects, engineers, and design professionals to assist them in the design and implementation of new shelters for refugees that would become a supportive environment to minimize the psychological trauma they have undergone and help them to heal. The final projects in the class consisted of affordable and easy to build shelters and were made available to aid organizations through an open-source platform from which anyone can download and build the plans ("Designing emergency shelters," 2014).

Design thinking is also being used to address the needs of refugees in a number of areas, and the UNHCR has begun to call on designers to help them find solutions to their most difficult problems. The UNHCR Innovation Lab in Geneva began in 2012 as a way to partner with design leaders in various industries, and there are now 25 projects in development from the first lab ("UNHCR innovation," 2014). One of the Innovation Lab's partners is Stanford University, whose law school offers a design thinking class called Rethinking Refugee Communities. This class challenges students to brainstorm, ideate and prototype solutions that will support the development of refugees. Through this class, students have worked with the UNHCR and the International Rescue Committee to improve refugee conditions and they travelled to a refugee camp on the Sudanese border to work directly with refugee families. Student projects in this class include a software program that improves the camp registration process, mobile technology adapted to provide communication between aid workers and refugees, and the development of ways to support small-scale farming among refugees (Duff-Brown, 2013). Students in the MBA program at Cornell University have also used the design thinking process to work with refugee women resettled from the Congo to help them develop ways to start their own businesses (Altobello & Allister, 2014).

In the business world, one multi-disciplinary team worked with Microsoft to conduct design thinking workshops aimed at examining ways the teenage children of recently resettled refugees in the United States help their families assimilate into their new communities. Workshops were conducted to focus on how these teens can be

supported in their efforts through technology and information services (Fawcett, Bishop, Fischer, & Magassa, 2012). In another project, graphic designers at Hyperakt were invited by the UNHCR to develop the Refugee Project by turning the United Nation's vast collection of data on refugees into an interactive map to track the plight of refugees and to create a narrative structure for the information to tell their stories. The goal of the project is to make the world aware of what is happening to refugees and the designers donated more than 500 hours to make it happen (Wezerek, 2014).

Design thinking was also used to develop the design initiative Youth Helping Refugees, a contribution made to OpenIDEO's call for solutions to address the development of employment opportunities for people around the world. OpenIDEO is a platform developed by the consultancy group IDEO to allow a broad range of people to address global problems through the design thinking process. Youth Helping Refugees emerged through brainstorming and collaboration exercises and proposes the development of a refugee transition community. This community would allow refugees to seek asylum in new countries while receiving job training and support services from organizations that would ask local youth to help, contributing to the economy by employing both groups (Curtis, 2014). IDEO also sponsors HCD Connect, a community platform that allows designers working on global problems to share stories and methodologies. Through this platform, Stanford helped the NGO Asylum Access to conduct a design thinking workshop to receive feedback from former refugees from Eritrea, Bhutan, and Burma. Two groups of refugees gave feedback on three developed prototypes: one using mobile phones to help early camp setup, a second establishing community gardens, and a third focusing on shared needs to improve relations between

refugees and host communities. The feedback from the workshop allowed the former refugees an opportunity to design their own solutions as well as give opinions on the existing prototypes, resulting in a discussion that was described as compelling and that provided important insights into the refugee experience (Liu, 2013). HCD Connect has developed a toolkit to aid designers in conducting this type of workshop, guiding them through the design thinking process as they utilize human centered design to address global issues ("HCD Toolkit," n.d.). This new use of design thinking shows how the process can be a powerful tool for addressing both the physical and emotional needs of refugees.

Art Therapy and Psychological Trauma

Art therapy has been successfully used as a way to help refugees deal with trauma, both in Syria and in previous humanitarian crises around the world. The UNHCR, which provides the majority of humanitarian relief, currently utilizes therapeutic art techniques with children as they register people who arrive at refugee camps. Workers provide paper and crayons to children and encourage them to draw as a way of soothing their fears of arriving at a new home. The images aid workers see are often graphic depictions of war and destruction (UNHCR, 2013).

The effectiveness of art therapy as a way to address trauma lies in its gentleness. The creation of artwork gives a voice to the things that cannot be said and provides for healing that can generate change. Art therapy was used with traumatized children as early as World War II, and examples survive of art created by children at the Terezin Concentration Camp in Czechoslovakia. The children in the camp were given art classes by Friedl Dicker-Brandeis, a Bauhaus-trained artist who was also imprisoned there. Over

the course of two years beginning in 1942, Dicker-Brandeis helped children draw images from their inner worlds and express their emotions in an attempt to help them heal. One survivor described the classes, saying, "[she] managed – for some hours every week – to create a fairy world for us in Terezin ... a world that made us forget all the surrounding hardships, which we were not spared despite our early age" (Volovkova, 1993, p xx). More than 15,000 children died at Terezin ("Terezin concentration camp," n.d.) and Dicker-Brandeis was transferred to Auschwitz in 1944, before dying at Birkenau, but 5,000 of the drawings, collages, and poems from the children at Terezin survive in the State Jewish Museum in Prauge (Volovkova, 1993).

More recently, in work with adult refugees who escaped the atrocities in Bosnia, the Chicago Health Outreach program found that creating quilts as a group allowed participants to resolve conflict, develop personal strength, heal invisible wounds, and tell secrets without fear of retribution. Art therapy was especially effective with those who did not respond to talk therapy. It created a safe atmosphere and provided a social support system that emphasized what the refugees had in their lives, rather than what was lost (Baker, 2008). A clinical experiment among refugees and asylum seekers in Luxembourg found that artistic mediation in trauma survivors is not intrusive and respects the mind's defense mechanism because it begins with a non-verbal expression of the trauma that will transition to verbal expression when a person is ready. Art can be an avenue to stimulate the healthy part of the mind by improving the connections between the conscious and the unconscious. In this study, music, writing, painting, and dance were all found to be of benefit to trauma survivors (Schiltz & Schiltz, 2013).

Work done by the Dutch NGO War Child found that many refugee children in Sudan appeared to be withdrawn and depressed, with no spontaneity or improvisation to their play. Art workshops were conducted using a non-judgmental, non-competitive, process-based approach that involved singing, painting, acting, dancing, and storytelling. The aims of the workshops were to provide children with support and strengthen their inner reserve so they could become better at protecting themselves. The creative outlet also provided them with a form of expression and communication that allowed them to assert their identity. The visual narratives created through art allowed the children to give meaning to their experiences and contributed to their overall well-being. After participating, children were noticeably more relaxed. They smiled more easily and were astonished by their own artistic abilities. Over time it was found that the children became less aggressive, took fewer risks, and got into less trouble as they participated in the workshops (Nabarro, 2005).

Working with elementary-aged refugee children from Bosnia, Kosovo, and Sudan, one art educator in the United States found that giving these children opportunities to express traumatic events through art was beneficial to their healing process, even if the art teacher was not trained in psychology. Students used drawing, writing poems, and storytelling to express themselves. The experience was empowering and they were able to make their own choices in a non-threatening environment (Brunick, 1999). Similarly, art workshops held with young child refugees from Afghanistan and Kosovo who fled with their families to England found that drawing is a less threatening way to address feelings than speaking about them. The children who participated were tracked for six months, and in that time it was rare that a child was not willing to draw.

Doing so greatly reduced their stress and they showed positive development in selfconfidence and interaction. Over time, children learned to share their pictures with confidence and began to initiate conversations (Cumming & Visser, 2009). Another young refugee woman in England received individual art-based counseling and through the process, she was able to strengthen ties to her past by recalling good memories. As she used art to express her feelings of loss, her nightmares began to diminish (Isfahani, 2009). Another group of refugee children who found safety in Canada were introduced to art therapy through photography, narratives, and creating a hope quilt under the direction of an early intervention program. The creative therapy approach allowed the children to discuss traumatic events as they shared their work, creating connections with each other that enhanced their hope (Yohani, 2008).

One former Iraqi refugee is now working to help those who have fled Syria as a volunteer with the UNHCR, using a background in psychology to work as a psychosocial outreach volunteer, and introducing glass painting as a way to reach refugees suffering from trauma. Here, painting was found to be a valuable way to form an indirect peer support group for refugees and build trust with aid workers. These efforts had to be shut down because of safety concerns, but a safe environment is all that is needed to continue (Ismael, 2013).

The most promising aspect of art therapy as a way to address trauma caused by political conflict is that it does not need to be administered by trained psychologists for someone to receive a benefit from participating (Brunick, 1999; Nabarro, 2005). By simply providing children with art supplies and a safe place to create, as the UNHCR currently does with children as they arrive at refugee camps, fears can be eased and

feelings can be given an expression that may help children feel like they have control over their lives.

Large-scale disasters such as the war in Syria require long-term solutions (Allen, 2013). In spite of incredible adversity, the people of Syria have displayed strength and resilience. They are finding creative ways to solve many of the problems they face and the children especially are not giving up on their dreams (UNHCR, 2013). Much is being done to help, but the needs are outstripping resources. More can and should be done for Syrian refugees and a priority should continue to be placed on the psychosocial needs of children.

This review of literature shows that art therapy can be a valuable tool in helping refugee children heal from the trauma of political violence. Aid workers currently use art as a therapeutic technique to welcome children as they arrive in camps, and UNICEF has sponsored a number of art activities (UNHCR, 2014), but it is not used in a widespread or systematic way to meet the ongoing psychosocial needs of children. The UNHCR has identified the psychological health of children as being a priority for the organization (2014), and the implementation of strategies to provide art therapy throughout refugee camps will provide an effective and affordable way to address this critical need.

The Importance of Empathy

Empathy is defined as the cognitive ability to observe and understand the emotions of another combined with the affective ability to share those emotions, often resulting in sympathy or concern for the person being observed (Richter & Kunzmann, 2011; Sağkal, Türnüklü, & Totan, 2012). Empathy occurs when one person listens to

another and is interested in the other's situation in a non-judgmental way. It develops subconsciously through formative recognition and causes a person to become aware of a new feeling of empathy (Barrett-Lennard, 1997). Empathy has been misunderstood as being a simple feeling of sympathy or support of another person, but is instead a deep understanding of their unique vantage point. It involves connecting with the other person's inner state, being in tune with their thoughts and feelings, and experiencing what it is like to live in their world (Bohart & Greenberg, 1997; Greenberg & Elliott, 1997; Howe, 2013).

One way to gain empathy is by exploration and discovery in the form of imagination and role-play, focusing on the circumstances of another's life to expand awareness and gain a deeper understanding of what another person is going through. Empathy does not require a person to feel the same feelings as another; instead it is a form of emotional understanding. An appropriate empathic response to another person's pain or sadness would be to feel care and concern, which leads to a greater perception of the situation and results in a holistic understanding of another's experiences (Bohart & Greenberg, 1997; Greenberg & Elliott, 1997; Howe, 2013). Empathy can also be gained by listening carefully and focusing on another's current experience in an attempt to understand their thoughts and feelings, correctly identifying those feelings and responding appropriately. This approach requires a person to disregard his or her own beliefs and expectations and to grasp what is important to another. Understanding can also be gained through intuition rather than through conscious thought (Bohart & Greenberg, 1997; Howe, 2013).

Empathy began to inform the design process in the late 1990s when designers sought to explore emotion as a way to solve design challenges. They looked to everyday experiences and practices to understand people and their needs, facilitating innovative design solutions in a practice that is now called empathic design. To infuse empathy into the design process, observation, open-minded collaboration, and curiosity became important techniques. Designers also explored the life experiences, emotions, and desires of the people they were designing for as they worked to develop solutions. They found the key to utilizing empathic design is to inhabit the world of the end user as much as possible. This is done by evaluating the meanings people give to things and to act on those meanings, to design in the real world, to utilize research methods that are playful and engage the senses, and to explore meaning through visualizations in the form of prototypes and storyboards. Empathic design was first meant to inform product design and has since spread to include services and social problems (Mattelmäki, Vaajakallio, & Koskinen, 2013).

In recent years, empathic design has evolved to include co-design, where the end users become a part of the design process. Co-design enables both designers and endusers to change their thoughts on the topic they are studying throughout the process, increasing their sensitivity and improving their ability to empathize. There is, however, an "empathy trap" to be wary of, in which designers feel they must employ solutions that meet perceived expectations because of the gravity of many social issues, instead of using their own judgment and imagination (Mattelmäki, Vaajakallio, & Koskinen, 2013).

The emotions empathy elicits, like sympathy and caring, have proven to be valuable in marketing as well as in design, especially in regards to social issues. Aid

organizations often use children in their promotional materials to raise funds because images of innocent and vulnerable children are effective in creating a feeling of sympathy among potential donors. Research has found that sympathy is greatest when children in ads or public service announcements display negative emotions like fear and distress, causing the viewer to also experience the child's distress. This is explained by the "empathy-helping hypothesis," which explains that people are more likely to help others when they vicariously experience the situation and emotions of those who are in need, taking on their perspective in regard to their distress. This evokes emotions of caring towards others and causes compassion and a desire to help. One study found that the level of perceived need of a victim is more critical in eliciting a desire to help others than in any other similarities that may exist between the two, like race or religion (Fisher & Ma, 2014). People who observe others in great need will want to help them no matter how different they are. Feelings related to empathy are greatest when someone is vulnerable. Particularly in relation to children in need, the greater the perceived suffering, the greater the empathy experienced by an observer and the greater the feelings of care and compassion that are evoked (Fisher & Ma, 2014).

Studies have also proven that empathy can be produced in children to create a deeper understanding of the suffering of others. For example, students who are taught empathy skills in order to understand the perspectives of others have been shown to display behavior that is considered moral and pro-social, and they are better at controlling aggression and other antisocial behaviors (Feshbach & Feshbach, 2009). Empathy is also linked to improved problem-solving skills. A study on the development of empathy was conducted with sixth-grade students at two elementary schools in Turkey. It was found

that children who participated in a peace education program, which focused on building empathy and developing conflict resolution skills, displayed significantly higher levels of empathy towards others when compared with children in a control group who received no such instruction. The study also showed that boys and girls both raised their levels of empathy and gender played no role in a child's ability to empathize. The researchers concluded that empathy skills in children will help to prevent others from feeling marginalized, reducing violence among children and increasing cooperation and trust, and that parents and educators can help children to develop empathy (Sağkal, Türnüklü, & Totan, 2012).

Another study was conducted with children between the ages of 8 and 13 in the Netherlands in which they were asked to imagine how other children felt in various scenarios. Some of these scenarios involved children who were part of their circle of friends, and others who were not among their friends. Researchers wanted to find out how important social boundaries were to children and whether or not inducing empathy would influence behavior. They found that without intervention, children were more likely to help another child who was their friend over one they did not know, but when they were asked to imagine how a child in need feels, it did not matter whether or not the child was among their group of friends, they would want to help. When the children were asked to employ empathic understanding, they considered the level of need of another child before social boundaries (Sierksma, Thijs, & Verkuyten, 2014).

As seen in this review of literature, the issues involving Syrian refugee children and the conditions they currently live in are complex. Art therapy has been successfully used to help refugees of former conflicts heal from trauma caused by violence, but

examples of its use among Syrian refugees are limited. Design thinking methods have also been used to address the needs of refugees, but no studies or projects were found that employ design thinking to introduce art therapy as an instrument of healing to Syrian refugee children. In light of these findings, the methods of this research study were developed to implement design thinking as a way of uncovering new solutions that may benefit refugee children through the use of art therapy.

Methods

Research Design

This study sought to uncover new solutions to the unique needs of Syrian refugee children in a series of design thinking workshops that brought together design professionals, volunteers who work with refugees, a former refugee, a marriage and family therapist, educators, and others who care about the issue. Through brainstorming, the use of design thinking strategies, and prototyping, these stakeholders worked together to ideate and develop solutions focused on art therapy that may not have been previously used to assist in the psychosocial well-being of refugee children and their families. The participants also completed questionnaires before and after the workshops to gauge their understanding of the issue and their level of empathy towards refugee children. After these groups worked to develop a number of solutions, their ideas were presented to a group of children and their parents for testing and further feedback. These families also completed similar questionnaires. The input from this workshop determined the selection of a final solution which will be developed through an additional prototype and all participants will be asked for their feedback.

To accomplish this, the study utilized a variety of qualitative and quantitative research methods to collect and analyze data, making this a mixed methods approach (Creswell, 2014). Qualitative research is essential to this study because it is the ideal way to explore human problems by examining the meaning that individuals place on such problems in an attempt to gain a new understanding of their complexity (Creswell, 2014). This inductive style of research relies on data collected in the participant's setting, which is then interpreted by the researcher through the use of interviews, observation of

participant behavior, and the examination of documents that relate to the research problem (Creswell, 2014). The flexible nature of qualitative research allows for data collection from multiple sources, and as the data is analyzed it is organized into themes or categories that begin to form patterns (Creswell, 2014). These patterns are then compared with the data and a comprehensive picture is created as further data is collected. The researcher continues to work back and forth between the patterns and the data, revealing the meaning the participants hold regarding the issue, rather than the researcher's own meaning or the meaning expressed in the literature (Creswell, 2014). Research plans in qualitative studies must remain flexible and changes may be made in the field as data collection begins (Creswell, 2014).

The focus of quantitative research, on the other hand, is to test theories the researcher has by measuring the variables of the study and analyzing the relationships between those variables (Creswell, 2014). This is achieved through the use of instruments that capture data and allow for the establishment of possible cause-and-effect relationships among the study's variables (Fraenkel, Wallen, & Hyun, 2012). Mixed methods research utilizes data collection from both qualitative and quantitative instruments to arrive at a more complete understanding of the research problem than could be gained by using one method alone (Creswell, 2014).

Sample

Due to the difficulty of travel to refugee communities in the Middle East, and in light of the recent violence against aid workers by Islamic extremists in Syria (Holdaway & Hall, 2015; Kravitz & O'Molloy, 2014), subjects for this study consisted of interested parties in the state of Utah. In addition to being the geographic location of the researcher,

Utah has ranked the number one state in the nation for volunteerism for the past ten consecutive years (Edwards, 2015). In 2012 a total of 837,650 Utahans volunteered 144 million hours of service. This number constitutes 40.9% of adults in the state, in comparison to a national average of 26.8% of adults who volunteer their time (Cortez, 2012). This strong commitment to service made Utah an ideal place to conduct workshops aimed at helping refugee children. Many people are already engaged in humanitarian causes and are willing to participate.

This study assembled a multi-disciplinary group of creative professionals to draw on their unique knowledge to brainstorm and prototype innovative solutions for refugee children focusing on the use of art therapy. A minimum of 12 participants were invited to each of two workshops, with 8 attending workshop one, and 10 attending workshop two. Participants consisted of interior designers, graphic and user experience designers, architects, a marriage and family therapist, educators who work with children, a former refugee, volunteers who work with relocated refugees, and members of the Islamic faith. Each participant in this diverse group was invited to contribute based on his or her experience and expertise, making this a purposive sample. In this nonrandom form of sampling, a researcher selects participants based on personal judgment and prior information that indicates the participants will be able to contribute to the workshops in a meaningful way (Fraenkel, Wallen, & Hyun, 2012). Participants were also selected through a snowball sample, as some were invited to attend based on the recommendations of other participants (Fraenkel, Wallen, & Hyun, 2012). The age, gender, and race of the subjects were not a factor in selection. Most Syrians belong to the Islamic faith so Muslim participants were included in workshops one and two, and since Christians

account for 10% of the Syrian population and have been specifically targeted by extremists during the conflict (Creegan, 2015; "Syria's beleaguered Christians," 2013), Christian participants were also represented in the first two workshops.

Workshop three consisted of five families, all of which had two parents and two children between the ages of eight and ten. While all five families agreed to participate, not all family members were able to attend. The total number of adults at the workshop was eight, and the number of children was nine. All families were known to the researcher and invited based on their past involvement in volunteer activities and interest in humanitarian issues. Families of refugees were not invited to participate due to the potential, especially among children, to become upset by the procedures.

Instrument

To collect data, each workshop utilized brainstorming activities and design thinking strategies to aid the participants in ideation, and pre- and post-workshop questionnaires were used to gauge the empathy levels of each of the participants. The design thinking strategies make up the qualitative portion of the study, while the questionnaires are quantitative. To determine the best strategies available for use in the workshops, a number were pilot-tested on a small group of participants to judge their feasibility and value as tools for discussion. The design thinking strategies tested were brainstorming; concept mapping; bull's-eye diagramming; visualize the vote; problem tree analysis; rose, thorn, bud; and creative matrix. Each strategy was intended to aid workshop participants in discussion by examining different aspects of the problem in a way that deepened understanding and sparked new ideas (see Appendix B). Based on the

results of the pilot tests, the final strategies used in the workshop were brainstorming, concept mapping, problem tree analysis, and creative matrix.

In the brainstorming session, participants were instructed to consider art therapy and art activities as they began, and were given pens and sticky notes to write down all ideas they had related to the problem, one on each note, in a set period of time (see Appendix C for design thinking strategy instructions and Appendix D for workshop instructions). The goal of brainstorming is to generate as many ideas as possible in relation to the problem, without regard to feasibility, and without making a judgment on any idea's value. Participants were instructed to look at the problem from different perspectives and include even the ideas they consider to be outrageous. They were also encouraged to discuss the issue as they worked, to use the collaboration between group members to spark new thoughts and pathways, and to build on each other's contributions to collect a wide variety of ideas. It was stressed to the participants that no idea was too stupid or simple to be written down, and they need not be afraid to share (Rich, 2003). The result of this brainstorming was a collection of ideas that were later evaluated and analyzed during a subsequent design thinking strategy.

Concept mapping was first developed as a method of organizing various concepts related to a problem so that new connections could be formed. In the pilot test of this map, concepts, usually in the form of nouns, were written on small slips of paper and presented to a group (see Appendix B). The concepts were moved around on a large sheet of paper as the participants grouped them based on their relationships to each other, and the slips were affixed to the paper when the team was satisfied with the placement. Concepts were then linked to each other by lines drawn to indicate the connections, and a

linking verb was written to explain each relationship. The result was a web of organized concepts and the relationships that exist between them. Through this process the concept map became a visual depiction of the problem and aided participants in gaining a deeper understanding of the problem. It also invited communication between the multi-disciplinary team members (*Innovating for people*, 2012).

A problem tree analysis allowed participants to focus on the cause and effects of the issue in a discussion. In this strategy, aspects of the problem were identified and mapped, with the central issue written on a large sheet of paper representing the trunk of a tree (see Appendix B). The effects were discussed and written above as branches stemming from the issue, and the causes were identified below the trunk as the roots of the problem. This visual metaphor aided participants in identifying cause and effect and in gaining a deeper knowledge of the complex problem (*Innovating for people*, 2012).

The construction of a creative matrix asked participants to fill in a grid with a minimum of five rows and five columns drawn on a large sheet of paper, with the columns indicating groups of people who are affected by an issue and the rows designating potential solutions. With a time limit of 20 minutes, the participants collaborated in groups to write ideas on individual sticky notes that pertained to the people and solutions for each intersecting row and column, filling the grid as they worked (*Innovating for people*, 2012).

