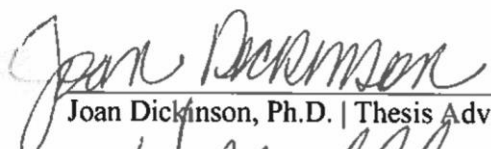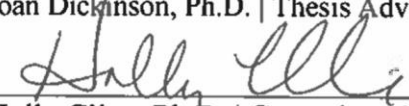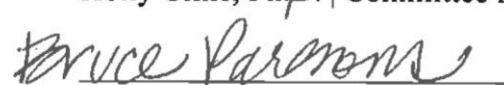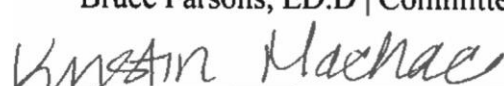Joel M. Croichy

Exploring Joy and Learning in Low-Income Schools using Design-Thinking Strategies.

M.F.A. Department of Design Thinking, 2019 Radford University

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ABSTRACT:

This study explored joy and learning in low-income schools using design-thinking strategies. The researcher gathered 29 individuals consisting of teachers, former students, parents of former students, administrators, counselors, and church members who come from and work in low-income schools. The researcher conducted a 10-minute activity with children ages 7-10, who attend Sunday school, where they created collages of images that showcased what brings them joy in general. In addition, two individuals who previously attended low-incomes schools journaled their experiences.

Upon completion of the Sunday school activity and journaling, two workshops were conducted. The first workshop involved three design-thinking methods: rose, thorn, bud, affinity clustering and statement starters. The intention of these workshops was to identify patterns, positives, negatives, and possibilities associated with student learning and joy in low-income schools. The second workshop consisted of two design-thinking methods: round robin and visualize the vote, where participants shared ideas and passed them along until an unconventional solution was found.

Results indicated that building a sense of safety in school and mental toughness by overcoming adversity could help provide joy, while poor conditions (lack of technology, gangs) in low-income schools leads to higher dropout rates. While eight patterns emerged from the affinity clustering exercise (e.g., positive communities, poor building conditions, lack of financial support, etc.), participants focused on creating stability in schools as the most important feature. Through the round robin exercise, participants created a program that enhanced free activities for low-income students inside and outside of school, including bowling, park access, dancing, music, and reading. These activities could engage learning, create constancy, and create joy.

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INTRODUCTION:

Poverty and education are wicked problems in the U.S. today (Kristof, 2012). For example, there are more than seventy-two million children under the age of 18 years old and over forty-six million of them are living in poverty (DeNavas-Walt & Proctor, 2014; U.S. Census Bureau, 2014). In addition to the poverty statistics cited above, more than two million children in the U.S. are homeless (American Institutes, 2013). In the classroom, homeless children are three times more likely to have emotional and behavioral issues than non-homeless children (Aratani, 2009).

Unfortunately, living in poverty could have a negative impact on a child's school performance and health. Because education is not a priority, the student may not be able to build a connection and passion for his or her academic and future success. With inadequate resources in public schools in inner-city neighborhoods, students are less exposed to technology, books, after-school programs, volunteering, and other learning opportunities, which are essential for students to develop a love of learning. In other words, kids who are hungry, have developmental delays, are homeless, or live below the poverty line often drop out of school and never experience the joy of learning. In 2014, for example, the dropout rate for 15-24 year olds from low-income families was 9.4% and 5.4% for middle-income families (NCES, 2014). Why the disparity?

As a kid growing up and attending a low-income school, I did not find the information interesting and I was often bored in school. My high school experience was an unusual one because I attended four different public high schools all located in low-income communites. It was difficult for my former classmates and me to learn because of the gang presence. Gang activity did not just occur outside of school in the surrounding neighborhoods, but inside schools as well. I witnessed fights and brawls between rival gangs, and there was no way to avoid gang members because they were in every classroom throughout the school. I am truly grateful that I managed to

navigate through this broken educational system. When gang members disrupt school activities, how can you learn? When you spend much of your time fearful of the students in your own school, how can school be fun and interesting?

Based on the demographic information cited above and my own personal experience, I will explore joy and learning in low-income schools using design-thinking strategies. "Approximately 11 percent of students in middle and high schools across the country report the presence of gang activity in their schools" (Oudekerk, 2017, p. 32). With not enough resources in public schools in inner-city neighborhoods, most students may struggle due to the lack of exposure to books and other educational resources. On top of that, schools with the presence of gang activity can make it even more diffcult for students to focus in the classroom. "Gang affiliation is not something that students leave behind when they enter the school building. If a gang presence exists at school, it cannot be ignored" (Oudekerk, 2017, p. 33).

DEFINITION OF TERMS:

Affinity Clustering:
A graphic technique for sorting items according to similarity.

Charter Schools:
A publicly funded independent school established by teachers, parents, or community groups under the terms of a charter with a local or national authority.