Each of these design thinking strategies can be used individually or in combination to elicit discussion. A total of three workshops were held, two with multidisciplinary groups of professionals, and a third with families consisting of parents and children between the ages of 8 and 12. At the first two workshops the participants

were assigned to work in two smaller groups of four or five people to collaborate in brainstorming, concept mapping or problem tree analysis, and prototyping, successfully generating a variety of solutions relating to the problem. The third workshop gave families an opportunity to brainstorm and prototype their own solutions to the problem, and then invited them to review and test the ideas from the first two workshops using a creative matrix. The results of this workshop determined a single solution to be further developed and prototyped, and all participants will be contacted and asked for feedback.

The questionnaire pretests and posttests were designed to gauge the attitude of each participant towards the Syrian refugee crisis, towards design thinking, and to record their levels of empathy for refugees (see Appendix E). The questions relating to empathy were developed from the Toronto Empathy Questionnaire (TEQ), a survey that has been found to be a reliable and valid instrument in the assessment of empathy (Spreng, McKinnon, Mar, & Levine, 2009). The same posttest and pretest questionnaires were given to all adults participating in the workshops, and a separate questionnaire was developed for the children in workshop three, also based on the TEQ. The adult pretests asked participants to rate a series of statements on a Likert scale of strongly agree to strongly disagree and also included two open-ended questions. The posttest repeated the same statements and open-ended questions to gauge whether or not the participant's attitudes had changed after the conclusion of the workshop, and asked two additional open-ended questions. The children in workshop three were also given pretest and posttest questionnaires consisting of eight statements to be rated on the Likert scale and two open-ended questions (see Appendix E). The pretest and posttest for the children were the same.

Procedure

Before the study began, Institutional Review Board approval was granted through Radford University's Research Compliance Office to protect the rights of the participants and ensure their safety ("Research compliance office," 2015). All participants were provided informed consent forms before the workshops took place, along with an outline of the workshop format and a questionnaire to be completed before the workshops began (see Appendix E). Further instructions and guidance were given during the workshops and participants were not expected to have prior experience in any of the methods used. The series of workshops was planned to cover all phases of the design thinking process to determine a final idea to benefit refugee children (see Table 1).

Steps in the Design	Workshops 1 & 2	Workshop 3	Post-workshop
Thinking Process	Design Thinking	Design Thinking	feedback from all
	Strategies &	Strategies &	participants
	Approaches	Approaches	
Empathize	Viewing videos and	Viewing videos and	
	discussion of the	discussion of the	
	lives of refugees and	lives of refugees and	
	of art therapy	of art therapy	
Define	Group discussion	Group discussion	
Ideate	Brainstorming and	Brainstorming	
	problem tree		
	analysis or		
	concept mapping		
Prototype	Prototype	Prototype	Final Prototype
Test		Creative matrix and	Individual testing of
		visualize the vote	final prototype and
			feedback

Table 1. Workshop series design thinking strategies

Workshop one was held in Salt Lake City, Utah, at Ellucian, a software development firm, and workshop two was held in Logan, Utah, at Utah State University, both following the same procedure. Twelve participants were invited to attend each of the first two workshops and were selected based on each person's unique knowledge and experience. Those in attendance included employees of the Utah State Refugee Services Office, one of whom was a former refugee from the Congo, volunteers with Americorps VISTA who work with refugees, architects, interior designers, user experience and graphic designers, members of the Islamic faith from different backgrounds, a therapist with experience working with adolescents, an early childhood educator, and a children's librarian. Participants in each group represented both the Islamic and Christian religions. Workshop one had a total of eight participants, and workshop two had ten people in attendance.

The first two workshops began by showing the participants video interviews with Syrian refugees explaining the difficulties of their lives compiled by the United Nation's Children's Emergency Fund (UNICEF) (UNICEFmena, 2013; UNICEF, 2013), and an example of art therapy being utilized among children in the Middle East who have experienced trauma due to political violence (Pelley, 2015). Following the videos, the researcher conducted a group discussion on the importance of art therapy to address the needs of refugee children. This video and discussion session lasted 30 minutes and included time for the participants to complete their pretest questionnaires before the videos began.

After the discussion, the participants were divided into smaller groups of four to five people. Each group worked together in a brainstorming exercise to generate as many ideas as possible, with a time limit of 20 minutes followed by 10 minutes of discussion to select the ideas each group felt were strongest. After brainstorming, the groups were given instructions for either the concept mapping or problem tree analysis design thinking

strategies, which were meant to elicit discussion and aid them in narrowing down their ideas to the ones that had the most potential. This strategy discussion was limited to 25 minutes. Each group then worked together to create a rapid prototype of at least one idea they felt might be successful using common craft and office supplies provided to them. The prototyping activity was originally scheduled to last 25 minutes, but in both workshops the groups asked for more time to complete their prototypes. Each group then quickly presented their prototyped idea to all workshop participants, explaining the benefits the prototype was expected to provide refugee children. This presentation phase of the workshop lasted 10 minutes. The entire workshop was planned to take a total of two hours to complete, but in both workshops the participants asked for more time to complete the prototyping phase. As a result workshop one and two each lasted approximately two and a half hours.

At the conclusion of the workshops the participants completed a final questionnaire. The resulting data consists of the answers to the questionnaires, a large number of ideas recorded on sticky notes during brainstorming, a visual representation of each group's ideas organized through a design thinking strategy, prototyped ideas developed by each group, audio recordings of the group discussions, and photos taken during the workshop and of the work.

A third workshop was held with a group of five families consisting of eight parents and nine children between the ages of eight and twelve. Due to the sensitive nature of the topic and the potential trauma it may create for children and families, former refugees or families that have experienced violence were not asked to participate. This

group of participants was given the opportunity to brainstorm and prototype ideas of their own and then provided feedback on the ideas generated in the previous two workshops.

To respect the time of the participants and the attention span of the children, each family was provided with the videos depicting Syrian refugees shown in the prior workshops ahead of time. This allowed parents the opportunity to watch the videos, to choose whether or not to allow their children to watch them, and to explain the problem in an age appropriate way. Parents exposed their children only to the aspects of the plight of refugee children they felt were suitable. They were also given the pretest questionnaire to be completed before arriving.

The workshop began with a 10-minute discussion explaining the purpose of the workshop and a general overview of the effect the Syrian crisis has had on refugee children. Each family then worked together to brainstorm ideas to help refugee children for 15 minutes, followed by an additional 15 minutes to prototype at least one idea the family thought might be beneficial. After the prototypes were complete each family presented their ideas to the others, and the researcher then presented the prototyped ideas from the prior workshops. These presentations were originally scheduled for 10 minutes but instead took 20 minutes. The families were then given a 10-minute break. After the break, the children were assigned randomly to three small groups, which were supervised by the parents. These new groups each chose two prototyped ideas and worked together to complete the design thinking strategy creative matrix, examining the positive and negative aspects and the potential of the ideas. This strategy session was meant to last 15 minutes but instead took 20 minutes. The groups then presented their findings to the others for a total of 10 minutes. After the presentations, all participants were given two

sticky notes, one each of two different colors, and asked to vote on their first and second choice of the prototyped idea that would best benefit refugee children using the visualize the vote procedure, which lasted five minutes. The workshop was scheduled to last 90 minutes but went overtime due to the additional time that was needed and a late start caused by inclement weather on the day of the workshop. The total time of the workshop was two hours. The families were told they could leave early if they chose, but none did.

At the conclusion of the workshop, the participants completed a final questionnaire before they left, and the collected data consisted of the same types as the previous workshops. The prototyped idea that received the most votes at the conclusion of the workshop will be further developed and prototyped by the researcher in consultation with an art therapist.

Results

Before any workshops were held, a pilot test was first conducted as a final evaluation of the design thinking strategies and the questionnaires, and to determine if the planned time for each step of the workshops was appropriate. The intent of the pilot test was to allow the researcher feedback to further refine the plans for the workshops, but due to the strength of the participation and the resulting ideas, the pilot test prototypes were presented to the families in workshop three alongside the prototypes from workshops one and two. The results of the pilot test are included in this manuscript alongside those of workshops one and two.

The Participants in the Pilot Test and Workshops One and Two

All participants for the study were purposively selected based on their individual knowledge and experience relating to either refugees or the design process. Organizations such as the Cache Refugee & Immigrant Connection, AmeriCorps VISTA, the Utah State Office of Refugee Services, and the Utah Art Therapy Association all provided valuable assistance and connections in locating participants. The design professionals were known to the researcher through involvement in the local design community. The participants in the pilot study were people known to the researcher from a variety of professional backgrounds and experience.

Participants for the pilot study did not have a connection to refugees and only two had a design background, though most work regularly with children in some way. Instead, they were chosen to test whether the workshop and the strategies could be understood and followed by people without a direct connection to the problem. Fictitious names have been used to insure the anonymity of the participants. This group included

Susan, who works in the health care field; Laura, who once owned and operated a design related retail business; Madison, a full time student; Mark, a small business owner; Charles, an elementary teacher with over 20 years of experience; Robert, a graphic designer who owned and operated a studio for 25 years; Edward, a scientist with a Ph.D.; Emily, a stay-at-home mother raising three young children; and Diane, an adjunct faculty member at a university in the department of Family and Consumer Sciences.

Workshop one, which was held in Salt Lake City, Utah, consisted of the following people: David is an employee of the Utah Office of Refugee Services and works to assist refugees relocating to Utah from a number of countries, has a background in industrial design, and had prior knowledge of design thinking. Imari is also an employee of the Utah Office of Refugee Services and is a former refugee from the Congo who travels back to Africa to teach art classes to children in refugee camps in Kenya. Kimberly is a user experience designer with a background in graphic design. Heather is a senior interior designer for an architecture firm and has held leadership positions in the professional design community. Amanda is also an interior designer working for an architecture firm who spent the previous summer volunteering with a humanitarian organization in an orphanage in Costa Rica. Eric is a graphic and user experience designer who manages a team for a software development firm. Hana is a user experience designer with a background in graphic design. Ahmad is a lawyer. Hana and Ahmad are members of the Islamic faith with an interest in assisting refugee children from the Middle East. Participants Heather, Amanda, and Eric are Christians who are active in their local congregations. The religious backgrounds of the other participants are not known. Significant efforts were made to include members of the art therapy community in the

workshop, including moving the workshop to a more convenient location, but none were able to attend.

Workshop two, held in Logan, Utah, consisted of the following people: Jacqueline is an early childhood educator who has run her own preschool for many years. Anna is an interior designer and mother of three young children. Scott is an architect and a senior lecturer for an interior design program at a state university. James is a former principal architect for a large regional architecture firm who spent the last year teaching at a university in Jordan located 100 km from the Zaatari refugee camp. Juliana is a coordinator with AmeriCorps VISTA who works with refugees in the community from a number of countries. Christopher is an outreach volunteer assisting teenage refugees in the community and also has a background in music. Malik is a graduate student in international development who has spent time in the Middle East, most recently Jordan. Khalil is a scientist with a Ph.D. who is originally from Lebanon, one of the countries hosting Syrian refugees, and travelled there two weeks before the workshop. Kayla is a marriage and family therapist working with at risk adolescents in the community. Rebecca is a retired children's librarian and volunteers to teach children at her church. Malik is a member of the Islamic faith and Khalil was raised as a Muslim. Both regularly spend time in the Middle East. Scott, James, Kayla, and Rebecca are Christians who are active in their congregations. The religious background of the other participants is not known.

Design Thinking Steps in the Pilot Test and Workshops One and Two

The design thinking process consists of five steps: empathize, define, ideate, prototype, and test. The pilot test and workshops one and two were designed to briefly

touch on the steps of empathize and define, and to focus on ideate and prototype in more detail. The final step of testing was covered in workshop three. The purpose of the workshops was to answer the first research question, "How might people who are not refugees themselves use design thinking strategies to help refugee children?" The second research question, "How does participating in a design thinking workshop build empathy for those in need?," was examined through the answers given on the pretest and posttest questionnaires.

The workshops began with a series of videos that were shown to the participants to introduce them to the lives of Syrian refugees (see Appendix D for scripts of all workshop instructions given). The first video, "Meet One of the Syrian Refugee Children," introduces Aya, an eight-year-old girl who is living in a tent with her parents and her six siblings in Lebanon. Aya loves to learn and shares what her life was like in Syria before her home was bombed and her family was forced to flee. She hasn't been able to attend school in two years, instead helping to take care of her disabled sister, and dreams of returning to Syria so she can resume her studies and one day become a doctor. The video shows the conditions refugee children like Aya live in, pointing out that many are forced to engage in child labor or marry when they are young to survive (2013). The second video, "A young Syrian Girl's Life as a Refugee," (2013) shows life for Hanadi, a 17-year-old girl in the refugee camp Zaatari, in Jordan. Daily life and the bleak conditions of the camp are shown, but Hanadi expresses gratitude for the opportunity to attend school and make new friends. The video shows the communal kitchens the refugees use and the caravans they live in. Hanadi's parents worry the children have nothing to do, but a few of the opportunities available, like soccer and vocational classes

provided at the camp are shown (2013). Both of these videos were produced and released by UNICEF.

A third video, "The Lesson of War," is a story that aired on the news program 60 *Minutes* which profiles of the work of Dr. Jim Gordon, an American psychiatrist and director of the Center for Mind-Body Medicine. He works with both Israeli and Palestinian children who were affected by political violence similar to that experienced by Syrian refugees and uses art therapy to help them express their fears. In the video, one young Palestinian girl named Azar shows pictures she drew under Dr. Gordon's supervision over a three-week period. Her first pictures were of the destruction she experienced and she told of the day her home was bombed and how her father and two of her uncles were killed. Next she drew herself in a grave as a martyr. After completing the course of art therapy, Azar shows pictures of a hopeful future and expresses a desire to become a heart doctor so she can help people (Pelley, 2013).

These three videos gave the participants a glimpse into the lives of Syrian refugees and an example of how art therapy can be used to help children in similar circumstances heal from trauma. Viewing these videos covered the design thinking step of empathize, and the step of define consisted of a discussion with the participants. The researcher presented the facts regarding the situation Syrian refugees live in and the participants asked questions relating to their understanding of the situation. This discussion helped define the parameters of the problem and the expectations of their work in the proceeding steps.

The majority of the workshop time was devoted to the step of ideate. In this step of the design thinking process, participants generate a number of ideas that can be used to

address the problem. The first strategy used in this step, brainstorming, focused on identifying a large quantity of ideas without regard to their quality. A second strategy, either concept mapping or problem tree analysis, was then used by the groups to analyze the ideas and begin to make judgments as to their value. The pilot test group also completed a third strategy, bull's-eye diagramming. The groups began the workshop without any predefined ideas. By utilizing the strategies, they worked together to first produce a large quantity of ideas very quickly, and then analyzed and refined those ideas into one or two they deemed to have the greatest potential for success. The completion of the strategies also produced a document for each group demonstrating the thought process and why the participants judged those ideas to be of greatest value.

With a final idea identified by the groups, they then moved on to the prototyping phase of the design thinking process. In prototyping, the idea is developed into a physical representation, allowing the participants to interact with the concept in a new way and further identify its strengths and weaknesses. Prototypes allow for greater feedback because the idea is often easier to understand as a physical form and suggestions can be better articulated when a representation of the idea can be seen and held. Due to time constraints, the pilot test and workshops one and two ended with the prototyping phase, but workshop three began the process of testing all ideas from the prior workshops to arrive at a final solution.

Group Work in the Pilot Test and Workshops One and Two

Pilot test. At the conclusion of the empathize and define steps in the design thinking process, the participants in all workshops were divided into smaller groups to continue into ideation. Due to the informal nature of the pilot test, the participants were

allowed to choose one of three groups. Susan, Laura, and Madison formed group A; Mark, Emily, and Diane formed group B; and Charles, Robert, and Edward formed group C. Brainstorming began as the participants were each given a pad of sticky notes and instructed to write down a different idea to benefit refugee children and inspired by the use of art therapy on each note. The group work began with a pattern that would emerge in all of the workshops. Participants were hesitant to write down ideas at first and even though they were told to work together the groups were silent. It took a few moments of concentration before the first ideas were written down and tentatively shared. After the first minutes of the exercise only a few ideas were placed down on the poster board.

To help break the ice and create a greater feeling of freedom, the participants were asked to each write down their worst idea, an idea they had dismissed in their minds as inappropriate and was never written down. This succeeded in jumpstarting conversations as participants either wrote down something wildly inappropriate or confessed they had already done so. With this barrier of perceived failure now broken, the participants began adding more ideas until each group had a collection ready to evaluate. This prompted further discussion in each group and the participants were challenged to write down any new ideas they had based on this conversation.

Each group was then assigned a different design thinking strategy as a tool to evaluate their ideas. In brainstorming, the focus was on identifying a large quantity of ideas without regard to quality. Now the groups used these strategies to evaluate the ideas and make judgments as to their value. Group A was assigned the bull's-eye diagram, Group B the problem tree analysis, and Group C the concept diagram (see Appendix C). The groups were given the supplies and written instructions for each strategy, and the

researcher circulated through the groups explaining the strategies and providing guidance when needed. The bull's-eye diagram and concept map proved to be the most intuitive for the groups. Both of these strategies provided a way of organizing the ideas that was natural for the participants and the groups were able to sort through their pools of ideas quickly using each of these strategies. The problem tree analysis was more complex, as it required the group to first identify a series of causes and effects related to the concept statement, "The well-being of refugee children is impacted by war." After defining a series of causes and effects the group then sorted through their ideas and identified the ones that would impact either a cause or effect of the problem. It took longer for Group B to complete this strategy than the others, but the problem tree analysis led to a richer discussion that directly impacted the solution they later proposed.

Group A completed the bull's-eye diagram and began by sorting all of their ideas into piles of similar concepts. They labeled each grouping and placed the entire pile on the bull's-eye to rank their importance, with the most important ideas in the center and the least important ideas further out (



Figure 7). The piles were given the titles of "fundraising," "classes," "donated," and "government." The ideas identified as inappropriate were placed outside of the bull'seye. The "fundraising" category included ideas like helping children to run lemonade stands and bake sales, growing and selling pumpkins, and organizing yard sales to raise money for refugees. The "donated" group listed items the participants felt refugees might need, including clothing, flashlights and lanterns, gardening supplies, toys, art and school supplies, and household items. Also included were ideas to compile care packages with outdoor play equipment for children, and having schools organize donation drives for refugees. The "classes" category included activities the group thought refugees might like to learn, like music, cooking and sewing, gardening, and classes on entrepreneurship. This category also had ideas in which refugees would be sent art and craft supplies so that
they could make artwork or goods like woven cloth or dolls. The items could then be sold around the world to make money for the refugees.



Figure 7. Pilot test Group A's bull's-eye diagram.

These groupings of ideas were all identified as being important and were placed in the middle ring of the bull's-eye below the most important ring. The ideas the group identified as most important and placed in the center of the diagram fell under the heading of "government." The main sticky note in this category read, "Develop an internal government of youth for camps. Youth are elected to solve problems, organize, etc." Additional notes described this idea as functioning like a high school student council to allow children to form whatever clubs or groups they felt would best meet their needs, and run them under central leadership. The group felt this one concept could encompass most of the other ideas they placed on the bull's-eye diagram and chose this as their idea for prototyping.

The brainstorming session completed by Group B resulted in what one of their sticky notes identified as, "exploring ideas to bring peace to [refugees'] lives and focus outside themselves." Notes were filled with ideas such as "making crafts," "learning languages," "music therapy," "animal therapy," "designing schools with intentions of allowing children's input," and "use the desert to create aerial designs based on peaceful themes." Another category of ideas covered practical considerations to improve the lives of refugees, including "find the water table," "solar for generating electricity," and "teach them vocational skills."

To begin the problem tree analysis, the group was presented with the concept statement, "The well-being of refugee children is impacted by war." They were asked to identify the cause and effects surrounding the issue and labeled the roots of the tree with the causes and the branches of the tree with the effects (Figure 8). The causes they listed included, "mistrust," "injury," "fear," "witnessing death," and "loss of shelter." The effects the group identified were, "lack of security," "loss of imagination," "no hope," "no compassion," and "no confidence." After these issues were written down, they sorted through their ideas from brainstorming and placed them next to the effects they thought each idea could address. "Loss of imagination," "no hope," and "no compassion," were paired with three ideas to address them all. On one note was written "Music/Drama: Provide basic rhythm instruments . . . Create short operas/dramas." Another said, "writing to express feelings," and a third had, "Photography: assign children topics and themes."



Figure 8. Pilot test Group B's problem tree analysis.

The group focused on these three ideas and their conversation entailed ways these creative outlets could be combined with an "objective" they wrote under the effect "lack of tolerance." This idea was "teach them games to teach good principles." With this in

mind they developed a plan in which children could write and perform their own opera that would express the positive value of compassion as an outlet to allow them to express their feelings and find a vision of a positive outcome. The group further developed this idea through a prototype.

Group C was assigned the concept map strategy, an exercise they found to be intuitive. The concept map began with organizing the ideas from brainstorming into clusters of similar concepts (Figure 9). The clusters the group identified were "theater arts," "creative art," "healing," "creative inventions," "education," and "survival." Each of these clusters was then linked together with words that described their relationships. "Theater arts" was linked to "creative arts" with the word "expression," which was then linked to "creative inventions" with "creative thinking." "Survival" and "education" were linked with each other, and "creative inventions" with the word "empowerment." Each cluster consisted of individual ideas like "role play/fantasy play" under "theater arts," "fairy houses" and "gardens" under "creative art," and "stuffed animals, comfort" under "survival." This discussion led to the group identifying a "pop-up garden" as the idea they chose to prototype. This idea would fall under the categories of "creative art," "creative inventions," and "survival." The group felt this garden could provide therapeutic benefits similar to art therapy while also providing for a refugee's basic needs and teaching valuable vocational skills.



Figure 9. Pilot test Group C's concept map.

As a result of this pilot test, two changes were made to the format of workshops one and two. First, the number of groups was reduced to two to allow four to five people in each group, rather than the smaller number of three. This was done so that participants, especially those who did not know one another prior to the workshop, would feel less pressure to perform during the brainstorming and strategy portions of the workshop. It was observed that the smaller the group the greater the pressure to perform, and larger groups were more comfortable at the beginning of ideation. A second change is that the bull's-eye diagram was eliminated as a strategy because it proved to be too simple and provided less opportunity for conversation than the other strategies.

Workshop one. Workshops one and two proceeded with the participants organized into two groups. These groups were assigned before the workshops based on the expertise and experience of each participant to create a greater diversity of opinions. Wherever possible, participants with similar backgrounds were placed in different groups. In workshop one, Group A consisted of David, the refugee office employee; Kimberly, the user experience designer; Amanda, an interior designer and a Christian; and Eric, the graphic designer and a Christian. This group completed the concept map. Group B included Imari, the former refugee; Heather, an interior designer and a Christian; Hana, a user experience designer and a Muslim; and Ahmad, a lawyer and a Muslim. It would have been preferable for participants Hana and Ahmad to be in different groups, but they are married and brought their children to the workshop. As a result they needed to trade off their work with the group to tend to the children and were not always able to work at the same time. Putting them in the same group made it easier for the work to progress without interruption. This group completed the problem tree analysis.