Concept Poster:
A presentation format illustrating the main points of a new idea.

Design Thinking:
Refers to the cognitive, strategic, and practical processes by which design concepts (proposals for new products, buildings, machines, etc.) are developed by designers and/or design teams.

Journaling:
An activity that invites people to record personal experiences in words and pictures.

Joy:
The emotion evoked by well-being, success, or good fortune or by the prospect of possessing what one desires.

Learning:
The acquisition of knowledge or skills through experience, study, or by being taught.

Low-income School:
Schools with high numbers or high percentages of children from low-income families.

Magnet School:
A public school offering special instruction and programs not available elsewhere, designed to attract a more diverse student body from throughout a school district.

Rose, Thorn, Bud:
A technique for identifying things as positive, negative, or having potential.

Round Robin:

An activity in which ideas evolve as they are passed from person to person.

Statement Starters:

An approach to phrasing problem statements that invites broad exploration.

Visualize the Vote:

A quick poll of collaborators to reveal preferences and opinions.

LITERATURE REVIEW:

Problems Associated with Low-Income Schools

Poverty is complicated because it can cause various challenges for low-income children and their families. What are the ways to resolve these vast issues? Many individuals and organizations have developed programs inside and outside of schools in inner-city neighborhoods. These programs often help keep students productive outside of school and keep them off the streets. In Philadelphia, Pennsylvania, the American Institutes of Architects (AIA), a nonprofit organization for architects, applied design thinking when launching Charter High School for Architecture & Design (CHAD), a fully design-based curriculum charter school (Hanna, 2019, p. 20). What makes CHAD stand out among other charters schools in this district is that it hires full-time college admission counselors and all students in every grade are required to take design classes (Hanna, 2019, p. 23). Students can choose one of the six design majors: Architecture, Graphic Design, Fashion Design, Industrial Design, Environmental Design, and Design Technology.

CHAD also partners with local professional design and architecture organizations to provide mentorship programs for its students. Together CHAD and these organizations were able to develop after-school extracurricular activities such as bowling, comic con, cooking club, fashion club, student council/government, and video gaming tournaments (Hanna, 2019, p. 21). Due to charter laws, the most popular charters require potential students to be admitted by a random lottery drawing, which makes enrolling into the school difficult (Guggenheim, 2010, September 24; Waiting for Superman). "Most of [Philadelphia] 87 charters participated in the [lottery system], which allowed parents and students to apply to multiple charters and drew 120,000 applications last year" (Hanna, 2019, p. 23). With charter schools being tough to get accepted, students from

low-income neighborhoods may have no other options but to go to their district public school and face common challenges.

Children who grow up in low-income neighborhoods often have parents who are not present in the lives affecting their school attendance and behavior (Guggenheim, 2010, September 24; Waiting for Superman). The United States of America has the largest prison population in the world, and since the 1970s, the U.S.'s prison population has quadrupled to over two million (Singer, 2014). Students who have family members in prison will bring problems from their home and crime in their neighborhoods to school (Guggenheim, 2010, September 24; Waiting for Superman) (see Figure 1).

Figure 1. School to Prison Pipeline

What is the school-to-prison pipeline? The school-to-prison pipeline is policies that move America's children, more commonly, students who are at risk, away from learning in the classroom, and into the criminal justice system. There are insufficient resources, classrooms are overcrowded, and there are not enough qualified teachers, textbooks, counselors, and special education programs. Schools in low-income neighborhoods are also overpopulated. Teachers are

stressed out, afraid to be judged, and possibly lose their job because of poor student performance

on Common Core assessments (Singer, 2014). From the 5th - 7th grade, students go from B

students to D students (Guggenheim, 2010, September 24; Waiting for Superman). When these

students enter high school, they will be far behind academically. Each year, three million students

drop out of high school in America (Amurao, 2014). Schools with high dropout rates are called

"dropout factories." Approximately 17% of students attend a dropout factory, and 33% of minority

students attend a dropout factory. In America, 75% of crimes are committed by high school