The groups began with the same brainstorming exercise as the pilot group and were given sticky notes to write their ideas on. As in the pilot study, the groups began quietly, writing tentatively and sharing ideas only after they had several and could present the best ones. The participants were encouraged to write down ideas without judging the quality and to include their worst ideas. Gradually the groups gained confidence and began to discuss the ideas as they shared them. At the end of brainstorming, each group had a large number of ideas to evaluate.

Group A worked together to analyze their ideas by organizing them into a concept map (Figure 10). The concept map strategy is intuitive and the group began sorting their ideas before they were given instructions. They identified clusters titled "Identity/Home/Culture," "Connection," "Arts," "Education," and "Themes." The "Identity" group centered on maintaining connections and identity in a new home, "Arts" listed different art activities, and "Education" included the skills refugees would need in a new home. The cluster "Connection" contained the group's ideas about a refugee's relationship with the outside world, and the "Themes" grouping included ways to enhance a refugee's quality of life. Each of these clusters was connected to one another with both linking verbs and specific ideas to create relationships. The clusters "Education" and "Connection" were tied together with "personal growth," and "Arts" was linked with "Connection" by the verb "sharing" and by the idea of a "picture book of other refugee exp." The word "culinary" in the "Arts" cluster was linked to "Identity" with the phrase "family recipes" and to the "Themes" cluster with the idea, "selling recipes and cultural stories."



Figure 10. Workshop One, Group A's concept map.

The richness of this concept map was driven by the group's discussion of the lives of refugees and the impact they imagined the war had on them. The group personalized these experiences and worked to imagine a scenario in which the world reached out to a refugee to provide assistance. The idea they identified for prototyping involved the establishment of a long-term mentoring relationship between refugees and experts around the world in any subject the refugees are interested in.

After the completion of brainstorming, Group B worked through a problem tree analysis around the same concept statement as the pilot group to develop their list of causes and effects (Figure 11). The causes they identified that may impact the well-being

of refugee children through war include "prejudices," "class struggles," "power struggles," "Corrupt gov't" "economic crises," "political change" and "historical conflicts." The effects they identified included both physical and emotional impacts, including "lack of education," "lack of shelter," "lack of food/water," "poverty," "trouble sleeping," "lost friendships," "family deaths," and "afraid." Through the discussion of these effects, the group identified which of their brainstorming ideas would address these issues. "Sales of art: paintings, crafts, sculpture, writing books (Etsy)" was placed next to "poverty." "Community garden" was placed next to "lack of food/water," and "(solar powered) have a lamp for night-light" was included with "trouble sleeping." The discussion of the problem tree directly influenced the group's ideas, leading them to discard ideas that did not fit into the tree and to prioritize the ideas that addressed the effects. Through this discussion, the group identified the two ideas they went on to prototype, a solar-powered night-light for children, and a way in which refugees could produce and sell their own artwork on websites or through art galleries as a way of earning an income.



Figure 11. Workshop One, Group B's problem tree analysis.

Workshop two. In workshop two, Group A also completed the concept map and Group B the problem tree analysis. Group A consisted of Anna, the interior designer,

James, the architect and Christian, Christopher, the volunteer who works with refugees and has a background in music, Malik, the graduate student and a Muslim, and Kayla, the marriage and family therapist and a Christian.

The participants in Group A all wrote down a number of ideas to help refugee children during the brainstorming session and shared them with each other without prompting. This group was the least tentative of all of the groups in the workshops. As they made the transition into the concept mapping strategy, they had already sorted their ideas into clusters before they were instructed to do so (Figure 12). For all groups who completed the concept map, the sorting of ideas proved to be intuitive and the groups naturally did this without prompting. The clusters the group identified were, "physical needs," "ideas," "emotional needs," "creative play," "toys," and a final cluster which was not labeled but included the notes, "find a way to serve others," and "big sister, big brother programs." With these clusters complete, the group was well into their discussion of ideas when they were asked to link the ideas with a connecting word to describe their relationship. The group wrote a few connecting words, with "play" linking "toys" to "creative play," "value" connecting "creative play" with "emotional needs," and "mentoring" and "education" written on the line between "creative play" and the unlabeled cluster. The group made no more effort to find additional links, as they felt they had already completed the concept map.





of the concept map the architect drew a grid and next to it a series of circles that were each labeled with an additional cluster of concepts. These were "creating tribe/social unit," "role play, acting, playing music," "caring, pets, garden," and "building, toys, environment." These clusters directly influenced the group as they decided on an idea to prototype. They later redesigned the layout of a refugee camp to create a new community structure based on their clusters, incorporating the ideas into spaces that would support concepts like physical needs, emotional needs, and creative play.

Group B in workshop two was comprised of participants Jacqueline, the early childhood educator; Scott, the architect and teacher, and a Christian; Juliana, the AmericorpVISTA volunteer; Khalil, the scientist who was raised a Muslim; and Rebecca, the children's librarian, and a Christian. Once each person had written down a number of ideas in the brainstorming session, they arranged them on a large sheet of poster board and shared them with each other without consolidating the ideas. These notes included, "something to take care of," "pieces of their past – memorabilia, photos, etc." "a chance for making new, happy memories," "culture," "music," "writing stories," "involvement in community," "leadership roles," "learning about other children from other cultures," "learning from other children and how they have solved problems," "brainstorm about goals they would like to have happen," "games where they can share their common experience," and "fun packs."

The problem tree analysis allowed the group to work together more closely to identify the causes and effects of war on the well-being of refugee children, using the same concept statement as the previous workshops (Figure 13). They identified the following as causes, "lost family, hatred, intolerance, lost homes, lack of shelter, security,

fear, trained to be soldiers, unemployment, unsanitary conditions, overcrowding, despair, lost innocence, lost possessions, disease, powerless." Several of these concepts, like "despair," "fear," "hated," "unemployment," "lost innocence," and "disease" were also written at the top of the tree as the effects of the war on the well-being of children. To these were added, "quest for power," "extremism," "hopelessness," "no relief from elements," "idleness," and "no income." Once these causes and effects were identified, the group was asked to look through their brainstormed ideas and move them to the roots or branches on the tree that they might address. To the "lack of education" branch the group placed "books, reading books together," "placement programs," and "portable schools." The notes "education" and "training programs" were added to the "hatred" and "unemployment" branches, and "fun/silliness" and "writing family stories" was added to "lost innocence." The branch "no relief from elements" had practical considerations like shelters and appropriate clothing, and the "idleness" branch had "board games" and "productive parents" placed nearby.



Figure 13. Workshop 2, Group B's problem tree analysis.

The completion of the problem tree led to a rich discussion by the group that encompassed both the causes and effects of the problem, as well as each participant's vision of what could be accomplished to change the circumstances for refugees. The idea they decided to explore further during prototyping was a plan similar to foreign-exchange students programs in which refugee children or their entire families could be sponsored by a family in a host country and brought to the new country to live until the war ends and they can return to their lives in Syria.

Prototyped Ideas of the Pilot Test and Workshops One and Two

Pilot test. The bull's-eye diagram of Group A in the pilot test led to the development of a Syrian Refugee Youth Council, an organization for children living in refugee camps to teach leadership skills and provide a framework for the development of a series of clubs for topics that interest the children. The prototype of this idea was a representation of the children in the club made from modeling clay along with a club flag, a mission statement, and a constitution to establish the rules and the leadership positions (Figure 14). This idea would serve a similar function to a student body organization in American schools that would hold elections for children and give them the authority and resources to organize a series of clubs they felt would meet their needs. This could include clubs for science, cooking, art, entrepreneurship, sewing, gardening, sports, and music. The mission statement written by this group was, "Syrian Refugee Youth Council: Organize the youth to create opportunities for service, for problem solving, activity creation, community pride, and gain a sense of personal achievement." If this idea were further developed and delivered to a refugee camp, the final product would include written instructions for forming and running the organization. The group's intention is for this to become a framework that could be adapted to the individual needs of the children who use it, rather than be a prescriptive plan that must be followed exactly. While not directly incorporating art therapy, this idea provides a larger structure under which a

variety of art therapy techniques could be introduced to refugee children in the form of an art club (see Appendix D for specific instructions given during the workshop).



Figure 14. Pilot test Group A's prototype of a refugee youth council. Group B in the pilot test developed a final idea for prototyping from their discussion as they completed the problem tree analysis. They identified both the cause and the effect of many problems of war coming from a lack of compassion for the needs of others and developed a plan for an opera or another culturally relevant performance art that could be composed and performed by refugee children around the theme of caring for one another (Figure 15). Titled "The Compassionate Opera," the idea would provide instructions for a plan in which children would meet together under supervision "to develop love, understanding, and compassion for others," to "focus away from themselves," and to "loose themselves in concern for others." Songs could be written for children to perform as they tell a story and children would then act, sing, write, sew costumes, or paint scenery based on their talents and interests. Performing this story would help them act out a scenario of hope and give them an outlet to express their fears and anxieties in a healthy way. The group felt a traditional prototype was not possible in the time limit of the workshop so they focused on creating a flow chart of the idea and the steps children would take as they developed their opera. This idea incorporates a number of elements of art therapy and the plan for implementation could be done under the direction of an art therapist to maximize its benefits for children.

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Figure 15. Pilot test Group B's prototyped plan for a children's opera.

The pilot test's Group C completed the concept map strategy and built a prototype of a "pop-up garden" that could be produced and delivered to refugees to grow their own produce (Figure 16). The garden kit would be four feet square and constructed out of a hard plastic structure that would fold flat to ship. The kit would also include tools like a rake and shovel, seeds, a bag of vermiculite or other supplies for amending the soil, a PVC pipe frame to construct walls and a roof, and plastic to cover the frame to create a greenhouse. The group recommends a plant scientist familiar with the areas refugees live in be involved to prepare the supplies and include anything needed to mix with the local topsoil to provide optimal growing conditions for plants. The garden kit would be delivered to a refugee family who would construct it and use it to grow food. While not a traditional form of art therapy, the group felt growing a garden would provide similar therapeutic benefits, citing the relaxation and well-being they experience while working in their own gardens. They also felt the added benefit of growing food and learning practical skills were important considerations.



Figure 16. Pilot test Group C prototype of a pop-up garden kit.

After the three groups shared their ideas with each other the comments all revolved around how well they felt the ideas complemented one another. They wanted to then combine them all, having the youth council act as an organizing body that could run the opera through a drama club as well as distribute pop-up gardens to families.

Workshop one. The prototype for Group A involved a mission statement, a flow chart of relationships, and a written narrative of a fictional Syrian refugee and the impact the solution might have on her life (Figure 17). The mission statement of their organization is to:

- create access to a real, tangible resource to provide the tools of self-sufficiency (online).
- operates on the individual expertise and compassion of the mentor.
- an interchange of ideas; pipeline back and forth.

The establishment of this type of relationship between refugees and experts in other countries would use existing websites like Kiva and Kickstarter to raise money, Craigslist to find mentors with specific expertise, and Quora to share knowledge. This structure would create a reciprocating relationship between refugees and mentors to "give back," and "pay forward."

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Figure 17. Workshop One, Group A's prototyped plan of a mentoring program for refugees.

A narrative written by the group identifies the effects of their idea on a refugee and explains the function of their fictional organization called "Triforce."

Khadija is a 15-year-old Syrian refugee that lives in Zaatari, a camp that experiences frequent power outages and inconsistent electricity. She speaks English and knows how to make a mean falafel that she learned from her grandmother. She has a basic knowledge of electronics and understands that solar energy can help. She knows that the International Rescue Committee (IRC) collects proposals for this freaking awesome service called Triforce that connects knowledge and needs to resources. She writes a request asking for someone with knowledge of electrical engineering and solar energy. IRC submits the concept to the Triforce site and it is matched with someone who is committed to help in some way (financial, education, mentorship, advice, supplies, etc.). A match is identified and contact is made with someone. Either directly through the internet or through the IRC. They are lined up with a sponsor who helps them find the right mentors that help create a system of help. The sponsor helps draft a plan to get in touch with the right people/companies.

This idea can be tailored to include the use of art therapy in addition to mentorship. Through this framework, a refugee child could work directly with an art therapist in another part of the world, along with a mentor.

Group B decided to prototype two ideas that grew from their problem tree analysis. First was a solar-powered night-light inspired by the "trouble sleeping" branch on their tree (Figure 18). The solar-powered lights would collect energy during the day to provide light for children at night, helping to ease their fears in the dark. The light would also symbolize hope for the future, letting children know that they would never be without light in the darkness.



Figure 18. Workshop One, Group B's prototype of a solar-powered night-light.

The second idea was a concept similar to Group A's in which existing websites could be used to connect refugees with the outside world in an "art-sharing program." As a prototype, Group B defined the steps it would take to implement the program (Figure 19). The group explained they would need to begin with finding a sponsor to donate the start-up costs and to supply art materials to refugees. Once the refugees used the supplies to create art of their choosing, the artwork would be collected and sent to partnering countries where they would be displayed in galleries and on websites to be sold. The money would then be returned to the refugees as a source of income. Art created as a specific method of therapy was not included in this idea but the refugees who participate could experience the indirect therapeutic benefits of art creation.

ART SHARING PROGRAM Dsupplying art moterials to refigees 3 collecting art from retugees @ finding gellerieg + webs Has, to show artwork rsel () returning funds to help refugers

Figure 19. Workshop One, Group B's development of an art-sharing program.

Workshop two. In workshop two, the participants of Group A redesigned the refugee camp and tried different methods of prototyping their idea. They first attempted to build a model of the community, but due to the time constraints they instead drew and labeled a plan (Figure 20). They titled their idea "Create a 'Village' (Tribal Structure)" and planned out a community around a central village square. This framework would build a culture of empowerment for refugees, centering a group of 40 to 50 families in a cluster to create a feeling of normalcy and identity. The central village square would be surrounded on each side by one of four community zones devoted to music and art, drama, gardens, or a community building. The drama zone they saw as an outlet for helping children deal with their emotions, and to resolve conflicts and build trust. The garden zone was labeled "caring" where children could learn to care for plants and animals, and for each other, "by sharing and mutual support." The music and art zone would aid children in imaginative play in which they could express their feeling and create heroes to reflect their identity, and the building zone would allow a place for community gatherings. Housing zones would be located around the central square between each of these zones, and a physical barrier to provide both protection and identity would surround the entire village. This idea would provide a physical space that could be devoted to art therapy, within a larger village that would provide a holistic structure in which refugee families could thrive.



Figure 20. Workshop two, Group A's plan for a refugee village.

The idea chosen by Group B to prototype was an exchange program that would send refugee children to live with host families for the duration of the war. The group developed their idea further by writing a concept statement and considering the steps for implementation (Figure 21). Their statement began with, "Develop a program similar to foreign exchange student program where Syrian refugee school age children live with host families in non-combative countries throughout the world." The group expressed their desires to help children by inviting them into their own homes to live until it was safe for them to return home to Syria. It was hoped this idea would build understanding between cultures and allow refugees to experience life in another country as a way to keep them from being recruited by a terrorist organization. The group saw this plan as a way of addressing many of the causes and effects of war on the well-being of refugee children by giving children a safe place to live until the conflict has ended.

DEVELOPE A FROMAN SIMILAR TO FORIEGN EXCHANGE STUDENT PROGRAM WHERE SYRIAN REFUGEE SCHOOL HOTE CHILDREN LIVE WITH HOST FAMILIES IN NON-COMBATIVE LOUNTRIES THROUGH DUT WORLD. IMPLENTATION WOULD REQUIRE SPINSORS SUCH AS UNICEF, RELIGIONS ORGANIZATION & PROFESSIONAL ORGANIZATIONS PROTICI POINTS WALLS BE RECRUTED BY UNICE F& OR OTHER GROUPSGERVING IN HOST COUNTRIES PARTICIPATION WORLD BE VOCUNITARY WE EDECOMEND CULTURAL SENSITY TRAINING FOR HOST & Refugee FAMILIES. PERCEMENTS WOULD BE MONITERED For incompatibilities.

Figure 21. Workshop Two Group B's plan for a refugee exchange program.

The exchange program would be implemented through existing aid organizations in the Middle East like UNICEF and would recruit families in host countries through religious and professional organizations. Both host families and the refugees would receive cultural sensitivity training to help bring about greater understanding. This idea does not address the use of art therapy, but instead incorporates the more pressing needs of safety and security for refugee children.

Workshop Three

The participants in workshop three. Workshop three was held in Logan, Utah, at the same location as workshop two. The participants in this workshop were all known to the researcher and consisted of five families, parents and their children between the

ages of 8 and 12. The families agreed to participate, but not all family members were able to attend on the day of the workshop. The names of the family members have been changed to protect their anonymity. Family one consisted of two parents, Jeremy and Courtney, Tyler, a twelve-year-old boy, and Brooklyn, a nine-year old girl. Family two was Julia, a mother, and Sean, her ten-year-old son. Family three was Maria, a mother, with Jenna, her 11-year-old daughter, and Austin, her eight-year-old son. Family four was Andrew and Allison, with Noah, their 12-year-old son, and Mary, their eight-year-old son, and Aaron, a ten-year-old son. All families were members of the Christian faith. Families who are Muslim were invited to attend but declined to participate.

Design thinking steps in workshop three. Workshop three was designed to more fully follow the design thinking process (Figure 6). Workshops one and two completed the steps of empathize, define, ideate, and prototype, but did not attempt to test any of the ideas. Workshop three covered all design thinking phases, adding the step of test to evaluate the ideas after the completion of the prototypes.

Before the workshop began, the parents were sent links to the videos of refugees shown in workshops one and two and asked to watch them with their children. Doing this shortened the time needed for the workshop and allowed the parents to control what aspects of the Syrian refugee crisis to which their children were exposed. These videos and the discussion the parents had with their children were intended to cover the empathize and define steps of the design thinking process, though it is not known how each family approached the topic. The define step continued at the beginning of the workshop as the researcher gave the families an overview of the refugee crisis and

addressed the importance of art therapy and of finding ways to help children affected by the crisis.

After this discussion, the families worked together to brainstorm possible ideas to help refugee children. Each family was given a sheet of poster board and colored markers and asked to write down all of their ideas on the poster. This brainstorming session made up the ideate step in the design thinking process, and at the conclusion of this brainstorming, the families were asked to choose their best ideas for prototyping. Each family then built a prototype of at least one idea and presented it to the other families. All of the prototyped ideas from the previous workshops were also presented to the families at this time. The participants then moved on to the final testing phase of the process. The children were randomly divided into three groups and accompanied by a parent for the final strategy session. Each of the three groups then chose any two of the prototyped ideas presented to them and evaluated each of the ideas by completing a creative matrix. At the completion of the matrix, the groups shared their results with the others and all participants were then given the opportunity to vote for their first and second choice of ideas using the method visualize the vote. This voting concluded the workshop and resulted in the selection of one idea to be further developed and implemented.

Group brainstorming in workshop three. After the initial opening discussion, the participants worked together as families at individual tables to complete the brainstorming activity. This brainstorming followed the same procedure as workshops one and two, and the only difference was that the families were given a sheet of poster board to write their ideas on instead of sticky notes. This was done to enhance the collaboration between the family members, to provide more freedom in expressing ideas

through sketching, and to allow the parents to provide assistance to their children when needed.

Family one sat around their table and each person began writing individual ideas on the poster board (Figure 22). Looking at the poster, it appears the family members worked separately throughout the brainstorming session, but they shared and discussed the ideas verbally before writing them down. For example, Courtney wrote, "crafts from nature," Tyler wrote, "help teach them to make crafts out of materials from the environment," and Brooklyn wrote, "make rattles out of only nature supplies." The family members also individually wrote down variations of the idea to make games out of wood and have them shipped to refugees after discussing the idea together. The verbal component of their brainstorming was not fully recorded on the poster and their process was more collaborative than the poster appears. This group also focused on the practical ideas they felt were possible to implement. At the end of brainstorming, they selected three ideas and the parents and each of the children continued to develop a separate idea in prototyping, though the three ideas complement each other well. The parents outlined instructions for making and assembling a game board and a bag to keep it in, while Tyler wrote instructions for a "weed bracelet" craft activity made from natural materials and Brooklyn prototyped crafts that could be made from simple supplies like chenille stems.



Figure 22. Brainstorming results of Family One.

Family two approached brainstorming in a different way, with Sean taking the lead and completing a mind map with Julia (the other family members were unable to attend the workshop) (Figure 23). This mind map was created without instruction or influence from the researcher. The mind map began with practical needs clustered together, like food and first aid kits, and then grew into sports equipment and craft supplies refugees would need for various games and activities, which were also listed on the map. The center of the mind map contains the idea the family later built as a prototype; a way to deliver supplies to refugees in areas that aid organizations can't reach. A sketch of a wooden crate was drawn on the poster along with the supplies needed to fill it, including clothes, toys, and food. The map notes that donations would be

solicited through churches and on social media, and the filled crates could be delivered to the military. These crates would then be loaded onto military planes with a parachute attached, and the crates could be dropped from the air over refugee communities to deliver the supplies.



Figure 23. Brainstorming results of Family Two.

The brainstorming results from family three shows another approach to the activity. This family initially focused on drawing pictures to represent their ideas that were later labeled with words, rather than exploring ideas through words and then drawing supporting pictures (Figure 24). The discussion of this family focused on activities the children found fun and they drew pictures of games and activities, including a paint set, sports equipment, and icons to represent singing and dancing. One idea,

"paper boats," described an origami project to fold boats out of paper. The parent in this family, Maria, wrote down words rather than drawing pictures, but her ideas were in line with her children's contributions. This graphic approach was also reflected in the idea they choose to prototype, a coloring book to be drawn by children in the United States that could be sent to refugee children from Syria.



Figure 24. Brainstorming results of Family Three.

Family four completed the brainstorming in a way that appeared to be most collaborative on the poster board (Figure 25). This family began by establishing areas on the poster devoted to different clusters of activities and labeled these "games," "art," "education," and "music." The family members then wrote down ideas around each of these clusters and worked together to establish a pool of phrases that described their ideas. The "games" cluster included individual games that needed few supplies to play, like "hide/seek," "tag," "red rover," "banana dance," and "lava." The "art" cluster contained "crochet," "knitting," and "start a club." The "education" cluster had "gardening," "cooking," "choir," and "explore in nature." The "music" cluster contained "homemade music," and "whistling." The family then discussed the ideas and decided on detailing a game they called "lava" to prototype.



Figure 25. Brainstorming results of Family Four.

Family five discussed the problem and wrote their individual ideas down in clusters, with a cluster defining ideas for each person on a different portion of the poster board (Figure 26). One child wrote down, "I like playing with friends!!!!" and then surrounded this statement with words like "hikeing!!!," "toys!!!," "chess!!!," and

"football!!!" Another child wrote "personal hygiene," "clothing," "kites," and "bikes." While not writing the idea down in more detail, the family discussed ways bikes could be donated, repaired, and delivered to refugee children. Christine, the mother, titled a cluster of ideas "book collection" and added "collect all different kids books," "learning materials," "school supplies," and "art supplies." The words "school collection," and "art collection" were written in one corner and then circled. This is the final idea the family chose to prototype, a school kit full of books and supplies to be delivered to refugee children.



Figure 26. Brainstorming results of Family Five.

Prototyped ideas of workshop three. At the conclusion of the brainstorming session, each family had an idea they selected to prototype, with one family choosing to

further develop three ideas. The parents of family one wrote out detailed instructions to create a game bag filled with a game of Chinese checkers and homemade salt dough clay. Since the bag would contain an existing game familiar to the other families, rather than one they created themselves, the family didn't feel the need to prototype a game board and instead made a list of detailed instructions to accomplish the idea (Figure 27). The instructions include a list of the supplies that would be needed to construct the game bags and the steps volunteers would take to create them. The result is a clear and practical plan for implementation.

Jame bags of chinese checkers + playdaugh Supplie 12 inch rounds of wood any type molt Bags of marbles 6 color 10 each Paper template drills depaper cut wood down to workable pieces would take volunteers to cut out rounds there are many people with saws, it is a comple cut for most volunteers to drill holes demotions of marbles volunteers to volunteers to sand volunteers to paint Volunteers to add bags of Play dough just for few

Figure 27. Family one's instructions to create a game bag for refugee families.

The two children in family one each completed a prototype for their favorite ideas. Tyler followed his parent's lead and wrote instructions for a craft project to make a bracelet and a ring out of native plant materials (Figure 28). He called this idea a "weed
bracelet" and a "weed ring." If plant materials had been available in the prototyping supplies he would have been able to make a bracelet and ring to accompany the instructions. The idea behind this craft was to find ways refugee children could make fun objects out of the natural materials they might find in their area.

Wood braclat in greatents: about 5 Itootweeze retrind Hoot weed whapk abound your tingen and the it tother.

Figure 28. Family one's instructions for a bracelet and ring made from plants.

Brooklyn created a quick prototype of an idea to build small games and toys out of simple materials that could be supplied to refugee children or found in their environment (Figure 29). She built two objects out of chenille stems, which she called "pipe cleaners," and wrote instructions so they could be replicated. The first object, a slingshot, could be made with a stick and elastic, and the second object was a flower made with chenille stems. The three ideas this family developed complement each other and the instructions written by the children could be included in the game bag the parents outlined. The focus of this family was to develop ides that could be easily accomplished by volunteers to send to refugees, or ideas that children would be able to build with materials they found in their environment.



Figure 29. Family one's instructions for building a slingshot and a flower from craft supplies.

The next family prototyped an idea that would deliver any of the other ideas to refugee children who live in places that are hard to reach (Figure 30). The idea is to fill a crate with needed supplies and deliver that crate to military personnel, who would attach a parachute and drop the crates out of planes to refugees. The family built a model of a crate filled with cotton balls to represent supplies and attached a paper parachute with ribbons. During the presentation of this idea the child who built it demonstrated how it would work by throwing the model crate in the air, which successfully floated to the ground. Rather than a specific idea to introduce art therapy to refugee children, this idea focuses on a delivery method to help the supplies reach refugees who are still inside Syria where aid organizations have a difficult time reaching.



Figure 30. Family two's prototype of a crate with a parachute to deliver supplies to refugees.

Family three created a prototype that was a natural extension of their brainstorming session in which they drew pictures to represent their ideas and relied on images instead of words. The family decided to create a coloring book to be given to refugee children and instead of hiring an artist, the children wanted to draw the pictures themselves (Figure 31). Their prototype consisted of several pages of pictures they drew of their favorite things, fastened together with a metal ring. The pictures were objects that represented their lives and were meant to share the things they liked with refugee children. The coloring book would be produced and shipped to refugee children, along with art supplies to allow them to color.



Figure 31. Family three's prototype of a coloring book.

The next family created a visual representation of a game refugee children could play in their environment without needing any supplies. They called this game "Lava," and the children cut out a series of black paper pieces to represent rocks and red paper pieces to represent imaginary lava on the ground (Figure 32). In the game a starting rock and ending rock are designated and the object is to hop from rock to rock and reach the end without touching the ground and falling into the "lava." To demonstrate, the children drew a figure of a child on paper and attached it to a wooden skewer. They then jumped the figure from rock to rock on their collaged picture. This game is played on the ground with real rocks and not on a game board. The children described "Lava" as a fun game they thought all children would like, one that could be played anywhere and would allow refugee children to use their imagination.



Figure 32. Family four's representation of a game called Lava.

The final prototype from family five was inspired by the videos of refugee children they were sent to watch before the workshop. In one video, a young girl describes how much she loves to learn and wishes she could go to school (UNICEF, 2013), so the family planned a school kit full of supplies and workbooks that could be given to refugee children (Figure 33). This kit could be tailored to the individual needs of refugee children and would contain schoolbooks or workbooks for different subjects on each child's grade level. The books and supplies could be given to refugee children to complete at home and would supplement schooling or provide a way to learn for children who are not able to attend school. The biggest hurdle to implementation the family identified was the need to translate the materials into Arabic, but felt the value the kit would provide would make it worth the effort to produce.



Figure 33. Family five's prototype of an education kit to provide school supplies to refugee children.

Evaluation of prototypes using the creative matrix. After the completion of the

workshop three prototypes, all of the prototypes from the previous workshops were hung on a wall and presented to the families. Each child was randomly placed into one of three groups, accompanied by a parent, and these new groups each selected two of the prototyped ideas to evaluate. Once each group selected their two ideas, the groups were given a poster with a creative matrix drawn on it for each of the ideas they chose. The instructions for completing the matrix were explained to the families and the groups began discussing the ideas (see Appendix C).

To save time the elements of the matrix were already defined and labeled. The columns of each matrix were labeled with groups of people who are impacted by the Syrian refugee crisis, namely "refugee children," "their parents," "people who help them there" (meaning aid organizations), and "people who want to help them here" (meaning people in the United States who wish to help refugees). Each of the rows of the matrix was labeled with a different question regarding the prototyped idea they were evaluating and how it would impact the people identified by the columns. The questions were, "How would they have fun?," "How would they learn?," "How might this help them feel better?," and "How might this make them happy?" The purpose of these questions was to ask the participants to evaluate how the ideas would impact various aspects of the lives of each of the groups of people involved.

Group A was comprised of the adults Maria, Allison, and Christine, along with the children Jenna, Mary, and William. This group chose to evaluate the pop-up garden prototype from the pilot workshop and the education kit developed in this workshop by family five. The parents guided the children through the process of filling out the creative matrix and one parent wrote down all of the responses. Instead of filling out two separate matrices, the group wrote all responses on one poster, dividing the columns and recording the answers side by side (Figure 34).

		PEO	PLE		
?	REFUGEE CHILDREN 8	THEIR PAPELITS	PEOPLE WHO HELP THEM THERE	PEOPLE WHO WANT	
How WOULD THEY HAVE FUN?	Challong, Trans Chart Share Shares the Share Share Share Share Share Share Share Shares Share	needs and the court house and the tex beaming sufficiency sufficiency	Linen Linen Tatle rev Tiwey	Patenting data Indiang data Calabation process	
How WOULDP THEY LEADEN?	with simplicity traction server the server s server server server server server server server server	Homework Durples Gother were as a Can train pearlts	Tots calid frank HED water them Yaraninage	Source the to leads	
HOW MIGHT THIS HELP THEM FEEL BETTER?	Automatic Linear	Someone it former that for them the second s	Predaution Strend Ly	Hicky Thebing the matched are there that anter the anti-help opportunities to the more a bulky for the anti- liste	
HOW MIGHT THIS MAKE THEM HAPPY?	Toxing Scienting Pull Here a Burgark	(ADS, APA (Austriantian) (ADS, AUSTRIANTIAN) (ADS, AUSTRIANTIANTIANTIANTIANTIANTIANTIANTIANTIANT	They have see and see and see and see and see and the see and the second	ue an enders ut an a definit ce la General Lat	
A- Gelaul Exeptions					
& Cardon					
	IDE	A:		GROUPS	

Figure 34. Creative matrix completed by Group A to evaluate the education kit and the pop-up garden prototypes.

The group first evaluated the education kit, which they labeled as "school supplies," in the columns marked "A." In the first row, which asked how the idea would be fun for the people involved, they wrote the kits would challenge refugee children and help keep them busy, their parents would "enjoy the fact kids are learning and progressing," aid workers would see them learning and be able to teach them, and volunteers assembling the kits in the United States would be happy to "know you are helping others." The row asking how the kit might enhance learning indicated the supplies would give teachers the tools they need to teach the children, the homework

supplies would help the children teach their parents, and that "kids could teach kids with their knowledge." The group also indicated the kits would improve the well-being of refugee children by providing "the joy of learning," the parents would benefit from knowing their children are receiving help, and volunteers in the United States who are providing the kits would feel "lucky that [refugee children] are getting the opportunities to have a better life." The last row evaluated how the idea might contribute to the happiness of those involved and recorded that with the kits the refugee children would have a purpose and that for the volunteers, "We are making a difference in someone's life."

The answers to evaluate the pop-up garden, recorded on the same matrix in column "B," indicated the fun it would provide would come through learning. The group wrote that refugee children and their parents would have fun through learning to grow their own food and becoming self-sufficient, and aid workers volunteers providing the gardens would enjoy passing on their knowledge. The group recorded the refugee children and their parents would learn through working together as a family and that it would improve their well-being by providing the food they need to survive. The group also indicated the volunteers would have the opportunity to "teach something that will help them forever." In the row asking how the gardens would help the people involved feel happy, the group said the refugee families would have the food they need, and the volunteers would be happy to know "We are making a difference." This is the same response given for the education kit. When the group presented these findings to the other participants they cited the long-term importance of education and their own positive experiences working in family gardens as reasons why both ideas would be of value.

Group B chose to complete a creative matrix for the idea to sponsor a refugee child to live with a family in a host country developed in workshop two, and the mentoring idea to connect refugee children with experts in other countries from workshop one. The group consisted of the adults Jeremy, Julia, and Patrick, along with the children Tyler, Sean, and Noah. Their first matrix was for the sponsorship program (Figure 35). All matrix posters provided had an extra column and row to allow the groups to add any groups of people they thought the idea would affect and any additional questions they would like to ask. This group added a column to include diplomatic officials needed to implement the idea, and added the question, "What would be the drawbacks?" to the blank row. The group indicated in the completed matrix the benefits for refugee children would be that the idea would allow them to meet new people and experience a new culture while being able to live in safety, but a drawback is that they would be "taken away from family after leaving their country." The group also felt the parents would benefit from knowing their children were safe and receiving an education, but they would be concerned about their children being away from them. The volunteers who took in these children would benefit from learning about a new culture and would know they are making a difference in the lives of refugees, but might struggle with the language barrier and cultural differences they would experience. Finally, the group indicated the need to involve diplomatic officials, but felt the experience would be a valuable way to "exchange ideas" and build trust.

P	REFUGEE	THER	PEOPLE WHO HEJ'THEN THERE	PERFORMANCE WHEN WHEN	, Diplomatic
How would Share your	Muetias new people			New culture	
How Would They usual?	New culture			New culture- Learning rev Skills-	Exchange ideas Trust building.
MERT THEM	Sate environment	Know that children are taken care of; educated.		Making a difference	
WE HUNT THIS WE THEN HUSPY?	Safe.	Know that thear children are safe.	Making a difference	Making a difference	
What would be the drawbackst;	Tuben away from family after leaving ther country	Concerned about Huer children		Figuring out cultural diffences Language barrier	

Figure 35. Group B's creative matrix to evaluate the idea for a host family to sponsor a refugee to live with them.

Group B also completed a creative matrix to evaluate the idea to establish an online mentorship program for refugee children from workshop one (Figure 36). They felt the idea would be fun for those involved as they learned something new and made new friends, and that it would be valuable as a learning tool because it could be "tailored to kids interests," could "build skills," and would provide an opportunity to "learn about another culture." The idea would enhance the well-being of the refugees involved by helping them improve their lives, and might benefit the mentors because they would be "helping others" and "making a difference."

WINLD	Decupied Jusing time	To see kids	See kids learn.	Make now	
HAVE FUN?	Something Interesting	Leon und.	make new friends.	friends-	
WAILD	Likse a carbona subject	Kids interests are mult	Learn about	Learn about another Deltare.	
REY LEARN?	Tagbred to kills interests		Build skills organization skills	Build skills	
W MIGHT THIS	Improving	Kids arealt bared	Helping people Making a difference	Making a difference	
W MIGHT 5 MARE HEM HAPPY?	Leorning Timo being used wisely	Parants are happs whan Kids are lourning	See improvenient	See improvement.	

Figure 36. Group B's creative matrix to evaluate a refugee mentorship program.

The ideas Group C chose to evaluate were the coloring book prototyped by family two during the workshop, and the art-sharing program from workshop one. Group C consisted of one parent, Courtney, and the children Brooklyn, Austin, and Aaron. The first idea evaluated was the coloring book and they filled in the matrix together (Figure 37). The group felt the coloring book would be fun for those involved because children and adults both enjoy coloring and the people who make the books would enjoy giving it to the children. It would also provide a learning opportunity because refugee children could "learn about the things other kids from other places liked." The group also saw the benefits the coloring book would provide as a method of art therapy, writing "colors help [refugee children] feel warm inside," and coloring would "help take their mind off their situation." The also wrote that parents would feel "relief" by watching their children have fun and the children and volunteers creating the artwork would benefit by feeling "they are helping." The row asking how the coloring books would help those involved feel happy indicated the refugee children would "feel loved," their parents would "feel like others care," and that for the people making the coloring books, "serving helps people feel happy." When the group presented these findings to the other participants they explained one drawback they saw with the idea is that it would be a one-time event and once the coloring books and supplies were distributed the project would be over. Another participant then added the coloring book could become an exchange. Refugee children could draw their own pictures on blank paper once they received the coloring books and these pictures could then be returned and made into coloring books to give to the children who drew the original pictures. The participants agreed the coloring book could become an ongoing exchange between the two groups of children and they could communicate through art without worrying about the language barrier.

PEOPLE								
?	HENGEE CHINDEEL	TRINK. PARAMITS	PENILE WHO HELP THEN THERE	PEARS WIN WHY TO YEAR THEM, HERE				
Grow with Bunk with Fung	113	Second Proof condition Reported are secondly	and a set	direaring 18 han				
Han Wants THEY BARN?	interpletances allow subscripts and subscripts	Santa Santa Santa Santa Santa Santa Santa Santa		Lindo de Space				
Han Hadar thes Her shen Free terman	Lange Sale Stars Ford same Sale Sale Star work of I mar strates	the second	State and and	Saah 1040 Maray men baharang				
Han MIGHT THE MARE THE HAPPY ?	c.s mad	for the observes		Service Service				
	IDE	a: Ohmy Eaks A	105	GROUP! C				

Figure 37. Group C's creative matrix evaluating a coloring book.

The second matrix Group C completed was for the art-sharing program from workshop one that would deliver art supplies to refugees and then establish a relationship with galleries or websites to sell the art and provide the refugees with the profits (Figure 38). In this matrix, the group felt refugee children would have fun creating the art and their parents would enjoy helping them, that aid workers would be able to "see children's excitement," and the people who buy the art will have fun seeing what the children made. The group felt the idea would help refugee children learn to use the art materials, give aid workers an opportunity to teach them, and would allow those who bought the artwork to learn about the lives of refugees. The group indicated the program would improve the well-being of those involved by allowing refugee children to "share their feelings through art," would help the parents see that others cared about them, aid workers would have more opportunities to offer children, and the recipients of the art would "have a way to remember the person they helped." The group then completed the matrix by writing in ways the idea would contribute to the happiness of those involved, writing that the children would, "feel better about themselves by sharing their talents," parents would receive money to support the family, and those who buy the art would know they are helping a child in need.

		F	PEOPLE	-
? _	CHILDREN	PARENTS	PEOPLE WHO HELP THEN W. SYRUA	PEDPLE WID
HOW WOULD THEY HAVE FUN?	(an U. Candle. San, Same marthrough de District Stores of	they might shipy tracky trans sport strange at a significant		han to look at . What they made
HOW WOULD THEY LEARN?	lines to set les types	It were tight at lifetran and is it was warden the mail leafs	and	have alloct affort halfs thats
How HIGHT THIS HELP THEM FREL BETTER?	they can chose that George through att	ning had that attack every	Bary dash mitra Jaka in office dash mitrature to californ	they cald be the art pull date the art pull date the construction the transmitter the
HOW MIGHT THIS MAKE THEM HAPPY?	riad better about these servers by Sharing these gradets	Alto Pour Briter Scoplate Sea an sequence	three will three and with month ther belowing	tay an inno hids an inny Wheel
-	IDE	A: Art Sharing	174.22pm	GIPOUP:C

Figure 38. Group C's creative matrix evaluating an art-sharing program.

Final results through visualize the vote. After the results of the creative matrix session were shared with all of the participants each person was given two sticky notes,

one blue and one orange. All of the prototypes evaluated with the creative matrix were hung on a wall and each person placed a blue note on their first choice and an orange note on their second choice. Through this voting method, all participants were given an equal say in the selection of a final idea, as the method allowed the children and adults their own votes, which were weighted equally. The researcher does not know which person cast which votes. After this vote, the participants were given the posttest questionnaire at the conclusion of the workshop.

The results of the voting are as follows (Table 2). The idea that received the most first and second choice votes, and the most votes overall, was the coloring book.

Prototyped Ideas	Creative Matrix	Visualize the Vote	Final Idea
Refugee student	Not selected		
council			
Compassionate	Not selected		
Opera			
Pop-up garden	Evaluated by	1 first choice	
	Group A	3 second choice	
		3 total votes	
Online mentorship	Evaluated by	2 first choice	
program	Group B	1 second choice	
		3 total votes	
Art-sharing program	Evaluated by	2 first choice	
	Group C	3 second choice	
		5 total votes	
Solar-powered night-light	Not selected		
Refugee exchange	Evaluated by	1 first choice	
program	Group B	3 second choice	
	-	4 total votes	
Create a Village	Not selected		
camp redesign			
Game bag with craft	Not selected		
project instructions			
Parachute crate	Not selected		
delivery system			

Table 2. Evaluation of the prototyped ideas and results of the final vote

Coloring book	Evaluated by	6 first choice	Most first and
	Group C	4 second choice	second choice votes,
		10 total votes	and most votes
			overall
Lava game	Not selected	1 first choice	
		1 total vote	
Education kit	Evaluated by	5 first choice	
	Group A	3 second choice	
		8 total votes	

Questionnaire Results

Adult pretest questionnaire results. All participants were asked to complete questionnaires before and after the workshops. The questionnaires were designed to gauge the attitude of each participant towards the Syrian refugee crisis, towards design thinking, and to record their levels of empathy for refugees (see Appendix E). The questions relating to empathy were developed from the Toronto Empathy Questionnaire (TEQ), a survey that has been found to be a reliable and valid instrument in the assessment of empathy (Spreng, McKinnon, Mar, & Levine, 2009). The same posttest and pretest questionnaires were given to all adults participating workshops, and a separate questionnaire was developed for the children in workshop three, also based on the TEQ. The adult pretests asked participants to rate a series of statements on a Likert scale of strongly agree to strongly disagree and also included two open-ended questions. The posttest repeated the same statements and open-ended questions to gauge whether or not the participant's attitudes had changed after the conclusion of the workshop, and asked two additional open-ended questions. The children in workshop three were also given pretest and posttest questionnaires consisting of eight statements to be rated on the Likert scale and two open-ended questions (see Appendix E). The pretest and posttest for the children were the same.

The total number of adult respondents in all workshops to the pretest

questionnaires was 31. The results show that most participants were familiar with the Syrian conflict before the workshop, with 84% indicating they strongly agreed or agreed they were informed on the issue (Table 3). A majority of respondents, 93%, also strongly agreed or agreed that refugees needed help from the international community. When asked if they were able to help Syrian refugees in a way other than with a monetary donation, 39% provided a neutral response, and 16% either disagreed or strongly disagreed. Respondents did feel, however, that they could make a contribution to serious world issues in general, with 65% feeling they could make a positive impact. This is reflected in the answers to the statement regarding problem solving in which the majority of respondents, 88%, either agreed or strongly agreed that they were creative problem solvers.

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	7	19	3	1	1
Syria.					
2. Refugees need help from the	15	14	2	0	0
international community.					
3. I am able to help Syrian refugees in	3	11	12	4	1
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	4	16	9	2	0
world problems.					
5. The misfortunes of refugees do not	1	0	3	14	13
disturb me a great deal.					
6. I get a strong urge to help when I	14	16	0	0	1
see someone who is in need.					
7. The Syrian people are like me.	6	13	9	0	3
8. I am a creative problem-solver.	5	17	9	0	0
9. I can make a difference in the life	5	20	6	0	0
of a refugee, even if I never meet one.					
10. When I see someone in need I feel	5	22	4	0	0
protective towards him/her.					

Table 3. Workshop pretest results for all adults (n=31)

The statements on the questionnaire regarding empathy also showed the participants cared about the problem. Nearly every respondent, 97%, recorded they strongly agreed or agreed that they have an urge to help someone who is in need, and 61% affirmed they felt Syrian refugees are like themselves. When asked if they felt protective towards someone in need 87% responded positively, the same number were disturbed by the misfortunes of refugees, and 81% felt they could make a difference in the life of a refugee. The results of the pretest questionnaire show the majority of the participants were already engaged in the issue before the workshops and displayed empathy towards the plight of refugees. It was also shown most were confident in their problem-solving abilities. These numbers were expected because the participants were each selected because of their attitudes and experiences relating to Syrian refugees, or their professional experience in the design profession. For a breakdown of participant responses for each workshop see Appendix F.

Open-ended questions were also included in the questionnaire and the participants were asked, "What contribution can you make to improve the life of a refugee?" Of the 31 total questionnaires collected only one respondent left this question blank. A total of 19 of the responses to this question dealt with ways the participants could donate money and goods to refugees. Various items like humanitarian kits, school supplies, medicine, and toys were mentioned, along with donating time to help refugees to find employment or teach them new skills. Other responses included ways the participants thought they could become personally involved, with one writing, "perhaps offer my home to someone," and another, "provide friendship and concern." Respondents also noted the need for greater understanding. These answers included, "I can help teach others about

their situation, not perpetuate negative stigmas," "I can volunteer my time and talents. I can also take the time to learn about their struggles, culture, etc.," and "I am willing to learn from others to make myself a better advocate for refugees."