dropouts (Amurao, 2014) (see Figure 2).
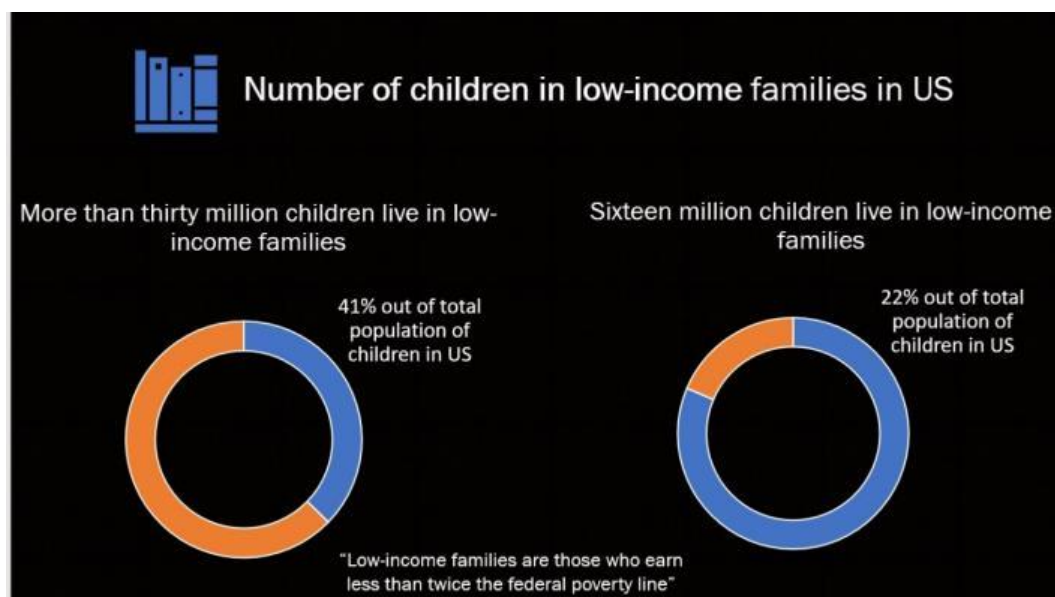
Figure 2. Number of children in low-income families in US

It is common to find armed officers patrolling school hallways in under-resourced schools

(Singer, 2014). These officers usually have little to no training in working with students. There is a

school-to-prison pipeline in the United States, especially in low-income neighborhoods (Singer,

2014). Due to lack of resources, removing low performing students, and responding to school

shootings, inner-city schools started to adopt zero-tolerance policies. These policies enforce strict

regulations, which include banning against contraband and suspending students who misbehave

(Singer, 2014). According to Andre Perry, the dean of urban education at Davenport University, "The trouble is that when students are out of school, they're still learning — just not the things society wants them to" (Singer, 2014, p. 43). Unfortunately, many school districts do not allow students who are suspended and expelled to receive homework or tutoring, and as a result they fall further behind other students. Left unsupervised, students who are suspended from school are more likely to get involved in crime, ultimately falling into the juvenile justice system. The youth in inner-city communities often turn to gangs when they are pushed away from school, or when they need protection from other gangs (Singer, 2014). Many young individuals who join a gang come from broken homes, may not know their biological parents, do not have positive people around them, or never felt love before (Singer, 2014). In an interview with sociologist Deanna Wilkinson and a gang member, that gang member explained, "I grew up as looking for somebody to love me in the streets…I ain't got nobody to give me love, so I went to the streets to find love" (Fagan & Wilkinson, 1998, p. 89) (see Figure 3).
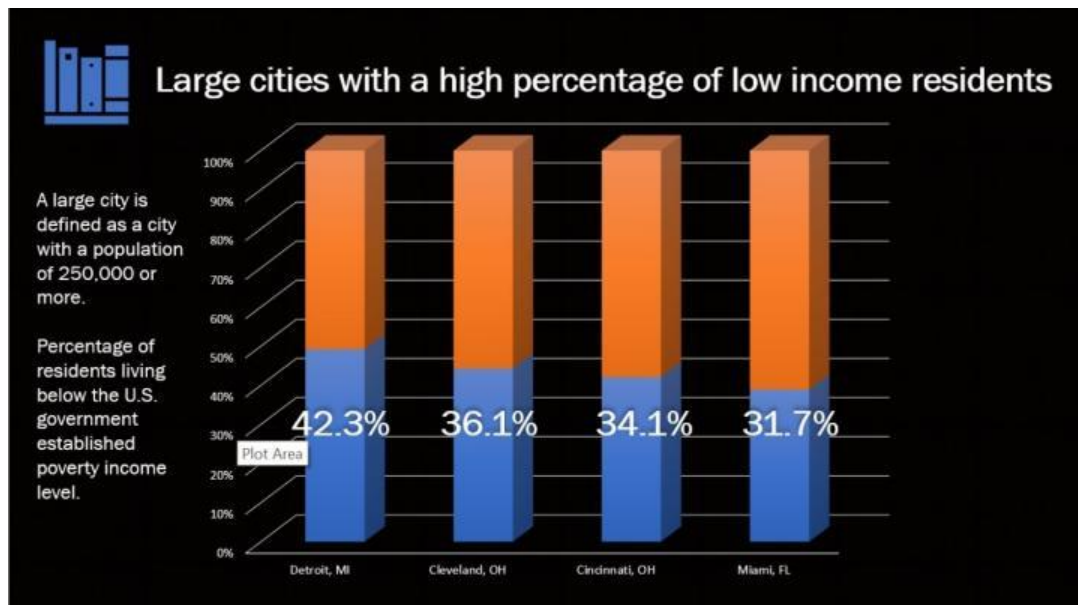
Figure 3. Large cities with a high percentage of low income residents