Some responses to this question spoke of personal experiences. One wrote, "I have to do something to improve their lives, because they need help and it breaks my heart." Another wrote, "We have 1.2 million refugees in Lebanon that are living in miserable conditions because the Lebanese government is broke and the refugees live in tents under trees and orchards, in schools. You see many refugee kids at the age of three or four walking around on the streets begging for money." A further group of responses addressed the political solution surrounding refugees, noting the importance of speaking on behalf of refugees. "It is important to encourage our political leaders to keep our borders open to these refugees," one respondent wrote, and another shared that, "I can use helpful economic tools to try to promote positive policy solutions."

A final group of responses spoke of the need to support refugees who are already living in the community. These answers included, "I can serve the refugee community here in Logan and form relationships with them," and "There are many refugees living in Logan. I can work to make the children's experience in our education system a little better." One parent noted it was important to "raise children that accept all diversity." Another respondent summed up a personal message for refugees, writing, "I think just letting them know that people are out fighting for them and try to help them. They have not been forgotten."

The second open-ended question, "What contribution can you make to solving serious world issues?" was meant to prompt respondents to discuss their attitudes toward

problem solving. A total of five participants left this question unanswered, two respondents answered with "no idea" and another two with "none." On the other end of the spectrum of responses was, "Providing creative solutions!" Another set of responses involved becoming informed on issues and sharing that knowledge, and included the statements, "I make it a point to stay informed and helping my family and associates keep up and thinking positively about local and world affairs," "Being educated and educating others," and "Having discussions with others to understand issues and generate awareness." Other respondents pointed out the importance of implementing that knowledge in a formal way. One wrote, "The most helpful things I can do are to research and propose helpful solutions that have proven effective in other places." Another added, "Try to teach students to be open minded, and to help them see that they can make a difference."

Respondents also spoke of the importance of acting to solve problems. These answers included, "I can use my mouth to speak my truth at every opportunity," "take action against hate and ignorance," and "Personal accountability and personal decision making affects markets, climate, and health." One response addressed the political climate surrounding many issues, stating, "I can talk about solutions without becoming irrational and emotionally charged, I can think of ways to help that are not politically driven." Another added, "Don't be scared off about what could go wrong but help all in need as best we can." A final response realistically stated that contributions to serious world issues happen "one step at a time."

Adult posttest questionnaire results. At the completion of each workshop all adult participants were again asked to complete a posttest questionnaire with the same ten

statements to be rated on the Likert scale, along with four open-ended questions. These questions included the two asked on the pretest and two additional questions, "Do you think design thinking strategies are useful in solving complex problems?" and "Could design thinking strategies help you solve other problems you encounter?"

The responses to the pretest show that the participants were already engaged in the problem and reported positive levels of empathy for refugees. The answers in the posttest indicate the workshops were successful in increasing these feelings (Table 4). When asked if they were familiar with the Syrian conflict, 91% now reported they strongly agreed or agreed, up from 84% in the pretest. All 33 of the respondents now believed refugees need help from the international community and 94% strongly agreed or agreed they could each help Syrian refugees in a way other than with a monetary donation, as compared to 45% in the pretest (Table 5). Participation in the workshop also helped the respondents feel empowered, with 94% believing they could contribute solutions to world problems, increasing from 65% before the workshop. When asked to respond to the statement of whether or not they felt they were a creative problem-solver, 88% now indicated they strongly agreed or agreed, compared to 71% in the pretest.

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	12	18	1	2	0
Syria.					
2. Refugees need help from the	23	10	0	0	0
international community.					
3. I am able to help Syrian refugees in	8	23	2	0	0
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	9	22	2	0	0
world problems.					
5. The misfortunes of refugees do not	0	1	2	14	16

Table 4	. Workshop	posttest results	for all adults	(n=33).	
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disturb me a great deal.					
6. I get a strong urge to help when I	14	19	0	0	0
see someone who is in need.					
7. The Syrian people are like me.	10	18	1	2	2
8. I am a creative problem-solver.	8	21	4	0	0
9. I can make a difference in the life	13	20	0	0	0
of a refugee, even if I never meet one.					
10. When I see someone in need I feel	14	19	0	0	0
protective towards him/her.					

Table 5. Adult pretest (n=31) and posttest (n=33) questionnaire results side by side.

Question	Strongly		Agree		Neutral		Disagree		Strongly	
	Ag	ree						-	Disa	gree
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	test	test	test	test	test	test	test	test	test	test
1. I am familiar with the	7	12	19	18	3	1	1	2	1	0
conflict in Syria.										
2. Refugees need help	15	23	14	10	2	0	0	0	0	0
from the international										
community.										
3. I am able to help	3	8	11	23	12	2	4	0	1	0
Syrian refugees in a way										
other than with a										
monetary donation.										
4. I can contribute	4	9	16	22	9	2	2	0	0	0
solutions to serious										
world problems.										
5. The misfortunes of	1	0	0	1	3	2	14	14	13	16
refugees do not disturb										
me a great deal.										
6. I get a strong urge to	14	14	16	19	0	0	0	0	1	0
help when I see										
someone who is in need.										
7. The Syrian people are	6	10	13	18	9	1	0	2	3	2
like me.										
8. I am a creative	5	8	17	21	9	4	0	0	0	0
problem-solver.										
9. I can make a	5	13	20	20	6	0	0	0	0	0
difference in the life of a										
refugee, even if I never										
meet one.										
10. When I see someone	5	14	22	19	4	0	0	0	0	0
in need I feel protective										
towards him/her.										

The questionnaire statements regarding empathy also showed higher levels of caring. One hundred percent of respondents reported in the posttest they strongly agreed or agreed they have a strong urge to help someone in need and 90% were disturbed by the misfortunes of refugees. All respondents also strongly agreed or agreed they could make a difference in the life of a refugee, as compared to the 81% who felt they could before the workshop, and 100% now felt protective towards someone in need, as compared to 87% in the pretest. The statement as to whether or not the participants thought they were like Syrian refugees saw a small shift in the opposite direction. In the pretest 61% of responses strongly agreed or agreed with the statement, 29% were neutral, and 10% strongly disagreed. After the workshop 85% strongly agreed or agreed and only 3% were neutral, but 12% now disagreed or strongly disagreed. These responses show that for some participants the workshop increased the feeling that they were different from Syrian refugees, but this belief did not prevent their levels of empathy for refugees from improving.

The open-ended question, "What contribution can you make to improve the life of a refugee?" provided new answers at the conclusion of the workshop. While 40% of participants (12 of the 30 responses) mentioned donating money or goods to the cause compared to 73% in the pretest (19 of 26 responses), these responses were supplemented with answers that now included aspects of problem solving and empathy. Of the 30 people who answered this question, 12 of them specifically mentioned providing ideas as a way to help refugees. These responses included, "I can come up with ideas and try to solve big problems on a smaller scale," "provide ideas that could be put into practice,"

with others of good will." Two people linked creative thinking to empathy with, "1. Caring 2. Ideas 3. Carrying out ideas," and "with empathy, we can come up with creative solutions to help their quality of life."

Another group of people focused on empathy, responding with, "love," "love and friendship, compassion and understanding," and "connecting with them … showing I care." Others indicated they felt empowered by the workshop. One person answered, "Keep striving to make the world a better place." Two respondents specifically indicated their participation in the workshop might make a difference, writing, "If I am offered a way to help here I would like to participate," and "I feel like my participation today might make a difference." Another participant contacted the researcher after the workshop and asked if it was possible to continue to help, wanting to volunteer to implement the final solution.

The open-ended question, "What contribution can you make to solving world issues?" received 29 answers. No one answered again with "none" or "no idea." Responses indicated small ways the participants felt they could make a difference, including, "doing little things can make a big difference," "little by little, follow your passion, don't give up," and "educating myself more about situations around the world, educating those around me." Some respondents spoke of the political climate of refugee issues, writing, "I can vote. I can keep myself educated on the issues," and "I can write to my leaders and share ideas." Others mentioned the importance of understanding other cultures, answering with, "raising culturally diverse children," "learn about and understand their culture and where they are coming from," and "contribute a witness to others that all people are similar with the same basic needs."

The question, "Do you think design thinking strategies are useful in solving complex problems?" was added to the posttest. Of the 27 people who provided a response, 100% answered positively. Participants saw the value of design thinking, with one person responding, "I will use this in the future." Others commented on their collaboration with comments like, "It is interesting to see how different ideas lead to the same results," "Even dumb ideas can bring about something useful!," "Many small ideas can grow into something bigger and all encompassing," "the bouncing of ideas off of many people and getting diverse participants is very helpful," and "the more ideas we have the more likely one of them will be good." Other responses included, "because they employ empathy," and "inspires innovation," to describe the value of the design thinking process, and another noted, "it allows all forms of individual input without being judged or criticized."

The final question, "Could design thinking strategies help you solve other problems you encounter?" also received positive replies from 100% of respondents. The comments included, "It helps look at the problem from many angles," "It gives direction to your thoughts and ideas," and "Everyone has different ideas and by combining you can learn new things." Another wrote, "It helps me think outside the box rather than jumping to the first solution I think of." One respondent also pointed out the limitations of design thinking, adding, "It is not an immediate fix-all. More time is necessary to understand the context – complexities and nuances of a problem... However design thinking with enough people/ideas and time can produce new solutions."

Child pretest questionnaire results. The children participating in workshop three were given a pretest that was a simplified version of the adult questionnaire. A

series of eight statements rated on the Likert scale were followed by two open-ended questions. The statements were meant to gauge the children's feelings related to their own creative abilities and their levels of empathy towards others in general, and Syrian refugee children in particular.

When asked if they liked helping others, 100% of the children responded positively, with 57% strongly agreeing and 43% agreeing (Table 6). The statement relating to feeling sad when the children saw others who are sad showed 57% had a neutral response, with 29% of the children strongly agreeing, and the remaining 14% agreeing. Another statement asked if the children felt Syrian children like the same things they do and the responses were less favorable, with 43% agreeing, 43% responding with neutral, and 14% disagreeing. The question as to whether or not children in other parts of the world are like them received a slightly more favorable response, with 43% strongly agreeing or agreeing, and the same number remaining neutral or disagreeing. But when asked if refugee children needed help 100% either strongly agreed or agreed, indicating the children recognized that others needed help regardless of whether or not they felt those children were similar to them.

Question	Strongly	Agree	Neutral	Disagree	Strongly	
	Agree				Disagree	
1. I like helping others.	4	3	0	0	0	
2. I am creative.	4	2 0 1		1	0	
3. Children from Syria like the same	0	3	3	1	0	
things I do.						
4. I can help adults solve serious	1	3	2	1	0	
problems.						
5. When I see other children who are	2	1	4	0	0	
sad, I feel sad too.						
6. Refugee children need help.	5	2	0	0	0	
7. I am a good artist.	2	3	2	0	0	
8. Children in other parts of the world	1	2	3	1	0	

Table 6. Pretest results for children in workshop three (n=7).

are like me.							
The children were also asked if they saw themselves as creative and 86% either							

strongly agreed or agreed while 14% disagreed, and 72% felt they were a good artist, with 29% remaining neutral. The question as to whether or not the children felt they could help adults solve serious world problems saw a larger range of answers, with 57% strongly agreeing or agreeing, 29% remaining neutral, and 14% disagreeing.

The first open-ended question, "What can you do to solve problems in your life?," was answered by four children with the word "think." These responses included, "I think," and "I just think about the problem and do my best to solve it." Other children wrote of caring for others, with responses like, "help people who need the help," and "help other people," even though the question asked about solving problems in general and not about problems involving people in need. The second question asked, "If you had a friend who was a refugee what could you do to help them?" All children provided responses and the answers revealed attitudes of caring. Two children answered with, "give them food," and another with "take them goods." Other answers included, "start a program to help them," "help them if they're being bullied," and "invite them and their family to live with me."

Child posttest questionnaire results. After the workshop, the children were given an identical questionnaire as a posttest (Table 7). When again asked if they liked helping others, the number strongly agreeing increased to 75%, with 25% agreeing. The number of children feeling sad when they see others who are sad also increased, with 80% strongly agreeing or agreeing, and 13% remaining neutral. The statement on refugee children needing help also saw improved scores, as 88% now strongly agreed and 12% agreed.

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I like helping others.	6	2	0	0	0
2. I am creative.	5	2	0	1	0
3. Children from Syria like the same	2	1	3	2	0
things I do.					
4. I can help adults solve serious	5	2	0	1	0
problems.					
5. When I see other children who are	3	4	1	0	0
sad,					
I feel sad too.					
6. Refugee children need help.	7	1	0	0	0
7. I am a good artist.	4	3	1	0	0
8. Children in other parts of the world	2	3	1	2	0
are like me.					

Table 7. Posttest results for children in workshop three (n=8).

The statement regarding Syrian children liking the same things these children do saw a move towards a more positive answer, with 25% now strongly agreeing, 12.5% agreeing, and 37.5% remaining neutral, while the children replying with "disagree" rose from 14% on the pretest to 25% on the posttest (

Table 8). The question of children in other parts of the world being like them saw similar answers, with 25% strongly agreeing, 37.5% agreeing, 12.5% responding with neutral, and the number of children disagreeing was 25%. The statement, "The Syrian people are like me," on the adult questionnaires had a similar range of responses and participation in the workshops seemed to either help both the children and adults feel they were more like Syrian refugees or less like them. However the statements measuring empathy showed the positive responses increased for both children and adults in the posttests, indicating that the participants did not necessarily need to feel refugees were like them to increase their empathy.

Table 8. Child pretest (n=7) and posttest (n=8) questionnaire results side by side.

Question	Strongly	Agree	Neutral	Disagree	Strongly

	Agree					Disagree				
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	test	test	test	test	test	test	test	test	test	test
1. I like helping others.	4	6	3	2	0	0	0	0	0	0
2. I am creative.	4	5	2	2	0	0	1	1	0	0
3. Children from Syria like the same things I do.	0	2	3	1	3	3	1	2	0	0
4. I can help adults solve serious problems.	1	5	3	2	2	0	1	1	0	0
5. When I see other children who are sad, I feel sad too.	2	3	1	4	4	1	0	0	0	0
6. Refugee children need help.	5	7	2	1	0	0	0	0	0	0
7. I am a good artist.	2	4	3	3	2	1	0	0	0	0
8. Children in other parts of the world are like me.	1	2	2	3	3	1	1	2	0	0

When the children were again asked if they felt they were creative, there was only a slight increase, with 62.5% strongly agreeing, 25% agreeing, and 12.5% disagreeing, but when asked if they were a good artist, 88% now strongly agreed or agreed, 12% were neutral, and none disagreed. The workshop improved the feelings of being creative and a good artist to some degree for almost all of the children who participated. The statement addressing their ability to help adults solve serious problems also saw higher ratings, as 62.5% now strongly agreed (up from 14% in the pretest), 25% agreed, none remained neutral, and 12.5% disagreed (down from 14% in the pretest).

The open-ended question, "What can you do to solve problems in your life?" was answered by all but one of the children. Four of these children again answered that thinking would help them to solve problems, writing, "I can think," and "think about ways to solve it and solve it." Other children wrote they could "help others," and "visit other people so they can feel not alone." The final question, "If you had a friend who was a refugee what could you do to help them?" saw similar responses. Six children answered they could either give them things they need or donate items, and two children wrote they could, "teach them." Other responses included, "write letters, send fun games, and gifts," and "play with them."

This series of workshops utilized all phases of the design thinking process to engage stakeholders in problem solving strategies and resulted in the development of a number of ideas to benefit Syrian refugee children. The design thinking steps of empathize, define, ideate, prototype, and test each informed the development of the ideas as they were evaluated and refined through collaboration that engaged both adults and children. The final idea, a coloring book to be created by children in the United States for Syrian refugees, not only utilizes art therapy as an intervention, it highlights the feelings of empathy the workshop participants had for refugees. The idea of a coloring book could be developed with artists and art therapists, but the children in the workshop not only proposed they be the ones to create the coloring book, they wanted an ongoing relationship with refugee children by using the coloring book as a delivery method of communication between the groups of children. Sharing art may prove to transcend language barriers as each group of children shares their lives and discovers new things about the culture and beliefs of the other.

Discussion

The Value of Design Thinking

The results of this study demonstrate the rich possibilities of design thinking and the value it can provide in the creative thinking process. The ease with which the use of design thinking strategies were able to facilitate the development of so many ideas to help refugees in a limited amount of time points to the value further workshops can play in resolving many of the problems refugees face. The prototyped ideas were thoughtful, inventive, and compassionate, and resulted from meaningful conversations among the participants. The work of the participants also shows how empathy can inspire a desire to help others on a meaningful level in both adults and children.

Developing creative ideas. Design thinking is remarkable in that the keys it provides help people who have no training or background in its use to immediately unlock a creative potential they may not realize they have (Kelley & Kelley, 2013). This study involved people who had never participated in design thinking workshops, and all but two were completely unaware of the design thinking process. The strategies proved to be both intuitive and insightful, and all participants were able to complete the workshops with a minimal amount of prompting. Without preparation or research, they were able to rely on their background and experience to contribute meaningful ideas to the conversation. Many of the ideas discarded along the way also have the potential to benefit refugees if they were developed through further iterations of the design thinking process. Every group was successful in generating ideas that consistently resulted in meaningful discussions.

Participation in the workshops also proved to increase the confidence of those involved in their ability to be creative. In spite of the experience each person had, many of them stated they did not feel like they would be able to contribute anything meaningful, and some of them even apologized in the early stages of the workshop for not doing a better job. Yet in the span of a few hours every person was able to make a substantial contribution to the group discussion and even the quietest among them was able to shape the prototyped ideas. Conversations after the workshop with the researcher and among the participants revealed a newfound confidence in their ability to think creatively and make a positive contribution to an issue they were concerned with, and several participants felt their time in the workshop would make a difference in the lives of refugees. There are few other exercises that could produce such rich results in the course of a single evening, and the workshops may have a permanent impact on the lives of the participants if they continue their work with refugees or apply this confidence to other issues in their lives.

While all of the adult participants were educated professionals in their respective fields, the confidence design thinking can instill in those who engage in it may have an even greater impact on people who have had fewer opportunities in their lives to develop new ideas. Design thinking has the potential to put a methodology into the hands of those who wish to solve meaningful problems and a high level of skill or education is not necessary. Anyone who is led through the design thinking process has the potential to uncover innovative solutions to serious problems (Kelley & Kelley, 2013) and teaching design thinking to those in need, like the refugees this study sought to help, may give them the tools to solve their own problems with less reliance on others. The best people

to solve the problems refugees face are the refugees themselves, and design thinking provides a simple, repeatable, and adaptable framework to engage and empower those in need.

Developing empathy. Participants in this study were also able to develop deeper feelings of empathy for Syrian refugees, which is notable even with the predisposition they had to care about them. The political climate in the United States surrounding the issue of refugees from countries in the Middle East was distinctly negative at the time of the workshops. The November 2015 attacks in Paris, France carried out by ISIS-affiliated terrorists that killed 130 people happened just three days before workshop one ("Three hours of terror," 2015), and the mass shooting in San Bernardino, California carried out by Islamic extremists who killed 14 people happened one week after workshop two ("San Bernardino shooting," 2015). Further attacks in March 2016 in Brussels, Belgium that killed 32 and injured over 300, including four missionaries from The Church of Jesus Christ of Latter-Day Saints, three of whom were from Utah, occurred as the coloring book was being developed (Markoe, 2016). Political leaders in both the Republican and Democratic parties in the United States called for the government to stop the resettlement of Syrian refugees in the country and the subject was a topic of debate among the presidential candidates in both parties (Seipel, 2015). Syrian refugees were suspected by some of being terrorists in disguise, preying on the good intentions of the citizens of the countries who took them in (Chibarirwe, 2015). It is understandable that even people with experience working among refugees could feel wary of any possible hidden motives of Syrian refugees or fear for their personal safety if they suspect a refugee may be a radicalized believer in Islam.

With this climate in play at the time of the workshops, it was expected these attitudes could impact the further development of empathy for refugees. The workshop proved successful in giving the participants the opportunity to consider the thoughts and feelings of Syrian refugees and to internalize their struggles. Such workshops could help to build empathy towards refugees among those who fear them by allowing people to step into the life of a refugee and consider what they would do and feel if they were in the same situation (Bohart & Greenberg, 1997; Greenberg & Elliott, 1997; Howe, 2013). The workshops show such a mindset can be achieved in a short period of time and can inspire creative problem solving. Design thinking could prove to be a valuable tool in increasing empathy and compassion for refugees separate from any ideas that may come from such a workshop.

The design thinking process may also be beneficial in addressing other global issues. The empathy gained by considering the lives and experiences of people in other countries and cultures could inspire innovative solutions to other serious problems. The steps in design thinking have been developed to aid in developing a deeper understanding of an issue by gaining empathy and defining a problem before any potential solutions are proposed (Kelley & Kelley, 2013). Then, once ideas are generated they are tested and refined before they are implemented. These steps can be applied to any issue in any area of need and are particularly valuable when dealing with other cultures and beliefs. Design thinking allows those who use it to discover and consider the effects of their work on the people who need the solution and encourages the evaluation of the issue from the perspective of another. These initial steps in design thinking can be a valuable way to gain a new understanding of other cultures and collaboration among people of varying

backgrounds will bring new perspectives that can work to solve problems from a place of empathy and compassion. This mindset alone insures the use of design thinking is likely to produce ideas from a new perspective.

If design thinking were employed among people on differing sides of an issue, the collaboration it produces may result in surprising ideas that have not yet been considered. All that is needed for design thinking to be successful is a group of people who are committed to solving a problem. Any number of differences in thought, background, belief, and motivation can be bridged, and opposing viewpoints can become a strength in the process as ideas are developed. If design thinking were to be used systematically as people come together to address problems in realms as differing as humanitarian issues, politics, or business, the benefits will span beyond the ideas that are proposed and participants are likely to leave with a new understanding and respect for all who are involved.

Design thinking and children. This study also set out to involve children in the design thinking process and the involvement of children directly influenced the development of the coloring book idea. It was observed that adults and children have different ways of approaching problem solving and different levels of confidence in their creative abilities. The enthusiasm and creativity of the children in workshop three proved to be essential to the process and the children consistently displayed more confidence in both approaching and completing design thinking strategies than adults did.

Adults in the workshops began the process quietly, but the children did not hesitate. Children, in both the pilot testing of the individual strategies and in workshop three, immediately began writing down ideas and did not have a problem sharing them
with others. They appeared to be more comfortable with the creative activities than many of the adults and shared their thoughts freely. Children often lose confidence in their creative abilities at a young age, but those who retain or rediscover this confidence make better choices, see new possibilities and solutions in their lives, and are more comfortable collaborating with others (Kelley & Kelley, 2013). If children can be taught how to use design thinking strategies while they are young and are provided with regular opportunities to apply these methods of creative problem solving to issues they identify, design thinking may help to counteract the loss of confidence children often go through. If such confidence can be retained through exposure to design thinking, it may have a profound effect on the lives of children as they mature. When they are given a powerful set of tools to identify and solve their own problems, children could grow to be more creative, more empathetic, and more successful in their lives. If children around the world were given this opportunity, we may find a future rich with solutions rather than fraught with problems.