Within the African-American community, 72% of kids are born to single low-income women, which increases the risk of child abuse, violence, and educational failure, and without a father figure, young boys are drawn to joining gangs (Burnett, 2014). Street gangs terrorize the neighborhood, including public schools, which makes it difficult for students to learn, and teachers to work. Gangs' presence in schools can increase tensions among students, staff, and other gangs (Burnett, 2014). Clearly problems exist in low-income schools. Gang violence, drugs, inadequate resources, incarceration, hunger, poverty, homelessness, and lack of father figures have been studied extensively. What is missing, however, is the engagement: love or joy for learning that could allow low-income kids to overcome these various struggles. "Instead of trying to get children to buckle down, why not focus on getting them to take pleasure in meaningful, productive activity, like making things, working with others, exploring ideas, and solving problems?" (Engel, 2015, p. 45). Schools and programs across the United States of America have created different strategies to bring a sense of joy to learning in low-income public schools.

Different Approaches to Low-Income Schools

Charter High School of Architecture & Design (CHAD) located in Philadelphia, Pennsylvania is a 4-year, tuition-free public school. The school opened in 1999, and its educational curriculum is entirely design-based. CHAD's mission is to educate and inspire urban students by utilizing design instruction to accomplish assignments. Half of its students are currently on welfare, while 90% of them qualify for free or reduced-price lunches. Their design-based curriculum exposed CHAD students to the architecture industry and allows them to develop and enhance their collaboration skills. Due to CHAD's success, many public schools are starting to see the benefits of design instruction and lessons. Students are learning by design at CHAD.

Sean Canty, a 2005 CHAD graduate, was drawn to the creativity side of architecture. Canty was able to appreciate architecture in America the moment he walked into CHAD because the

school is located one block away from Philadelphia's historic core. During his sophomore year, Canty interned at KSS Architects, a full-service architecture, interior design, and planning firm in Philadelphia, PA. While interning at KSS Architects, Sean gained more exposure to the production and excitement of the architecture industry, gained real-world experience, and networked with architectural designers.

In the state of Connecticut, $2 billion was spent to expand magnet schools in urban communities (Frahm, 2010). Casey Cobb, a University of Connecticut researcher, revealed that "children from Connecticut's poorest cities who attended racially integrated magnet high schools made greater gains in reading and math than did students in traditional city schools" (Frahm, 2010, p. 43). Tim Sullivan, principal of the Classical Magnet School in Hartford, mentioned that most magnet schools usually offer excellent teachers and staff, high-quality lessons and courses, and out of school activities that educate their students (Frahm, 2010). Classical Magnet School has a robust theater program and college-prep courses, which include subjects such as Latin and Shakespeare (Frahm, 2010). Magnet schools in urban districts in Connecticut only reach a low percentage of students, but these schools do an incredible job providing a healthy environment for students to learn and interact with their peers than other schools in the neighborhood (Frahm, 2010).

Magnet schools' students focus on Fine and Performing Arts, International Baccalaureate, International Studies, Micro Society, Career and Technical Education (CTE), and Science, Technology, Engineering, and Mathematics (STEM) (Signer, 2014). Students who attend magnet schools are less likely to skip school or miss classes. At Hartford Capital Preparatory Magnet School, students are required to wear blazers and ties and can enroll in college courses during their junior and senior year.

Using Technology as a Learning Partner to Improve Learning and Create Joy

Computers As Tutors: Solving the Crisis In Education is a thought-provoking book that explains that machines should be considered as learning partners for children in this digital age. The author, Frederick Bennett, Ph.D., explores how students' skills in reading, math, and science are declining more over the years and computers can help solve this crisis. Furthermore, teachers are frustrated with many tasks, over-crowded classrooms, low school budgeting, and cannot meet important deadlines due to limited hours available in the workweek. Unfortunately, teachers cannot commit quality hours to students who are struggling and need additional help. Computers can have a significant impact on children because of their non-judgmental behavior and can go over lessons until the child fully understands them. Combining actual teachers with computer tutors can help impact all schools no matter where that school facility operates.

Computerized education can be practical with younger students. School officials in Indian River County, Florida successfully created a high school program that increased high school graduation rates within this county and then decided to utilize their resources to help younger students. "They began identifying students in the third or fourth grade who were developing patterns that made them likely dropouts later" (Bennett, 1999, p. 44). Similar to the high schoolers, young students in this county were behind academically and did not show any interest in school. At first, school authorities and people within the community were unsure of how young students would do in a computerized learning environment and were afraid that they would not receive the same success as with the high schoolers. However, these school officials were met with incredible results. "Students, who had no interest in school and were failing consistently, suddenly began to learn. They not only learned; they enjoyed it" (Bennett, 1999, p. 43).

What was most impressive and surprising to teachers was that students achieved two to three academic successes within only one school year because they loved what they were learning.

This program also helped unite students from all levels within the county. "Officials even brought students from the high school at-risk program to encourage the grade school students. Shortly before, the high school students themselves had been classified as at-risk students" (Bennett, 1999, p. 43). Amazingly, another result was that children who entered the program behind academically, often left this program ahead of their studies more than children who were not classified as at-risk (Bennett, 1999, p. 43).

 At-risk programs are finding that computers and interactive media tools are benefiting their students in the learning environment. "One of the benefits of well-designed interactive programs is that they can allow students to see and explore concepts from different angles using a variety of representations" (Darling-Hammond, Zielezinski, & Goldman, 2014, p. 3). Computers have successfully been able to work with these students because most interactive programs help them with developing problem-solving skills through trial and errors methods. Three other important skills at-risk students develop through technology are interactive learning, using technology to explore and create instead to "drill and kill," and finding the right balance of teachers and technology (Darling-Hammond et al., 2014, p. 5).

Unfortunately, here in the U.S., within every school year, many students drop out of school. These students are considered school dropouts and these schools are known as dropout factories. "An increase in the dropout rate of a school system frightens officials because something is askew. It also raises a glaring target for critics" (Bennett, 1999, p. 36-37). Often, dropout results are publicized in local radio stations, newspapers, and TV news, and sometimes even nationally (Bennett, 1999). "Since schools are anxious to retain their potential dropouts, they try to identify them early and link them with specific programs" (Bennett, 1999, p. 39).

A common characteristic for at-risk students is showing no interest in school usually with their tardiness, truancy, behavior, and low grades. By identifying at-risk students as early as third

grade, school systems create goals for their programs such as "keeping 60 percent of identified potential dropouts in school" (Bennett, 1999, p. 37-38). School officials in Indian River County, Florida came up with a solution by removing these students from a traditional class setting, placing them in a learning environment with new computers, and allowing tech tools to teach them. Teachers wanted to help these students with a brand new approach, and it began in Vero Beach High School in 1987 (Bennett, 1999).

Vero Beach High School removed at-risk students from regular classes where they were misbehaving and moved them into a computerized learning setting. After creating the computer program, authorities found that they were exceeding their goals. "With computer instruction, their retention rate skyrocketed, eventually to over 80 percent. Computers were obviously effective" (Bennett, 1999, p. 39). This program kept at-risk students in this district in the classroom more than any other dropout prevention program. "Moreover, an unexpected revelation jolted pupils: school could be fun. Most of these perennially deficient students had never experienced this sensation" (Bennett, 1999, p. 39).

All students can become educated, and present students can profit from using educational tools in the classroom. Computers can provide ways for school officials to identify extraordinary bright young students in a subject or many areas. "[Computers] can compare age and subject matter finished at the end of every section, and they can note when a student goes through a subject faster than expected" (Bennett, 1999, p. 83-86). Computers should spot and record talented students, and this is needed because the brightest students need to be identified, encouraged, and pushed to their highest potential. When the brightest students are pushed to their highest potential, they may be more likely to stay in school and become more engaged and successful in their academic life.

It is essential to keep in mind that the computer will never replace teachers or the social pedagogy. What computers will do is ensure that the teacher and student relationship is "more satisfying, engaging, and fulfilling" (Bennett, 1999, p 138-139). Computerized education may continue to bring change, especially now with inner-city schools, charter schools, and some public schools starting to understand the potential of computer software. Making the switch from a traditional class setting to a computerized learning environment is not easy, but it has plenty of advantages that will make a brighter future for children (Bennett, 1999, p. 211).

Current Research on Joy of Learning for Low-Income Students

Both unemployment rates and crimes are almost double the national average in Baltimore, Maryland. Based on the provided statistics, these circumstances obviously contribute to emotional and behavioral issues for students. In an effort to combat traumas, several public schools throughout Baltimore are assisting to help reduce stress through mindfulness and meditation. Patterson High School, a public high school located in East Baltimore, along with the help of a youth nonprofit called Holistic Life Foundation, created their own "Mindful Moment Room" inside the school. Here students will do yoga, which ultimately decompresses their stress levels during or after a day of school (PBS Newshour, 2017).

The Mindful Moments Room is not the typical yoga studio found in your neighborhood and it serves as a quiet place where students go after acting up, feeling burned out, or simply needing to recollect themselves. Latonya Lee, a student currently attending Patterson High School, revealed, "There's just a big smile on my face because I'm in here. If they didn't have mindful moments in Patterson, I wouldn't be here at all." Another student grew up without his father and oftentimes struggles with depression, grief, and even had suicidal thoughts. He was able to calm himself in his school by taking more deep breaths in the moment of adversity. "Maybe I just look at that and just

like, I can do this in a different way. I don't have to fight this person. I don't have to look to

violence as the answer" (PBS Newshour, 2017).