Another advantage of involving children in the design thinking process, especially when they work alongside of adults, is that children have much to teach those who are older than they about the value of play and the importance of taking risks and embracing failure. The children in workshop three approached the completion of the individual strategies as if they were an opportunity to play. Many of their parents began the initial brainstorming session by discussing the needs of refugees while the children focused on things they considered to be fun. The parents wrote down practical considerations and asked about the feasibility of implementing ideas, while the children drew pictures and planned for prototypes with less regard to whether or not the ideas were practical. While

the feasibility of ideas is an important consideration, it is essential in the initial ideation phase to generate ideas free from practical considerations and instead dream of the desired outcome. This thinking free from restrictions is more natural to children and they have much to teach adults about the importance of play and the value it can have in the creative process.

The children in workshop three were also less fearful of taking risks than the adults in the study. The children were eager to receive their colored pens and pieces of poster board, and the first marks on the paper made were by children. Some sketched, some intuitively linked their ideas together, and others jumped from area to area as they wrote things down, all done with minimal prompting from adults. In workshops one and two, where no children were present, the brainstorming session moved slowly as the adults were hesitant to make mistakes and share ideas they thought were stupid or unimportant. Adults seemed to put pressure on themselves to come up with the perfect idea, a pressure the children had no concept of. Children are used to being guided and corrected, knowing their efforts will not be perfect. Failure is a normal part of their learning experience and they do not always consider it to be negative. Adults stumble when they consider failure in the creative process to be just that, and not an important part of the development of new ideas. Innovative thinking comes from embracing failure rather than fearing it (Kelley & Kelley, 2013). Children take risks without realizing their ideas are risky, and this mindset should be encouraged as they are taught to think for themselves.

The difference in approaches between children and adults is also clearly seen in the prototypes built in the workshops. Many of the prototypes from workshops one and

two were not physical representations of the ideas as prototypes usually are. The ideas from these groups represented large picture organizations and the adults did not attempt to find a way to prototype them visually. Instead they outlined the function or wrote a mission statement to describe their intent. In workshop three, every group produced a prototype that was a physical object. There was no hesitation or questioning by the children as to how the prototypes should be built, while the adults consistently needed prompting and explanation to develop their ideas during this step. Again, children have much they can teach adults about approaching creative thinking in a playful way. The lack of a prototype as a physical object did not prevent ideas from workshops one and two from being evaluated by the families, but the final idea selected in workshop three was an idea proposed by children and prototyped as a physical coloring book.

It is apparent children have a valuable contribution to make through design thinking. They are less hesitant to dive in, to share ideas, to make mistakes, and to communicate in a visual way than the adults involved in this study. The issue of addressing the needs of Syrian refugees is a serious one faced by the international community at the time of this study, and the contributions of children played a crucial part in the development of the coloring book. Based on these observations, adults who are involved in tackling such issues should consider involving children in problem solving in some way. They may be surprised at the contribution children can make and the lessons they can teach adults. It is important to frame these problems in appropriate ways for children, but doing so may provide intriguing insights. Children have a unique and valid view of the world and their thoughts and opinions may help adults to consider and develop ideas that otherwise may never have been considered. The solutions a child may

propose through design thinking to address other issues that plague society may provide rich information that can inspire adults to approach problem solving in new and exciting ways.

Design thinking and art therapy. The thoughtful and intriguing ideas developed in this study point to the variety of creative solutions that can result from design thinking. New art therapy techniques could be developed through the implementation of a similar workshop structure among practicing art therapists, and design thinking strategies could be used to find ways to expand the use of art therapy into new forums. Art therapy inspires creative thinking in those who use it and explores thoughts and emotions to achieve a greater degree of inner peace and security. Like design thinking, this can be used to boost confidence and problem solving abilities in people who may not see themselves as creative thinkers.

Design thinking could also be infused into art therapy, and the two could be combined to achieve new levels of peace and confidence in those who participate in it. Art therapy is often practiced as a group activity, relying on collaboration and shared experiences to help clients to reframe traumatic experiences and develop new coping mechanisms (Buchalter, 2009). Many design thinking strategies can complement existing art therapy techniques. Design thinking focuses on the development of a deeper emotional connection to others in the empathize step, utilizes problem solving strategies in the ideation step, and finally tests those steps in a safe environment in which trial and even failure is encouraged. This process has the potential to be as healing as art therapy itself, and can be easily tailored to the unique needs of the therapist and the clients using it. One way to help refugee children heal from the effects of the trauma they have

experienced and to give them the tools to define and solve their own problems is to introduce both art therapy and design thinking in conjunction, and further study would likely enrich both modalities.

The literature review shows design thinking has been underutilized in developing ideas for humanitarian relief. Designers who address these issues tend to focus on the physical needs of refugees by redesigning shelters or providing facilities for healthcare (Allen, 2013; "Ikea creates flat packs for refugees," 2013; Pogrebin, 2014; Rodriguez, 2013; Sipus, 2009). When design thinking is employed, it is again the conditions refugees live in or ways they can generate an income that is the focus of the work, rather than their psychosocial needs (Altobello & Allister, 2014; Curtis, 2014; Duff-Brown, 2013). No examples were found of design thinking initiatives used to address the psychological well-being of refugees or to help them overcome trauma. There were also no examples found of the use of design thinking to address the needs of refugee children, from Syria or other areas of the world. Design thinking has a powerful potential to introduce solutions in these areas if it is used both among designers and among people in need to find new solutions to the challenges they face.

Also demonstrated in the literature review is the impact art therapy can have on helping refugee children heal from the trauma they experience because of war (Cumming & Visser, 2009; Baker, 2008; Isfahani, 2009; Nabarro, 2005; Schiltz & Schiltz, 2013). Coupled with the identification of this trauma in refugee children as a major area of concern by the UNHCR (2014), this study made an attempt to focus the possibilities of design thinking specifically on the use of art therapy to address the needs of refugee children. The value of design thinking was demonstrated as the participants in this study

generated a number of ideas that not only have the potential to benefit refugees, but also showed a deep concern for those in need on the part of the participants.

Research Question 1: Were the ideas from non-refugees valuable ones?

The first research question in this study asked, "How might people who are not refugees themselves use design thinking strategies to help refugee children?" The purpose of this question was to evaluate whether or not people in stable parts of the world can contribute to the refugee crisis in a meaningful way. The prototyped ideas can be evaluated based on the criteria of the use of art therapy as a healing modality, the practicality of implementation, and the feedback of the children in workshop three.

The participants viewed a video demonstrating the importance of art therapy at the beginning of the workshop and were instructed to use art therapy and art activities as the foundation of their brainstorming. Even with these instructions, not all ideas incorporated traditional uses of art therapy, and some had no art therapy components at all. By reviewing the work completed in the design thinking strategies of each group, it is possible to see the genesis of the ideas and how they developed separate from art therapy. For example, the idea for a solar-powered night-light from Group B in workshop one came from the discussion of the effects of war on the well-being of refugee children in the problem tree analysis the group completed (Figure 11). The night-light was intended to solve a problem the group identified together, and they also completed a prototype of an art-sharing program that incorporated the use of art therapy. The idea of a pop-up garden was developed by Group C in the pilot workshop through the completion of a concept map. In this group's map, their ideas are clustered together in groupings that were labeled "creative arts," "creative inventions," and "survival" (Figure 9). The cluster

"creative arts" was linked to "creative inventions" by the phrase "creative thinking," which was then linked to the grouping "survival" by the word "empowerment." From this map it appears the group used the word "creative" to convey a similar idea to that of "art," and considered ideas that were creative activities as larger concepts than art therapy alone. The idea for a pop-up garden came out of the discussion of how creative activities and creative thinking could empower refugees and give them a new tool to help them survive. Even these ideas that do not use art therapy may still prove to be of benefit to refugee children.

Most of the prototyped ideas also have a possibility of being implemented, and the coloring book selected as the final prototype is the simplest and most practical of all of the ideas to introduce to refugees. The involvement of children in the evaluation of the ideas also provided valuable feedback to further refine them and to insure children would enjoy the solutions. All ideas exhibit promise and demonstrate that people who have not been refugees themselves can develop new ways to meet the needs of refugees.

The ideas the participants prototyped in the workshops also prove to be of value when compared to the problems refugees face as raised in the literature review. The current design of refugee camps used by the UNHCR consists of rows of tents or caravans constructed on a grid for efficiency (Allen, 2013; Sipus, 2009). When Azraq opened in 2014 as a refugee camp in Jordan, its design incorporated lessons learned from Zaatari (Pelham, 2014), but it still appears forbidding (Figure 2). The redesign of a refugee camp proposed in this study would provide a greater sense of community and incorporates specific areas dedicated to healing and psychosocial support for refugees. Safe spaces, community support, and directed activities such as the ones incorporated

into this camp redesign have been shown to help refugees cope with trauma (Quosh, 2013). The solar-powered night-light from workshop one was meant to give children hope by providing a light that would shine in darkness and help to alleviate their fears. Sleep disturbances are one of the symptoms of trauma refugee children experience and the night-light idea was meant to address that (Brunick, 1999; Grant & Harper, 2013; Qouta et al., 2008; UNHCR, 2013).

Other proposed ideas addressed the physical needs of refugees. A pop-up garden kit provided to refugees may help to ease the strain on resources the refugees are causing in host countries by giving them a way to grow some of their own food (UNHCR, 2013). This need for food is severe and the World Food Programme has been repeatedly forced to cut food subsidies to refugees due to budget shortfalls (Murphy, 2014). The idea for a host family to sponsor a refugee child to live with them for the duration of the war would also provide for their physical needs and give them a safe place to live until they could return to Syria. The long-term settlement of refugees is against the policies of the host countries (Sipus, 2009), and this plan would help ease the burden of these countries for the duration of the war.

Another issue plaguing refugee children is their access to an education (Grant & Harper, 2013; UNHCR, 2014). If these children could be provided with an education kit full of books and supplies tailored to individual needs they would be able to continue learning until a return to school is possible. The need for an education is particularly essential because the UNHCR has identified refugee children as at risk of becoming a lost generation without hope of supporting themselves in the future (2014). Reaching affected children is another difficult problem and there are more people displaced within Syria

than there are refugees who have left the country ("United Nations statement to the press on Syria," 2015). Some of the living conditions of the displaced are inhumane and aid organizations are struggling to provide them with needed supplies (Looney, 2014). The parachute crate delivery system proposed by a child in workshop three may be a way that goods could be delivered to these children when other methods have failed.

A number of organizations were proposed in the workshops to provide support for refugees. The establishment of a youth council would address the needs of teenagers who have a particularly difficult time coping with trauma because of the additional stresses adolescence brings (Brunick, 1999). Giving children opportunities for leadership and problem solving through this council may support good mental health and teach refugee children coping mechanisms essential to the establishment of long-term peace (Qouta et al., 2008). An ongoing mentorship program for refugees would also be of value. Most refugees are living outside of established camps and are forced to provide for themselves (UNHCR, 2016). Even in camps like Zaatari 80% of children are not receiving the psychological support they need (Curry, 2013). Providing refugees with access to mentors would broaden their support system and the online delivery system proposed in workshop one could also be used to pair refugees with mental health professionals.

The proposed art-sharing program would address the needs of refugees on a number of levels. It directly accesses the healing benefits of art therapy by encouraging refugees to express their feelings through art, and creating visual narratives has been shown to help children give meaning to their experiences and builds confidence (Nabarro, 2005). This program would also provide an income for refugees and may help address the issue of child labor, as many Syrian children are forced to work to support

their families instead of attending school (Gilbert, 2014; Grant & Harper, 2013; UNHCR, 2013). Finally, this idea would help to raise awareness of the issues refugees face as the artist Banksy and other designers have tried to do through artistic expression (Dorsey, 2013; Walsh, 2014).

Considering the emotional well-being of children is as important as addressing their physical needs. The game bag proposed by one family may help establish a feeling of normalcy for children necessary for the healing process, and playing games may also aid in social integration (Hummer, 2013). Organizations like Mercy Corps have identified children as being in need of special attention, and directed activities like this game can help them cope (Quosh, 2013; "Syria: An ongoing crisis," 2014). The plan to help children produce and perform their own opera was the most direct use of art therapy that came out of the workshops and would be beneficial because music, writing, painting and dance have all been found to be of therapeutic benefit to trauma survivors (Schiltz & Schiltz, 2013). The idea of the coloring book chosen by the participants for further development also utilizes art therapy in helping refugee children. The benefits of art therapy can be gained by providing supplies to children, and while ideal, it is not essential to work with a trained therapist to achieve beneficial results (Brunick, 1999; Nabarro, 2005). Providing directed activities for children has been shown to be of benefit (Quosh, 2013), and exercising creativity is an essential way to build resilience (Qouta et al., 2008).

Even though all but one of the participants in these workshops have never lived as a refugee, they were all successful in generating ideas. Each prototyped idea addresses at least one of the problems refugees face as described in the literature review. Not all ideas

were successful in meeting the criteria of utilizing art therapy, but many are practical to implement and captured the interest of the children in workshop three. The coloring book is successful according to all three criteria. These prototypes demonstrate that people outside of the situation can provide valuable input to benefit the lives of refugees.

Research Question 2: Did participants gain empathy?

The second research question this study asked was, "How does participating in a design thinking workshop build empathy for those in need?" To elicit empathy, the participants were presented with videos depicting refugee children in vulnerable situations. Portraying the lives of those in need has become a valuable tool for aid organizations that elicit sympathy as a way of raising donations. The "empathy-helping hypothesis" explains that people are more likely to help others when they vicariously experience the situation and emotions of those who are in need (Fisher & Ma, 2014). In each workshop, at least one person later expressed that viewing the videos touched them and gave them a deeper desire to work to help refugees. Throughout the workshops, the researcher facilitated the completion of the strategies and when the participants seemed stuck asked them questions like, "How would you feel if you were in this situation?" This question was intended to inspire deeper sympathy by prompting the participants to imagine themselves living the life of a refugee, but beyond this the researcher did nothing to influence the ideas the groups prototyped.

The deeper development of empathy in the participants can be seen in the ideas they proposed, some of which would require their further involvement to implement. One group even imagined the life of a hypothetical refugee and wrote a narrative describing how the implementation of their idea to start a mentorship program would impact her life.

The success of this idea depends on the sympathy of the mentors who would volunteer their time to help refugees on an individual basis. Another idea, to invite refugee children to live in the homes of a host family for the duration of the war, brings this personal commitment to a new level. This plan would require families to volunteer to let refugee children live in their homes and care for them, an idea that would likely have a deep impact on those involved. The idea of a coloring book voted as the final idea by the families is one the children designed themselves to be a part of. The children in the workshop want to be the ones to draw pictures for refugee children, and the ensuing discussion of the idea evolved into an ongoing art exchange to have children in the United States sending and receiving drawings to color with refugee children.

Comments made by participants as part of the strategies they completed also demonstrate empathy. The group in workshop one who developed the mentoring program considered ideas through their concept map to create awareness of the lives of refugees by collecting their personal and cultural stories to share on blogs, along with collecting and selling family recipes. This group also wanted to involve refugees in the design thinking process to discover what their solutions might be. The concept behind the solarpowered night-light came from imagining what refugee children must be feeling at night when they are in the dark. Additional concepts discussed by Group A in workshop two were to "humanize the refugee problem to the populations where they are being demonized," and to "find ways to <u>serve</u> others."

Some ideas involved inspiring empathy in the refugees. Group B in the pilot test developed the idea of having children write and perform an opera based on the concept of compassion, and in their brainstorming, wrote down statements like, "[focus] on

exploring ideas to bring peace to their lives and focus outside themselves," "design schools with intentions of allowing children's input," and "sports with intention of learning tolerance and leadership skills." In their prototype they identified their goal as "help[ing] youngsters in camps to develop love, understanding, and compassion for others," and to "lose themselves in concern for others." The group who redesigned the refugee camp included a gardening area that could help children learn to care for others by helping them to care for plants and animals. The other group in the same workshop wrote in their brainstorming, children need "something to take care of," and wanted to give them opportunities to "[learn] about other children from other cultures."

The children in workshop three expressed ways they wanted to create a personal connection to refugee children. During brainstorming, nine-year old Brooklyn wrote, "make them letters and send it to them," and her brother Tyler wrote, "pen pals." The children who proposed the coloring book wanted to be the ones to draw the pictures and use it as a way to share their lives with refugee children. The completion of the creative matrix asked the families to consider how the implementation of the ideas they selected would impact various groups of people and recorded ways the participants expressed empathy. The matrix evaluating the idea for an education kit included statements that the volunteers who help refugees would benefit to "know you are helping others," and, "we are making a difference in someone's life." It was recorded on the matrix for the coloring book that refugee children would benefit by "learn[ing] about the things other kids from other places like," and that "colors help them feel warm inside." The matrix also revealed refugee children would "feel loved," their parents would "learn that other people care,"

and the volunteers creating the coloring books would "feel like they are helping," and that "serving helps people feel happy."

The group evaluating the idea of sponsoring refugee children to live with a host family worried about the negative effects the experience may have on children and added a row to the matrix to consider the drawbacks. These drawbacks include the fact that children would be "taken away from family after leaving their country," and parents would be "concerned about their children" when they are away from them. The matrix for the art-sharing program indicated refugee children would "feel better about themselves by sharing their talents," their parents would "feel that others care," and the people buying the art would "have a way to remember the people they helped." Finally, the group completing the matrix to evaluate the mentorship program wrote that the program would benefit the volunteers and mentors by "learning about another cultures," "helping people," and "making a difference." The creative matrix was designed to aid participants in considering the effects of an idea on the people involved, but beyond this the groups were not instructed to evaluate feelings or other aspects of empathy. There is ample evidence of the empathy felt by the participants found throughout the data collected during the workshops.

The answers to open-ended questions in both the pretest and posttest also reveal statements of empathy. When asked what contributions the participants could make to improve the life of a refugee, most answers in the pretest involved making donations of money or supplies, though Courtney, one of the parents in workshop three, wrote "perhaps offer my home to someone." Her daughter Brooklyn also wrote in the pretest "invite them and their family to live with me" when asked what she could do to help a

friend who was a refugee. Answers to the question of what can be done to improve the life of a refugee in the posttest revealed the participants now felt a more personal connection to refugees. The answers to the question now included, "love," "connecting with them," and, "love and friendship, compassion and understanding." Others added, "with empathy, we can come up with creative solutions to help their quality of life," and "being a voice for them ... form relationships with them." Others wanted to continue their involvement in the project after the workshops, writing, "If I am offered a way to help here I would like to participate," and "I'd be happy to finish working on that prototype if you'd like." The children also displayed empathy in the posttest. When asked in an open-ended question what they thought they could do to help if they had a friend who was a refugee, the answers included, "visit other people so they can feel not alone," and "help other people."

Ideas developed in this study also demonstrate empathy when compared to the issues raised in the literature review. The first step in the design thinking process is to focus on feeling empathy for those the process seeks to help. Developing empathy is not simply a feeling of sympathy for the circumstances of another, but involves listening to other people and making an attempt to view life from their perspective in a non-judgmental way (Barrett-Lennard, 1997; Bohart & Greenberg, 1997; Greenberg & Elliott, 1997). This study challenged the participants to develop deeper levels of empathy for refugees as they completed the design thinking process, and their scores on the pretest and posttest questionnaires demonstrate that design thinking can be successful in developing empathy.

It has been shown empathy can be developed through imagination and role-play when participants focus on the circumstances of others to gain a deeper understanding of their lives (Bohart & Greenberg, 1997). The "empathy-helping hypothesis" also explains that people are more likely to help others when they vicariously experience the situation and emotions of those who are in need, and are then more likely to want to help (Fisher & Ma, 2014). The design thinking process, particularly in the step of empathize, can aid participants in gaining empathy by giving them opportunities to imagine themselves in the place of refugees and think through how they might react in those situations.

The field of design has realized the importance of empathy in recent years. The life experiences and emotions of users have become a consideration in the design process, leading to the development of new solutions in the fields of product design, as well as services and social problems (Mattelmäki, Vaajakallio, & Koskinen, 2013). The results of this study show employing the steps of design thinking in the overall design process can help designers develop deeper empathy and new levels of understanding of the needs of those for whom they are attempting to solve problems.

One study also showed children can develop deeper levels of empathy and that empathy is linked to greater problem-solving skills. Children were asked to imagine other children in different circumstances and it was found they felt a desire to help those in need whether or not they were their friends (Sağkal, Türnüklü, & Totan, 2012). This tendency proved accurate in this study as well. For most of the children, workshop three increased their feelings that children around the world were like them, while some felt more different than refugee children after the workshop. However, this feeling did not lower the scores for other statements regarding empathy in the posttest and showed that

children who are asked to employ empathic understanding will consider the need of another child before social boundaries and want to help them whether or not they are friends (Sierksma, Thijs, & Verkuyten, 2014).

Internal Validity and Limitations

The limitations in this study are important to consider. The intended recipients of the results of these workshops, Syrian refugee children, were not part of this study. Even if such children or refugee children from other conflicts were available to participate in the workshops, it would not be appropriate to expose them to discussions and situations that may cause them to remember or relive traumatic experiences. Only a licensed therapist should do such research. It is for this reason that children from the local community were used to represent refugee children. Ideally, this research would be done under the supervision of a therapist among Syrian refugee children themselves to find solutions to the problems they identify. Since this is not possible for the researcher at this time, the question "How might people who are not refugees themselves use design thinking strategies to help refugee children?" was asked. This study sought to examine whether or not people outside of a situation could contribute solutions by utilizing the design thinking process.

It is also a limitation that a minority of workshop participants were refugees from Syria or other countries in the Middle East, or members of the Islamic faith. One participant in workshop one was a former refugee from the Congo, and other former refugees from Africa and the Middle East were contacted but were unable to attend the workshops. Two participants in each of workshops one and two were Muslim, making Muslim participants a minority and Christian participants the majority in the study, the

opposite of the population of Syria. Another limitation is that no art therapists were able to attend the workshops. The researcher worked with the Utah Art Therapy Association to recruit art therapists and accommodations were made specifically for them, including a change in the location of one of the workshops, but the art therapists who agreed to participate were unable to attend on the day of the workshop. An important aspect of design thinking is the collaboration of multidisciplinary teams to bring new insights into problem solving. The researcher worked diligently to insure the attendance of a variety of participants from different cultural, religious, and professional backgrounds to provide new insights into the problem. If more of the participants were former refugees, members of the Islamic faith, or art therapists, the solutions proposed in the workshops may have incorporated added insights and deepened the benefits to Syrian refugee children.

A total of four workshops were held utilizing various design thinking strategies, and in each workshop the participants worked in small groups. This provided a variety of outcomes and allowed the participants more opportunities to voice their opinions. No one strategy was relied upon to generate all ideas, and each group was assigned participants of differing backgrounds to allow for a greater diversity of opinions. The workshop format of the pilot test was repeated with small changes for workshops one and two to provide a deeper pool of ideas from a wider range of participants. To determine the best ideas from the pilot test and workshops one and two, a third workshop used children and their parents to test the solutions rather than rely solely on the judgment of the researcher. It was also not assumed adults would be the best source of ideas meant to benefit children, or that children would consider all of the variables necessary to implement an idea. For this reason children working with their parents were asked to provide feedback

on the ideas generated by adults. This process, along with the final voting procedure, was intended to remove the opinions and attitudes of the researcher in selecting a final idea for implementation.