Carlillian Thompson, the current principal at Robert W. Coleman Elementary School,

wanted to bring joy back in the classroom by incorporating music into lessons, getting students

outside, and helping them recharge, but they had one of the highest suspensions in their district.

She put in effect the mindful and mediation practices a couple of years ago and since then there

have been zero suspensions. "The children are now able to embrace it and realize that: I don't have

to be angry. I don't have to fight. I don't have to show off. All I need to do is breathe." Today,

mindfulness breathing programs can be found in nearly two dozen Baltimore schools and there are

15 similar programs across America (PBS Newshour, 2017).

Mindfulness breathing programs can contribute to creating a more positive classroom

climate built through everyday teacher and student connections and interactions. These programs

can help reduce the stress that students are dealing with and allow the true joy of learning back into

the classroom (see Figure 4) (PBS Newshour, 2017). Principal Thompson revealed that joy in her

classrooms is when students discover and understand a new idea/concept and get it. "I am filled

with huge joy when an engaged student asks a thoughtful question; what's more, when joy

becomes visible in the students and their curiosity grows" (PBS Newshour, 2017). She also

mentioned that it is important for teachers to display a playful side in their personality to students.

Research suggests that playfulness and creativity elicit joy that positively impacts student and

teacher attitudes in the classroom (Sherman, 2013) (see Figure 4).

Figure 4. Benefits of meditation

The Total Learning Institute (TLL), an academic enrichment program based in Connecticut, serves low-income students in Norwalk and Bridgeport. TLL integrates social and emotional learning into the curriculum, which focuses on integrating thinking, behavioral, and regulatory skills. Additionally, this program helps with developing young talent by giving them confidence through music, dance, and performance. TLL utilizes art-infusion strategies that overlay existing activities and materials (Cohen, 2012).

What makes TLL stand out is collabrating with local public schools by creating recreation courses like learning how to swim, martial arts, gardening, and archery. Archery has provided multiple benefits for low-income students in Connecticut. Students explained that archery helped them get out of their comfort zone and improved their focus. By remaining focused during a shot,

students were able to improve their hand-eye coordination and their upper strength. Without some joy inside or outside of school, how can students relate to each other, relax, and enjoy learning? By practicing mindfulness and meditation tools along with allowing low-income students to learn in creative ways, students will be able to discover joy in the classroom.

There are three common challenges for students in low-income communties in the U.S.: lack of exposure, lack of stability, and language barriers. In their early childhood, many low-income students are not exposed to books and single-parent families are almost twice as likely to have low incomes compared to all families with children. Additionally, two-thirds of ESL students come from low-income families. Fortunately, there are three solutions to resolve these challenges. Most classrooms now have devices, high-speed internet connection, and educational applications, which all provide more ways for students to learn and make the classroom playful. Emotional training may also be infused in the regular school day to help regulate students' emotions, process stress, and heal any traumatized experiences outside of school (meditation, breathing exercises, and mindfulness) (Sherman, 2013). While these solutions may help, no one has explored how using design-thinking strategies may better help us understand joy and learning in low-income schools.

Unfortunately, most of students' joyful learning experiences may normally happen outside school instead of inside the classroom. Including joy and learning in the school learning content is not impossible and many of our greatest joys connect to what we learn. "The emotion of great delight or happiness caused by something good or satisfying" (Sherman, 2013), in other words, joy, should occur in the classroom. This study will help better understand low-income children, how to make the classroom more playful, and what bring them joy in the classroom.

METHODS:

Purpose:

For this research study, we explored joy and learning in low-income schools using design-thinking strategies.

Sample:

The study used qualitative design-thinking strategies with 29 participants. Participants included teachers, former students, parents of former students, administrators, counselors, and church members who come from or worked in low-income schools. Group one included two participants who recorded their personal experiences attending schools in low-income communities in a journal. The participants from group one graduated from schools in low-income communities and come from diverse backgrounds. The information gathered from the journaling exercise was vital for exploring the positives, negatives, and possibilities, and sorting items for group two. The second group consisted of 10 participants including former students of low-income schools, teachers who taught in a low-income school, parents of low-income students, and administrators and counselors of low-income schools. Group three consisted of an additional 10 participants who were also former students, teachers, counselors, administrators, and parents with involvement in a low-income school. Groups two and three participated in a design-thinking workshop as outlined in Table 1. Group one participants were recruited in a face-to-face manner because the principal investigator attended a few low-income schools and has connections with former students. The principal investigator recruited members of groups two and three by email (see Appendix C). Individuals who agreed to partake in this study read and signed consent forms (see Appendix A, D, and E).

Table 1: Explanation of Sample for Each Group Session

Design Thinking (DT) Strategy	Description of the Strategy	Purpose/Why Using DT Strategy
Journaling (Group one consisted of 2 individuals)	An activity that invites people to record personal experiences in words and pictures.	This DT strategy allowed former students to share their personal experiences attending low-income community schools. As students, they considered the following: 1. What where the impediments to learning when you were in school? 2. Describe a typical day in school. 3. What sparked your interest in learning? 4. What made you excited about school? 5. Did you ever experience a sense of joy when in school? 6. Was school boring or uninteresting to you? Why? 7. What contributed to this boredom or lack of enthusiasm? 8. How would you define a sense of joy in school? (See Appendix A and B.)
DT Workshop 1: Rose, thorn, bud (Group two consisting of 10 individuals)	A technique for identifying things as positive, negative, or having potential.	This DT strategy is based on the journaling results, and participants identified the positives, negatives, and possibilities. Participants included 10 former students of low-income schools and teachers who taught or who are currently teaching in a low-income school. Parents, counselors, and administrators who are also involved with low-income

		schools were recruited as well (see Appendix C and D).
DT Workshop 1 continued: Affinity clustering & Statement starters (Group two consisting of 10 individuals)	A graphic technique for sorting items according to similarity. An approach to phrasing problem statements that invites broad exploration.	Once participants identified the positives, negatives, and possibilities, they grouped items into categories using affinity clustering. Based on the clusters, participants developed statement starters using "how might we" language. These DT strategies revealed thematic patterns and built shared understanding.
DT Workshop 2: Visualize the Vote and Round Robin (Group three consisting of 10 individuals)	A quick poll of collaborators to reveal preferences and opinions. An activity in which ideas evolve as they are passed from person to person.	A different set of former students and teachers, counselors, administrators, and parents from low-income schools participated in this workshop. The statement starters from Workshop 1 were presented and participants voted on what they thought were the two to three with the most potential. The group of 10 were divided into two groups and each group was given a statement starter. Based on the statement starters and visualize the vote, participants shared ideas and passed them along to the next person until the group found an unconventional solution (see Appendix E and F).
Concept Poster	A presentation format illustrating the main points of a new idea.	Once all data was gathered, the researcher developed a poster that showcased the new idea(s) that offered an ultimate solution for this study.

Instrument and Procedure:

  This study consisted of four stages. Stage One involved journaling and a Sunday school activity. Stage Two (Workshop One) included rose, thorn, bud based on the information gathered during the journaling method, affinity clustering, and statement starters. Stage Three (Workshop Two) consisted of round robin and visualize the vote. Stage Four was the creation of a concept poster to communicate the proposed solution.

Stage One

  Stage One took place privately and included the journaling exercise. Before this session occurred, the researcher handed out consent forms to the participants and provided details on the purpose of the study (see Appendix A). Each participant had time to read and ask any related questions about the consent form and the study. Stage One began as soon as each form was signed and delivered through email to the researcher.

Sunday School Activity (Defining Joy):

  The principal investigator worked with the House of Praise Sunday school teacher to determine a date for the defining joy activity. Once parents and children showed up to Sunday school, the student researcher gained permission from the children and parents of the children attending the class using an assent and consent form. Parents were asked to stay for the first 10 minutes of Sunday school. The student researcher explained the 10-minute activity to be performed during the Sunday school class and the assent and consent forms. For this activity, children were asked to create collages using magazines brought by the principal investigator. The theme of the collage was "what brings you joy in school or outside of school." Time was given to read the assent and consent forms and for answering questions. Assent and consent forms were signed when all participants and their parents had a clear understanding of the defining joy activity. Those who

did not sign still did the defining joy activity, but the student researcher did not collect their collages.

Journaling:

Stage One was completed in the course of one week. The two participants from group one were former high school students that graduated from low-income schools and were instructed to share their personal experiences with being a student in a low-income community. As the participants shared their experiences, they documented their daily diaries as an act of reflection, confession, or documentation. This journaling technique was done privately over the course of one week. It allowed participants to record their thoughts and feelings.

The journaling activity allowed participants to document their experience in a notebook. The information gathered helped the other groups with identifying the positives, negatives, and possibilities (see Appendix B).

Stage Two

Stage Two took place at House of Praise church in Bloomfield, New Jersey. Before the workshop proceeded, the researcher explained the purpose of the study and workshop strategies and provided the participants with a consent form. Participants were given time to read the form and the researcher thoroughly explained the consent process. Once forms were signed, the workshop commenced (see Appendix D and Table 1).

Rose, thorn, bud:

This DT strategy was based on the journaling results and allowed participants to identify the positives, negatives, and possibilities. Once the results were received from the journaling exercise, the information was summarized to group two for this exercise. The 10 individuals were divided into two groups. Each group was provided with sticky notes where pink indicated a rose (positive), blue indicated a thorn (negative), and green conveyed a bud (possibility). Based on the

journaling results, the group was asked questions like "What is driving you crazy", "What are the opportunities", "What are the impediments", "What is encouraging"? Each group was asked to brainstorm on the positives, negatives, and possibilities for 15 minutes.