During the workshops, the researcher was organizing, managing, and conducting the workshop, and may have missed details that needed to be observed. This was addressed by taking notes, photos, and audio recording each workshop, and preserving the prototypes and collateral produced. All these sources of data were reviewed as the workshop results were analyzed, rather than depending on the memory of the researcher.

After the prototypes were presented to the families in workshop three, the participants were divided into three groups and each group chose two ideas to evaluate using the creative matrix. Matrices were completed for a total of six ideas, and once these ideas were chosen the remaining ideas were eliminated from consideration as a final solution. It is not known why the groups selected certain ideas over others, and in one occasion it was observed that groups were interested in an idea but did not select it. The poster explaining the program for an opera was first selected by children from Group B and Group C, but each of these children chose another idea once they saw the other was interested in it. It is possible the children thought the other group took the idea, or they may have changed their minds. The opera was not evaluated during the creative matrix session and was eliminated. This idea may have proved popular and received votes if a matrix had been completed for it. The results of the final voting may also have been different if all ideas had been evaluated through a creative matrix rather than limiting the ideas to two for each group. The final voting procedure also needs to be considered. Each participant received one first choice and one second choice vote, and the participants

were not asked to explain why they voted for certain ideas. The coloring book received the most votes and it is also the simplest idea to produce and implement. It may be that the coloring book received votes because the participants felt it was the most practical idea to implement rather than the one to provide the greatest benefit to refugee children. The visualize the vote procedure does not provide information on why the votes were cast.

It was also observed that adults and children differ in the ways they approach design thinking, with the children often being more comfortable with creative thinking exercises than adults. In workshop three, the adults and children participated in brainstorming and prototyping together, despite these differences. The children also completed the strategies with their parents and family dynamics unknown to the researcher could have played a role in their decision-making process. The groups may have come up with different ideas if the children were working together rather than with their parents, and workshops one and two may have benefited from involving children as well.

Efforts were made with the pretest and posttest questionnaires to insure validity by basing questions on the Toronto Empathy Questionnaire, but possible problems were observed in the responses to one of the statements. The wording of statement five on both the pretest and posttests for adults was, "The misfortunes of refugees do not disturb me a great deal." Participants were asked to rate this statement on a Likert scale of strongly agree to strongly disagree. It was expected all of the responses would be neutral, disagree, or strongly disagree, but in the pretest one respondent answered strongly agree, and in the posttest one answered agree. When the questionnaires from these individuals

are compared with their pretests and the posttests, the person who answered strongly agree on the pretest had marked strongly disagree on the posttest, and the person who responded with agree on the posttest had marked neutral on the pretest. Either one person had a drastic swing from not caring about the misfortunes of refugees toward caring during the workshop, and the other made a slight move toward caring less, or the statement was poorly worded. This was the only statement using the phrase "do not," and the only statement in which an answer indicating caring would be strongly disagree rather than strongly agree. The wording was likely the cause of confusion for some of the respondents and should be changed if the questionnaire was used in another study.

Recommendations for Future Study

In the future, these workshops may be conducted under the guidance of a licensed art therapist with former refugees, and even with children and families currently living in Syrian refugee communities, to generate further ideas to improve their lives. The strategies developed for use in the design thinking process have a powerful potential to solve problems, and future workshops among refugees may give them the tools they need to address aspects of their lives that those outside a refugee camp would not have the knowledge or experience to consider. A specialized toolkit of design thinking strategies could also be developed to give refugees access to these strategies to use on their own, providing them with opportunities to solve problems free from outside influence. Workshops like those in this study could also be conducted to tackle other global problems. Many ideas from the participants proved to be both practical and of interest to children, and with further work may be developed to help refugee children even though the participants were not Syrian refugees themselves. Future studies may also prove that

engaging people outside of a problem in the design thinking process will provide new solutions for those in need.

The results of this study also have implications beyond the ideas generated in the workshops, though it is hoped the coloring book and other ideas from the workshops will be implemented to benefit Syrian refugee children. Participation in the design thinking process shows promise as a way of developing greater empathy for those in need. Even though the participants cared about refugees before the workshops, they reported higher levels of caring afterwards and left the workshops with a greater urge to help. They also demonstrated a deeper personal connection with the people they were trying to help. This feeling of caring may inspire new thought and action to help others in the future. Furthermore, the questionnaires show the participants developed greater feelings of confidence in their abilities to think creatively and solve problems. This alone is a valuable benefit of design thinking regardless of the ideas produced.

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Appendix A: Development of Research Goals and Questions

There are three types of goals that need to be set at the beginning of a study to successfully focus the research design. The first type of goal is a personal goal, which encapsulates a researcher's motivation for conducting a study, followed by practical goals, which define how a need will be met, and intellectual goals, which are meant to aid in gaining a deeper understanding of a topic (Maxwell, 2013). The personal goal of the researcher in this study is to utilize the process of design thinking to develop new ways in which art therapy can be used to improve lives. This was accomplished through the exploration of various design thinking strategies to help workshop participants tap into their creativity and apply their unique insights to develop ways to support refugee children.

Practical goals identify what the researcher wants to accomplish. In this study the practical goal is to lead workshop participants through a process that will result in a feasible idea that may benefit refugee children, while also evaluating the design thinking process as a tool to address humanitarian problems. The intellectual goal, which is focused on gaining insight, is to explore how design thinking can be used to gain a deeper understanding of the creative process and to explore ways to help people apply design thinking to other issues. It is hoped that workshop participants gained a new set of tools to aid them in developing solutions for other problems they may face.

After these goals were defined, a concept map and interactive model of the research study was created to uncover and develop a visual representation of the concepts of the study, and the relationships between those concepts. A concept map works to clarify the elements of the study and helps to develop a theory as connections are made

between the individual elements (see Figure 39). An interactive model of the research design (see Figure 40) emphasizes how the elements of the study work together to create an integrated whole, with the individual components responding to each other throughout the study (Maxwell, 2013).



Figure 39. Concept map of the potential impact of design thinking on refugee children.



Figure 40. Interactive research model.

Once a concept map is complete, it can be analyzed and any holes in information should be evaluated to develop research questions (Maxwell, 2013). The concept map led to a consideration of how a design thinking workshop may affect the participants, who will likely develop greater empathy for refugees along with new skills to aid them in future problem solving scenarios. It is possible to observe and measure the impact of the workshops on the people who will help to generate ideas for refugee children, and this impact can be measured through the use of questionnaires before and after the workshops. This line of thought led to the following ideas for research questions: "How can people who have not lived in refugee conditions use design thinking strategies to help refugee children?" and "How does participating in a design thinking workshop build empathy for those in need?"

Appendix B: Results of Pilot Testing of Individual Design Thinking Strategies

To assess the feasibility of a number of design thinking strategies, each one was pilot-tested before the workshops began. The participants in this pilot test constituted members of a single family from different generations including grandparents, parents, and children. A family was chosen to replicate the relationships among refugees, who often live as multi-generational family units after they have fled their homes in Syria ("Zaatari: A day in the life," 2013). This relationship among group members is also important because any solutions meant to benefit refugee children will need approval from parents to be successful, and including a family as part of the dialog from the beginning of the research will provide valuable feedback from each generation.

The same family was used to test each of these strategies, but each test was limited to four people and the family members participated in different combinations and at different times. Each strategy introduced a different aspect of the refugee experience as a point of discussion to drive the strategy, and the involvement of the researcher was limited to explaining the purpose and procedures and answering any questions they raised. The participants initiated the discussion and they were not influenced by interactions with the researcher.

Concept Mapping

The first strategy pilot tested was concept mapping, which asked the participants to examine their past experiences camping, an activity that has parallels to life as a refugee (see Figure 41). This strategy proved to have value in rethinking the refugee experience. By examining a camping trip through the eyes of an American family, the creation of a concept map uncovered ways that the experience of a refugee camp can be

improved, especially for children. There are ways to make a refugee camp feel more like an adventure for a child and to reduce some of the fear and apprehension they may have living there.



Figure 41. Final concept map.

The family members who participated in this concept mapping exercise were a father and his three children, boys ages 13 and 11, and a girl age seven. As the discussion about camping began, everyone contributed to the list of concepts as they were written on sticky notes, and it didn't take long before they had ample ideas with which to work. The children were enthusiastic and happy to make a contribution to the discussion, and as they worked, the concept map brought up opportunities for them to share stories and opinions. Even before receiving instructions, the boys grouped the concepts into categories, as it felt like a natural extension of the exercise. The sticky notes made each concept easy to rearrange, and the final concept map represents an accurate visual

illustration of their collaboration, pointing to potential ways the refugee experience can be enhanced.

The results of this concept map highlighted two areas upon which to focus while considering the refugee experience – those of family and finding ways to have fun. First, it is clear from this family's discussion of camping trips that spending time together is central to the experience. They began the exercise by clustering together family members and identifying an important role they each play in the experience. The second area of consideration is how to provide children with opportunities to enjoy their time in the refugee camp and to create positive memories, as the children not only created a cluster devoted to fun but also incorporated fun activities throughout the map.

The experience of camping for an American family has only superficial parallels to living in a refugee camp, but observing the discussion that resulted in the construction of this concept map provided insights into the issues that are likely to be important in the lives of refugee children. Focusing on strengthening families and giving children the opportunity to play are likely to improve circumstances in refugee camps and make them a better place for children to live.

Visualize the Vote

The participants of the affinity clustering activity were also asked to rank the categories they formed during the exercise using the strategy visualize the vote (see Figure 42). The group did this by building on their previous discussion and made judgments as to the value each type of aid may have for refugees by voting on what they thought were the most pressing needs humanitarian aid groups should provide. Then, a second round of voting asked them to assume these most pressing needs were met, to

vote again on which needs were secondary, and to express their opinion on how limited resources should be allocated.



Figure 42. Results of the second round of visualize the vote. To determine criteria for the vote, the participants were told to imagine they worked for a humanitarian aid organization and had to decide how donation money should be spent. They were asked the following questions before they voted, "what do you think is most needed?," "what will give you the most value for the money?," "what can help the greatest number of people?," and "what will be most beneficial for children?"

The participants were then given a blue sticky note for the most important area to fund and two pink notes for secondary areas. They each considered the scenario and criteria and voted independently. All discussion happened after the voting concluded, and the results were unanimous: all four felt that the basic needs cluster should receive all of the money for funding. The group members each described the physical needs of refugees as being more important than any other cluster to the extent that, if these needs were not met, there would be no reason to provide the other categories. The group could not decide on any single element in the category as being more important than the others, and wanted all physical needs to be provided equally. They also voted unanimously on the clusters of secondary importance. The medical care and support groups clusters were both chosen as needing additional funding over education and entertainment, neither of which received any votes.

When the group was asked to vote a second time, they were told that the physical needs of refugees were taken care of, and they could not vote on anything in the basic needs cluster. The results of this second vote reiterated the importance of providing health care to the group. All four of them chose aspects of the medical care cluster as being of primary importance. The other secondary votes began to show some diversity among the participants, but there was still a consensus on how to spend available funds. Specific items in the education cluster received four votes, and the entertainment cluster received two. Education only became a priority for the group after the physical wellbeing of the refugees was insured, and most items in the entertainment cluster were still seen as too frivolous. After the second round of voting the participants were asked to consider the duration of a typical refugee camp. When they were told the conflict had already lasted three years, and the average refugee camp was inhabited for an average of seven years, their outlook changed. They then said that in a long-term situation education and entertainment would become more important, because children may be able to entertain themselves in the short run but would need schooling and constructive play the

longer they remained away from their homes.

Bull's-eye Diagramming

A pilot test of the bull's-eye diagram strategy was conducted next to determine how it could aid participants in prioritizing a set of information based on Abraham Maslow's theory of a hierarchy of needs (see Figure 43). Maslow developed his hierarchy to explain the relationships he found in his clinical practice of psychiatry between various human needs, which seemed to determine behavior patterns. In this hierarchy the physical needs of food and shelter formed the basis of a pyramid upon which all other needs were based. Maslow believed that until these basic needs were met for a person, no other needs were important. When a person did have these needs met, a new set of needs then emerged. The next level of needs was for love and belonging, and when fulfilled, led to the further need of esteem, and finally self-actualization. It is at this highest level in the hierarchy, when all needs are met, a person could engage in creativity and invention (Maslow, 1943). The participants in this strategy session were a grandfather, his son and daughter-in-law, and their 11 year-old son. After an explanation of how the bull's-eye diagram worked, the group was given slips of paper with needs common among refugees printed on them. Each need was coordinated by color, with a different color defining each level of Maslow's hierarchy. The participants were not told of the reasons for the colors and the slips were presented in a random order.



Figure 43. Final bull's-eye diagram.

As each need was discussed, the slips of paper were placed on the bull's-eye individually. The central ring in the diagram was labeled to represent the needs of primary importance, the middle ring those of secondary importance, and the outer ring represented the needs that were tertiary. The discussion based on each of Maslow's physical needs resulted in four of five needs being placed in the primary ring, and one was placed in the secondary ring. Two other needs were also placed in the primary ring, one from Maslow's safety level of need, and another from the love and belonging level. The group considered so many of these needs of primary importance that they cut the slips of paper smaller to get them to fit in the center ring.

The needs placed in the secondary circle consisted of two from Maslow's second level of safety, along with three items from the love and belonging level, two from the esteem, and one from the highest self-actualization level. At this point the group began to recognize a pattern in the needs, as one person remarked, "This is kind of like Maslow's hierarchy of needs." They even wanted to add another circle to the diagram, as they felt another level of differentiation was needed. The needs they placed in the tertiary ring included one from the love and belonging level, three from the esteem level, and four from the self-actualization level.

The group discussion illustrates that the theory behind Maslow's hierarchy of needs holds true for them. Participants felt there are basic needs that must be met, and the physical and safety needs of refugees are paramount. After these primary needs are met, however, there are a number of ways that refugees can be given additional resources. The bull's-eye diagram allowed the group to sort through these many needs and make a judgment on their relative value.

Problem Tree Analysis

The participants in the problem tree analysis session were a set of parents, both in their 30s, and their children, a 14-year-old girl and 12-year-old boy. The exercise began as the group was given a large sheet of paper with a trunk of a tree drawn on it and labeled with the problem statement, "Children in refugee camps have limited opportunities for play." The group first discussed the aspects that defined organized play and agreed that it is an important issue for children (see Figure 44). The causes of a lack of organized play the group identified included physical space, equipment, resources for play, money, health/nourishment, lack of knowledge, coaches, and supervision. The group felt all of these issues would need to be addressed to clear the way for children to have ample opportunities to engage in organized play.



Figure 44. Final problem tree analysis.

Once the participants felt they had exhausted the causes of the problem, they turned to the possible effects. Branches were drawn on the top of the tree diagram and the group began discussing what they felt would happen as a result of a lack of organized play for refugee children. The branches were drawn and labeled with the phrases boredom, forming bonds, teamwork, trust skills, health and happiness, motivation toward adulthood, and mischievousness and crime. The negative aspects of these factors were all seen as a result of not having opportunities to play and the two children especially felt this would be detrimental. They discussed the importance of learning to work together, trusting others, and forming healthy friendships as being important benefits of play, and said children who don't participate in organized play would miss out on these opportunities.

The group worked well together, with the parents explaining the issue to their

children and prompting them to answer rather than leaving them out and filling in the tree diagram themselves. The 14-year-old girl volunteered to write down all of the causes and effects, and drew in the roots and branches. While adolescents can sometimes be hesitant to share their opinions, the parents did a good job of including the children in the discussion without leading them to answer in specific ways. Both children talked about their own experiences playing with friends and felt this would be important to refugee children.

This problem tree analysis proved to be an effective way of directing a conversation and quickly focused on the causes and effects of a problem. The group was able to identify a range of issues in a short amount of time and the format prompted contributions from all participants. This activity was a valuable tool in developing a deeper understanding of a problem and facilitated discussion better than simply asking a group to make a list of causes and effects without a visual metaphor. Through the use of this strategy, the participants gained a deeper understanding of the issues refugee children face based only on their conversation. They did no research to base their conclusions but gained a deeper understanding of the needs of refugees through the discussion, demonstrating how this exercise can produce results with only a modest investment in time. The flexibility of a problem tree analysis lends itself to an exploration of any issue and will produce a variety of results based on those who participate.

Rose, Thorn, Bud

The participants in this group discussion were the same as those in the problem tree analysis, a set of parents, both in their 30s, and their children, a 14-year-old girl and 12-year-old boy. The group was asked to consider the problem statement, "Children in

refugee camps should be given art supplies to play with," and began by identifying the positive aspects related to it. These positive features were written by the father on pink sticky-notes to represent the rose, and consisted of motor skills, beautification, creativity, brain development, mood, teach, learn, emotional outlet, and keep attention (see Figure 45). The group felt that the inclusion of art activities would help a refugee camp become a beautiful and creatively stimulating place, and would be an important way to help children's brains to fully develop as they grow, especially as they processed the complex feelings and trauma of the experiences they had because of war.



Figure 45. Final rose, thorn, bud exercise.

After these positive aspects were all written down, the group was asked to focus on any negative consequences they could identify. At first they didn't think there would be any negatives to the problem statement, but as the discussion continued, they began to identify things that may cause difficulties. These negatives were needs supervision, conflict over resources, non-reusable, fighting over supplies, not seen as essential, mess/litter, and difficulty getting supplies. The group was mainly concerned with wondering how feasible it would be to ship these supplies to a refugee camp, how often they could be delivered, and how they would be paid for.

Next, the group began to consider the possibilities the use of art supplies would bring to refugee children, which were written on green sticky notes. The possibilities identified were assisting children in motor development, abstract thought, creativity informs unique ways to thrive, emotional intelligence, and training ground for future leaders/problem solvers. These possible results of providing refugee children with art supplies are significant, especially in regards to developing abilities to think critically and solve problems. The group felt the positive benefits of art activities would give children hope for a better future and inspire them to work for peace. The participants stressed that the critical thinking skills and creativity involved in creating art would also prove to be important in developing leadership skills.

This rose, thorn, bud exercise provided some insightful comments from the group. Instead of focusing on the details or the feasibility involved in providing art supplies and the positive and negative aspects of what it would take to deliver and maintain them, the group instead discussed the more abstract components of the problem. The positive aspects identified included benefits like creativity and problem solving, and the group discussed the ways that art can improve life rather than being merely a game or a diversion for children. The inclusion of abstract thought, emotional intelligence, and training ground for future leaders as the possibilities of providing access to art supplies all point to the high value the group placed on art activities as a way of helping children to express themselves. The flexibility of the rose, thorn, bud design thinking exercise is notable because it allows for the personality of the group to be expressed. It allowed for

the discussion to take the shape the group wanted and is capable of providing insights into a problem that may not be possible with a simple discussion.

Creative Matrix

The participants in the creative matrix session were a group of six cousins between the ages of four and fourteen, along with the fathers of the children, and their grandmother. They were asked to imagine they were developing a game that could be played by families and a matrix grid was drawn on a large sheet of paper to indicate a group of people who would be involved in such a game for each column, and a benefit the game could provide for these people for each row (see Figure 46). The participants were divided up into three groups with one adult and two children in each group. They were first asked to think of the type of people who they thought would enjoy playing their game and they identified "little kids," "pre-teens and teens," "game developers," and "young parents" as groups that should all benefit from the game. The category "game developers" was included because they thought the people creating the game should enjoy the experience beyond the potential of making money from it.



Figure 46. Filling in the creative matrix.

Once the categories were established, they were asked how the game could benefit these groups by asking the question, "In what way might our game

_____?" The group answered the question with "be fun" and "be educational," followed by "be challenging" and "be a good design," referring to the graphics of the game. The columns and rows were labeled with each of these answers. The participants worked together in smaller groups and were given a pad of sticky notes, with each group using a different color. They began by considering how the first benefit of their game would affect the group in the first column, which corresponded with the statement, "In what way might our game be fun for little kids?" The groups worked individually and wrote their ideas on their sticky notes and then placed the notes on the matrix, with the adult in each group leading the children through each question. All the groups worked through the columns and rows in order, discussing the ways a game can be fun, educational, challenging, and have good graphics for a little child, and then moved on to how each attribute would impact pre-teens, and so forth. Each group contributed at least one idea to each square in the matrix and some contributed multiple ideas. After the groups discussed each category, they brought up their sticky notes to place on the matrix and all groups could see the matrix fill up as they worked. The three teams were able to successfully fill in the matrix with ideas within the time limit.

The creative matrix proved to be successful at generating a number of ideas a team could use to develop a game. Some of the ideas generated were practical ones, while others were more absurd, like "edible game pieces," "the board game smells," and a "stain proof game board," which sparked additional discussion about how fun these features would be in a game. In this regard the surprising nature of the ideas that emerged could lead to unexpected solutions.

Each design thinking strategy is expected to contribute to a deeper understanding of the challenges refugees face and to help workshop participants work together to evaluate solutions. The pilot test showed that each strategy was successful in prompting discussion and allowed the participants to sort complex information and draw conclusions in a short amount of time. The groups were not given a time limit and each strategy took approximately 30 minutes to work through because of the newness of the method to the participants and the researcher. Subsequent uses of each strategy could be completed faster and are likely to produce further discussion.

Concept mapping worked to help the participants explore the range and complexity of the issues refugees face, while organizing the information into manageable clusters revealed patterns the participants were previously unaware of. The bull's-eye

diagram added an additional layer of understanding and allowed subjects to prioritize information and make decisions regarding their value. Visualize the vote effectively gauged the thoughts and opinions of the participants and kept the results of the discussion democratic by allowing each participant to be treated equally. The strategies were easy for adults and children to understand and were viable ways of getting the different age groups to work together. The visual representation of the ideas created in each strategy also made the information more accessible to the children who participated, and each child contributed ideas without prompting or influence from the adults. This is less likely to happen in a discussion on each topic without the use of a design thinking strategy.

Each strategy had value and was considered individually for inclusion in the final set of workshops. After evaluation, concept mapping and the bull's-eye diagram were chosen for workshop one, and the problem tree analysis and rose, bud, thorn exercises were selected for workshop two. In workshop one, the initial brainstorming session will be followed with the use of concept mapping and the bull's-eye diagram to help participants sort through their ideas and decide which will hold the most potential for prototyping. In workshop two, the problem tree analysis and rose, bud, thorn will be used as prompts before the brainstorming begins to help participants reframe the problem and gain a deeper understanding of the issues refugees face. Visualize the vote will be used in all workshops to give participants an opportunity to express their opinions and is expected to be particularly useful in workshop three because it will give children an equal voice along with their parents in determining a final solution. The creative matrix strategy will be used in workshop three to allow the families to evaluate the possible effectiveness of the proposed ideas. All strategies are expected to prompt empathy among the

participants.

As seen in the literature review, design thinking strategies have been used to address only a few issues relating to humanitarian causes with most work conducted through courses held at Stanford and Cornell Universities or by individuals who share their results with OpenIDEO (Altobello & Allister, 2014; Curtis, 2014; Duff-Brown, 2013). Design thinking has potential in the development of products and services for refugees, such as those developed by Architecture for Humanity, the IKEA Foundation, and by students in graduate programs (Hansegard, 2014; "Safe spaces for Syrian refugees," 2013; Sipus, 2009). The United Nations has taken the first steps to consider the possibilities of design thinking through its UNHCR Innovation Lab program, and these strategies could inform their work as they conduct future labs and develop the resulting projects further ("UNHCR innovation," 2014). The limited resources needed to conduct the strategies, along with the rich possibilities of the discussions they prompt, point to design thinking as being an important tool for solving these difficult problems.

Appendix C: Design Thinking Strategy Instructions

Instructions for a Brainstorming Session

Supplies needed:

- Sticky notes in a variety of colors
- Pens in a variety of colors

Time limit: 20 minutes.

Step 1: Divide an assembled multidisciplinary group into smaller teams of three people.

Step 2: Give each team a problem statement to base their ideas on and a selection of the sticky notes and pens.

Step 3: Instruct teams to generate as many ideas as possible in relation to the problem, without regard to feasibility and without making a judgment on the value of the ideas. Participants should look at the problem from different perspectives and include even the ideas they consider outrageous. The team should discuss the issue as they work, using the collaboration as an opportunity to spark new thoughts and build on each other's contributions. No idea is too stupid or simple to be written down and team members should not be afraid of sharing.

Result: A large number of ideas written on sticky notes that can be sorted and analyzed at a later time (Rich, 2003).

Instructions for Concept Mapping

Supplies needed:

- A large sheet of blank paper
- Sticky notes in a variety of colors.
- Pens in a variety of colors.

Time limit: 15 minutes.

Step 1: Divide an assembled multidisciplinary group into smaller teams of three people.

Step 2: Give each team a problem statement to base their ideas on and a selection of the sticky notes and pens.

Step 3: Have the teams generate as many ideas as they can relating to the problem, writing each one down on a sticky note. The ideas collected during a brainstorming session can also be used.

Step 4: Once a large number of ideas are collected, have the team organize the ideas into clusters based on their similarities, and place the clusters together on the blank sheet of paper.

Step 5: After the clusters are defined, instruct the groups to draw lines between the clusters and between individual items that are connected in some way. Label each line with a linking verb that describes this relationship.

Result: A map of ideas clustered together and linked with a web of lines, and words that describe the relationships between the concepts (*Innovating for people*, 2012).

Instructions for a Bull's-eye Diagram

Supplies needed:

• A large sheet of paper with three concentric rings written on it, with the inside ring labeled "primary," the middle ring labeled "secondary," and the outer ring labeled, "tertiary."

- Sticky notes in a variety of colors.
- Pens in a variety of colors.

Time limit: 15 minutes.

Step 1: Divide an assembled multidisciplinary group into smaller teams of three people.

Step 2: Give each team the bull's-eye diagram, a problem statement to base their ideas on, and a selection of the sticky notes and pens.

Step 3: Instruct the team to write a number of ideas relating to the problem on the sticky notes, or use the ideas generated in a brainstorming session.

Step 4: Have the team sort each idea and place the notes on the diagram based on their perceived importance to the problem, with the most important in the center and the least important on the outside ring.

Result: A target-like diagram that organizes a number of ideas from most important to least important (*Innovating for people*, 2012).

Instructions for Visualize the Vote

Supplies needed:

 Sticky notes in two colors, enough for each participant to have one note of one color and two notes of another color, and a collection of ideas to be voted on.
Time limit: 5 minutes.

Step 1: Give each participant one sticky note of one color, and two sticky notes of a second color.

Step 2: Present a selection of ideas or concepts to the group.

Step 3: Have the participants vote on which idea they feel has the most value by placing the first sticky note near it, without discussing their choice.

Step 4: Next, have the participants vote again on two secondary choices with the two sticky notes of the same color, again without discussion.

Step 5: Now that the vote is apparent have the group discuss why the majority chose the winning solution and why others were not chosen.

Result: A consensus as to which ideas are of most value, chosen by a democratic vote (*Innovating for people*, 2012).

Instructions for a Problem Tree Analysis

Supplies needed:

• A large sheet of blank paper with the trunk of a tree drawn in the center, leaving room to draw above and below.

• Pens in a variety of colors.

Time limit: 15 minutes.

Step 1: Divide an assembled multidisciplinary group into smaller teams of three people.

Step 2: Give each team the blank paper with the trunk and a problem statement written on it, and a variety of pens. Have the group draw roots below the trunk and label each one with a word or phrase that describes a cause of the problem.

Step 3: When the causes are identified have each group draw a number of branches stemming from the trunk. Label each branch with an effect of the problem.

Result: A visual metaphor of the causes and effects relating to a problem, helping a team gain a deeper understanding of a complex problem (*Innovating for people*, 2012).

Instructions for Rose, Thorn, Bud

Supplies needed:

- A large sheet of blank paper
- Sticky notes in white, pink, blue, and green.
- Pens in a variety of colors.

Time limit: 15 minutes.

Step 1: Divide an assembled multidisciplinary group into smaller teams of three people.

Step 2: Give each team a problem statement to base their ideas on and a selection of the sticky notes and pens. Have the team identify a large number of ideas relating to the problem and write each one a white sticky note, or use the ideas collected in a brainstorming session.

Step 3: Provide each team with the pink, blue and green sticky notes. Have them discuss the ideas and identify the ones that are positive aspects with the pink notes, those that have negative aspects with blue notes, and those that have potential for a solution with the green notes. The pink ideas represent the rose, the blue represent the thorns, and the green represent the buds.

Result: A collection of ideas sorted by their positive and negative attributes, and the identification of the ideas that have possibilities, helping the team gain a deeper understanding of the problem (*Innovating for people*, 2012).

Instructions for a Creative Matrix

Supplies needed:

- A large sheet of blank paper with a five cell by five cell grid drawn on it.
- Sticky notes in different colors, one color for each team.
- Pens in a variety of colors.

Time limit: 15 minutes.

Step 1: Divide an assembled multidisciplinary group into smaller teams.

Step 2: Ask one participant to label the columns of the grid drawn on the large sheet of paper to indicate groups of people related to the problem. Then label the rows with aspects of a solution to the problem, phrased as a question like, "How might we

_____?," "In what ways might we _____?" or "How to

?" as appropriate.

Step 3: Have each group work together to brainstorm ideas that address the parameters of each intersecting row and column on the matrix, writing each idea on a separate sticky note. Groups may write down as many ideas as they wish. As ideas for each box are completed have the team put the sticky note on the corresponding box of the matrix. Continue until all boxes are filled.

Result: A visual metaphor illustrating many possible solutions to a problem as they relate to the various groups of people involved (*Innovating for people*, 2012).

Appendix D: Script for Pilot Workshop and Workshops One and Two

1. Introduction to the crisis. (20 minutes)

• Before workshop begins: have participants complete the pretest questionnaires.

Thank you for coming. I am grateful you are willing to give up some of your time to help me. If at any point you don't want to continue with the workshop you are free to leave this at any time. If you feel upset and need to take a break or you wish to stop you can leave and come back at any time without any penalty to you.

• Discuss design thinking.

• Discuss the study timeline.

We will start by watching three short videos to introduce you to some of the people who are impacted by the Syrian conflict. The first video features a Syrian refugee family living in a tent in Lebanon, the second a Syrian refugee family living in the Zaatari refugee camp in Jordan, both made by UNICEF to illustrate the lives of refugees. The third video is an interview from *60 Minutes* showing the use of art therapy to help children who have experienced similar trauma living in Israel and Palestine.

• Video 1, "Meet one of the Syrian refugee children,"

• Video 2, "A young Syrian girl's life as a refugee"

• Video 3, "The lesson of war" (from 5:16-8:00 and 10:19-11:06)

• Discuss Syrian refugee problem.

- 4 million refugees - fluid situation – ISIS means it is no longer just a civil war – lost generation of children – loss of education – child labor – most children have witnessed death and violence – long term effect on them Art therapy is defined as the creative art-making process used as therapy. There are no child psychologists working in the refugee camps, and while art therapy can only be done by a trained art therapist, art activities can still benefit children. Art can be fun and educational, and can build confidence and develop skills.

• Questions:

How do you think you would react if this were your childhood?

What do these children need?

How will this experience affect them as they grow up?

2. Brainstorming. Participants are divided into two smaller groups (20 minutes)

We will begin by brainstorming ideas inspired by art therapy that may help refugee children. Take the sticky notes and pens and write down any ideas you may have. Don't censor yourself. Write down everything you think of and share it with your group. Don't worry about whether the idea is practical or feasible. Write down something outrageous. An idea you think is stupid or too simple may spark an idea for someone else. The goal is quantity over quality. Ideas can be fun or educational. They can be products or processes or services. Write down anything and everything. I want to see which group can fill up the most sticky notes.

3. **Refine Ideas.** Groups will review their work and quickly identify the most promising ideas. (10 minutes)

Time is up. Now look at all of your ideas. In the first step you were writing down ideas without editing yourself. Take a few minutes and sort your ideas based on their value. Identify which ideas are possible or the ones children will like the most. Which are your best ones? Which ones are terrible? If evaluating these ideas spark new ones, write them down too. Move your post it notes so the best ideas are clustered together.

Start a new brainstorm and write down 20 more ideas. Add them to your cluster.

4. Develop Ideas. Groups will then be assigned to complete a design thinking strategy.(25 minutes)

Now you have identified your strongest ideas. Each group will complete a different design thinking strategy to further refine and develop your ideas.

Here is a kit containing the instructions and supplies you need to complete a strategy, which will help you evaluate your ideas. When this step is complete you will have a better understanding of which of your ideas has the most potential.

- Group 1: Concept Mapping
- Group 2: Problem tree analysis

5. Prototype. (25 minutes)

Time is up. With your strategy complete you have a better idea of which of your ideas will benefit refugee children the most. Now choose one idea and work together to build a prototype of it. Each of your prototypes will be different from the other groups. Use the art supplies to build a simulation of what your idea is and how it will work.

6. **Evaluate.** Finally, participants will quickly present their ideas to the other groups, discuss the pros and cons of their prototyped idea, and identify the next steps they would take to implement them. (20 minutes)

Time is up. Each group will now take 5 minutes to share your prototype with the others. Explain your idea and discuss how it will work. What are the pros and cons? Tell us what steps you think would be next to implement your idea.

7. After the workshop participants will complete the posttest questionnaire.
Appendix E: Workshop Questionnaires

Page one of pretest questionnaire for adults in all workshops, completed before each workshops took place.

Workshop Questionnaire Pre Test		P	'articipar	nt #	
Below is a list of statements. Please read each statement careful There are no right or wrong answers or trick questions. Answer	lly and mark the each question	e box that re as honestly	epresents ho as you can.	ow you feel.	
1. I am familiar with the conflict in Syria.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strong disagre
2. Refugees need help from the international community.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strong disagre
3. I am able to help Syrian refugees in a way other than with a monetary donation.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strong disagre
 I can contribute solutions to serious world problems. 	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strong disagre
5. The misfortunes of refugees do not disturb me a great deal.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strong disagre
6. I get a strong urge to help when I see someone who is in need.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strong disagre
7. The Syrian people are like me.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strong disagre
8. I am a creative problem-solver.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strong disagre
I can make a difference in the life of a refugee, even if I never meet one.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strong disagre
10. When I see someone in need I feel protective towards him\her.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strong disagre
Turn page over for additional questions.					

Page two of pretest questionnaire for adults in all workshops, completed before each workshops took place.

11. What contribution can you make to improve the life of a refugee?

12. What contribution can you make to solving serious world issues?

Page one of posttest questionnaire for adults in all workshops, completed at the conclusion of each workshop. The list of statements is identical to those on the pretest questionnaire

Below is a list of statements. Please read each statement carefull There are no right or wrong answers or trick questions. Answer e	y and mark the box that represents how you feel. each question as honestly as you can.
1. I am familiar with the conflict in Syria.	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
 Refugees need help from the international community. 	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
 I am able to help Syrian refugees in a way other than with a monetary donation. 	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
 I can contribute solutions to serious world problems. 	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
5. The misfortunes of refugees do not disturb me a great deal.	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
6. I get a strong urge to help when I see someone who is in need.	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
7. The Syrian people are like me.	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
8. I am a creative problem-solver.	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
 I can make a difference in the life of a refugee, even if I never meet one. 	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
10. When I see someone in need I feel protective towards him\her.	1. Strongly agree 2. Agree 3. Neutral 4. Disagree 5. Strongly disagree
Turn nade over for additional questions	



Page two of the posttest questionnaire for adults in all workshops, completed at the conclusion of each workshop. Open-ended questions 13 and 14 are new.

Workshop Questionnaire Pre Test				
Illy and mark the reach question	e box that as honest	represents ly as you car	how you fee n.	I.
1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
d you do to h	elp then	n?		
	Illy and mark the reach question 1. Strongly agree 1. Strongly agree	Illy and mark the box that reach question as honest 1. Strongly agree 2. Agree 1. Strongly 2. Agree	Participal Ily and mark the box that represents is reach question as honestly as you can 1. Strongly 2. Agree 3. Neutral 1. Strongly 2. Agree 3. Neutral 4. Strongly 2. Agree 3. Neutral 1. Strongly 3. Agree 3. Neutral 1. Strongly 3. Agree 3. Neutral	Participant # Illy and mark the box that represents how you feereach question as honestly as you can. 1. Strongly agree 2. Agree 3. Neutral 4. Disagree 1. Strongly agree 2. Agree 3. Neutral 4. Disagree

Pretest questionnaire for children, completed before workshop three took place.

Workshop Questionnaire Post Test	Participa	ant #			
Below is a list of statements. Please read each statement careful There are no right or wrong answers or trick questions. Answer	lly and mark t each questio	the box that n as honest	t represents ly as you car	how you fee n.	L
1. I like helping others.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
2. I am creative.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
3. Children from Syria like the same things I do.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
4. I can help adults to solve serious problems.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
5. When I see other children who are sad, I feel sad too.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
6. Refugee children need help.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
7. I am a good artist.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
8. Children in other parts of the world are like me.	1. Strongly agree	2. Agree	3. Neutral	4. Disagree	5. Strongly disagree
9. What can you do to solve problems in your life?					
10. If you had a friend who was a refugee what could	l you do to	help then	n?		

Posttest questionnaire for children completed at the conclusion of workshop three.

Appendix F: Workshop Questionnaire Results

Pilot workshop pre test (n=8).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	2	3	2	0	1
Syria.					
2. Refugees need help from the	2	4	2	0	0
international community.					
3. I am able to help Syrian refugees in	0	1	3	3	1
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	0	4	2	2	0
world problems.					
5. The misfortunes of refugees do not	0	0	3	3	2
disturb me a great deal.					
6. I get a strong urge to help when I	2	6	0	0	0
see someone who is in need.					
7. The Syrian people are like me.	0	2	3	0	3
8. I am a creative problem-solver.	0	5	3	0	0
9. I can make a difference in the life	0	3	5	0	0
of a refugee, even if I never meet one.					
10. When I see someone in need I feel	1	5	2	0	0
protective towards him/her.					

Workshop one pre test (n=7).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	0	7	0	0	0
Syria.					
2. Refugees need help from the	4	3	0	0	0
international community.					
3. I am able to help Syrian refugees in	1	2	4	0	0
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	2	2	3	0	0
world problems.					
5. The misfortunes of refugees do not	0	0	0	3	4
disturb me a great deal.					
6. I get a strong urge to help when I	4	3	0	0	0
see someone who is in need.					
7. The Syrian people are like me.	1	3	3	0	0
8. I am a creative problem-solver.	1	5	1	0	0
9. I can make a difference in the life	1	6	0	0	0
of a refugee, even if I never meet one.					

10. When I see someone in need I feel	0	5	2	0	0
protective towards him/her.					

Workshop two pretest (n=10).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	4	4	1	1	0
Syria.					
2. Refugees need help from the	7	3	0	0	0
international community.					
3. I am able to help Syrian refugees in	2	3	4	1	0
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	2	6	2	0	0
world problems.					
5. The misfortunes of refugees do not	1	0	0	5	4
disturb me a great deal.					
6. I get a strong urge to help when I	6	3	0	0	1
see someone who is in need.					
7. The Syrian people are like me.	4	5	1	0	0
8. I am a creative problem-solver.	4	4	2	0	0
9. I can make a difference in the life	3	6	1	0	0
of a refugee, even if I never meet one.					
10. When I see someone in need I feel	3	7	0	0	0
protective towards him/her.					

Workshop three adult pre test (n=6).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	1	5	0	0	0
Syria.					
2. Refugees need help from the	2	4	0	0	0
international community.					
3. I am able to help Syrian refugees in	0	5	1	0	0
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	0	4	2	0	0
world problems.					
5. The misfortunes of refugees do not	0	0	0	3	3
disturb me a great deal.					
6. I get a strong urge to help when I	2	4	0	0	0
see someone who is in need.					
7. The Syrian people are like me.	1	3	2	0	0
8. I am a creative problem-solver.	0	3	3	0	0

9. I can make a difference in the life	1	5	0	0	0
of a refugee, even if I never meet one.					
10. When I see someone in need I feel	1	5	0	0	0
protective towards him/her.					

Pretest results for all workshops (n=31).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	7	19	3	1	1
Syria.					
2. Refugees need help from the	15	14	2	0	0
international community.					
3. I am able to help Syrian refugees in	3	11	12	4	1
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	4	16	9	2	0
world problems.					
5. The misfortunes of refugees do not	1	0	3	14	13
disturb me a great deal.					
6. I get a strong urge to help when I	14	16	0	0	1
see someone who is in need.					
7. The Syrian people are like me.	6	13	9	0	3
8. I am a creative problem-solver.	5	17	9	0	0
9. I can make a difference in the life	5	20	6	0	0
of a refugee, even if I never meet one.					
10. When I see someone in need I feel	5	22	4	0	0
protective towards him/her.					

Pilot workshop posttest (n=8).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	3	4	0	1	0
Syria.					
2. Refugees need help from the	5	3	0	0	0
international community.					
3. I am able to help Syrian refugees in	0	6	2	0	0
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	1	7	0	0	0
world problems.					
5. The misfortunes of refugees do not	0	1	0	3	4
disturb me a great deal.					
6. I get a strong urge to help when I	2	6	0	0	0
see someone who is in need.					

7. The Syrian people are like me.	0	5	0	1	2
8. I am a creative problem-solver.	0	7	1	0	0
9. I can make a difference in the life	1	7	0	0	0
of a refugee, even if I never meet one.					
10. When I see someone in need I feel	2	6	0	0	0
protective towards him/her.					

Workshop one posttest (n=8).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	2	6	0	0	0
Syria.					
2. Refugees need help from the	6	2	0	0	0
international community.					
3. I am able to help Syrian refugees in	2	6	0	0	0
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	4	4	0	0	0
world problems.					
5. The misfortunes of refugees do not	0	0	2	3	3
disturb me a great deal.					
6. I get a strong urge to help when I	4	4	0	0	0
see someone who is in need.					
7. The Syrian people are like me.	4	2	1	1	0
8. I am a creative problem-solver.	2	6	0	0	0
9. I can make a difference in the life	5	3	0	0	0
of a refugee, even if I never meet one.					
10. When I see someone in need I feel	5	3	0	0	0
protective towards him/her.					

Workshop two posttest (n=10).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	5	3	1	1	0
Syria.					
2. Refugees need help from the	8	2	0	0	0
international community.					
3. I am able to help Syrian refugees in	4	6	0	0	0
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	3	7	0	0	0
world problems.					
5. The misfortunes of refugees do not	0	0	0	4	6
disturb me a great deal.					
6. I get a strong urge to help when I	6	4	0	0	0

see someone who is in need.					
7. The Syrian people are like me.	5	5	0	0	0
8. I am a creative problem-solver.	5	5	0	0	0
9. I can make a difference in the life	4	6	0	0	0
of a refugee, even if I never meet one.					
10. When I see someone in need I feel	5	5	0	0	0
protective towards him/her.					

Workshop three adult posttest (n=7).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	2	5	0	0	0
Syria.					
2. Refugees need help from the	4	3	0	0	0
international community.					
3. I am able to help Syrian refugees in	2	5	0	0	0
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	1	4	2	0	0
world problems.					
5. The misfortunes of refugees do not	0	0	0	4	3
disturb me a great deal.					
6. I get a strong urge to help when I	2	5	0	0	0
see someone who is in need.					
7. The Syrian people are like me.	1	6	0	0	0
8. I am a creative problem-solver.	1	3	3	0	0
9. I can make a difference in the life	3	4	0	0	0
of a refugee, even if I never meet one.					
10. When I see someone in need I feel	2	5	0	0	0
protective towards him/her.					

Posttest results for adults in all workshops (n=33).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I am familiar with the conflict in	12	18	1	2	0
Syria.					
2. Refugees need help from the	23	10	0	0	0
international community.					
3. I am able to help Syrian refugees in	8	23	2	0	0
a way other than with a monetary					
donation.					
4. I can contribute solutions to serious	9	22	2	0	0
world problems.					
5. The misfortunes of refugees do not	0	1	2	14	16
disturb me a great deal.					

6. I get a strong urge to help when I	14	19	0	0	0
see someone who is in need.					
7. The Syrian people are like me.	10	18	1	2	2
8. I am a creative problem-solver.	8	21	4	0	0
9. I can make a difference in the life	13	20	0	0	0
of a refugee, even if I never meet one.					
10. When I see someone in need I feel	14	19	0	0	0
protective towards him/her.					

Pretest for children in workshop three (n=7).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I like helping others.	4	3	0	0	0
2. I am creative.	4	2	0	1	0
3. Children from Syria like the same	0	3	3	1	0
things I do.					
4. I can help adults solve serious	1	3	2	1	0
problems.					
5. When I see other children who are	2	1	4	0	0
sad, I feel sad too.					
6. Refugee children need help.	5	2	0	0	0
7. I am a good artist.	2	3	2	0	0
8. Children in other parts of the world	1	2	3	1	0
are like me.					

Posttest for children in workshop three (n=8).

Question	Strongly	Agree	Neutral	Disagree	Strongly
	Agree				Disagree
1. I like helping others.	6	2	0	0	0
2. I am creative.	5	2	0	1	0
3. Children from Syria like the same	2	1	3	2	0
things I do.					
4. I can help adults solve serious	5	2	0	1	0
problems.					
5. When I see other children who are	3	4	1	0	0
sad, I feel sad too.					
6. Refugee children need help.	7	1	0	0	0
7. I am a good artist.	4	3	1	0	0
8. Children in other parts of the world	2	3	1	2	0
are like me.					