Affinity clustering:

Using the information gathered from the rose, thorn, bud exercise, participants grouped and sorted items according to similarity by using affinity clustering. This DT strategy is designed to help teams identify patterns by sorting items based on similarity. During this workshop, the participants labeled insights (clusters) and developed new ideas. This activity took 10 to 15 minutes.

Statement starters:

After collecting insights in the previous exercise, participants developed statement starters based on the clusters using the "how might we" language that took 15 minutes. The statement starters method is designed to identify a set of problems or opportunities by phrasing statements that invite broad exploration. These statement starters were used to inform Workshop Two.

Stage Three

Stage Three also took place at House of Praise church in Bloomfield, New Jersey. Consent forms were explained in a similar manner as noted in Stage Two (see Appendix E).

Visualize the Vote and Round Robin:

The group was presented with the statement starters generated from Workshop One. Everyone was given sticky notes to vote on their top two statement starters. The statement starter that received the most votes informed the round robin exercise. This group was divided into two groups and received a worksheet (see Appendix E). Each participant wrote down the challenge (the statement starter) and an unconventional solution, and then passed each worksheet to the next person to his or her left. The researcher instructed each participant to write down an explanation of

why the proposal would fail. Last, each participant passed the worksheet again and provided a solution on how to resolve the critique. Each step took no more than three minutes to complete. Both teams had an opportunity to present and discuss their newly developed ideas.

Visualize the Vote:

After gathering the information from the round robin, the participants continued the workshop by partaking in a quick poll that revealed preferences and opinions. First, participants received sticky notes for posting their votes from the researcher. Everyone was given two sticky notes to cast an overall vote and a detail vote. Visualize the Vote helped identify patterns and gave everyone an equal say. This workshop lasted for one hour.

Stage Four (Concept Poster)

After arriving to a final solution, the researcher developed a presentation providing the main points to a new idea. Based on the results in the previous stage, the researcher created a poster that displayed the new idea, why it mattered, and how it would work. The Concept Poster included a short summary of the big idea along with features and benefits. The goal with this activity was to promote a clear idea of the future and build a business case while providing a road map.

RESULTS:

Stage One

Data Collected - Sunday School Activity (Defining Joy):

A 10-minute activity called Defining Joy was held after receiving permissions from the children and parents and collecting the assent and consent forms. The exercise included seven children from ages 7 to 9 years old. This activity was conducted at the House of Praise church in Bloomfield, NJ. In the first 10 minutes of Sunday school, the children used provided materials such as scissors, paper, glue, magazines, and images to create a collage that illustrates what brings them joy both inside and outside of school. Subjects and areas that brought the children joy were videogames, food, art, science, and cartoons, among others (see Figures 5 – 12).

The researcher was able to gain insights on what brings children joy both in and outside of school. The first collage shows the child's interest in the comic book character, The Incredible Hulk. This child is also a fan of the popular cartoon series, Family Guy, and is intrigued with yoga and meditation. At this moment, meditation and emotional learning have been practiced by children in low-income public schools in New Jersey. Based on the collages, the researcher was able to identify that the young participants love sweets such as ice cream and cookies (see Figure 5). In the second collage, the child expressed her passion for music. The participant and her family are huge fans of the famous singer and actress, Jennifer Lopez. The participant also revealed she enjoys singing, dancing, and acting as well (see Figure 6). Common themes with the collages were animals and family photos. All the children who participated in this activity expressed their love for their parents and siblings. Most of them own pets as well and considered them to be a part of their family (see Figures 7 and 8). Electronics were trendy among the participants as well as

musical entertainment. Mostly all the children find joy in eating food too. Below are common themes:

- Food was referenced in all seven collages (see Figures 5-11).

- Cartoons were referenced in five out of seven collages (see Figures 5, 6, 9 10, and 11).

- Videogames and electronics were referenced in four out of seven collages (see Figures 6, 7, 9, and 11).

- Exercise and yoga were referenced in four out of seven collages (see Figures 5, 6, 9, and 11).

- Pets and stuffed animals were referenced in four out of seven collages (see Figure 5, 6, 7, and 8).

- Family was referenced in two out of seven collages (see Figures 5 and 6).

Figure 5. Defining Joy Collage #1
The Incredible Hulk, Family Guy, Ice Cream, Cookies, and Yoga

Figure 6. Defining Joy Collage #2
Sesame Street Character, Salad, Jennifer Lopez, Dancing, Cartoon Family, Jennifer Lopez (again),
Cell Phone, and Heart Machine

Figure 7. Defining Joy Collage #3
Gifts, Chef Cooking, Books, Videogame Character, Artist Painting, Rabbit, and Paint Supplies
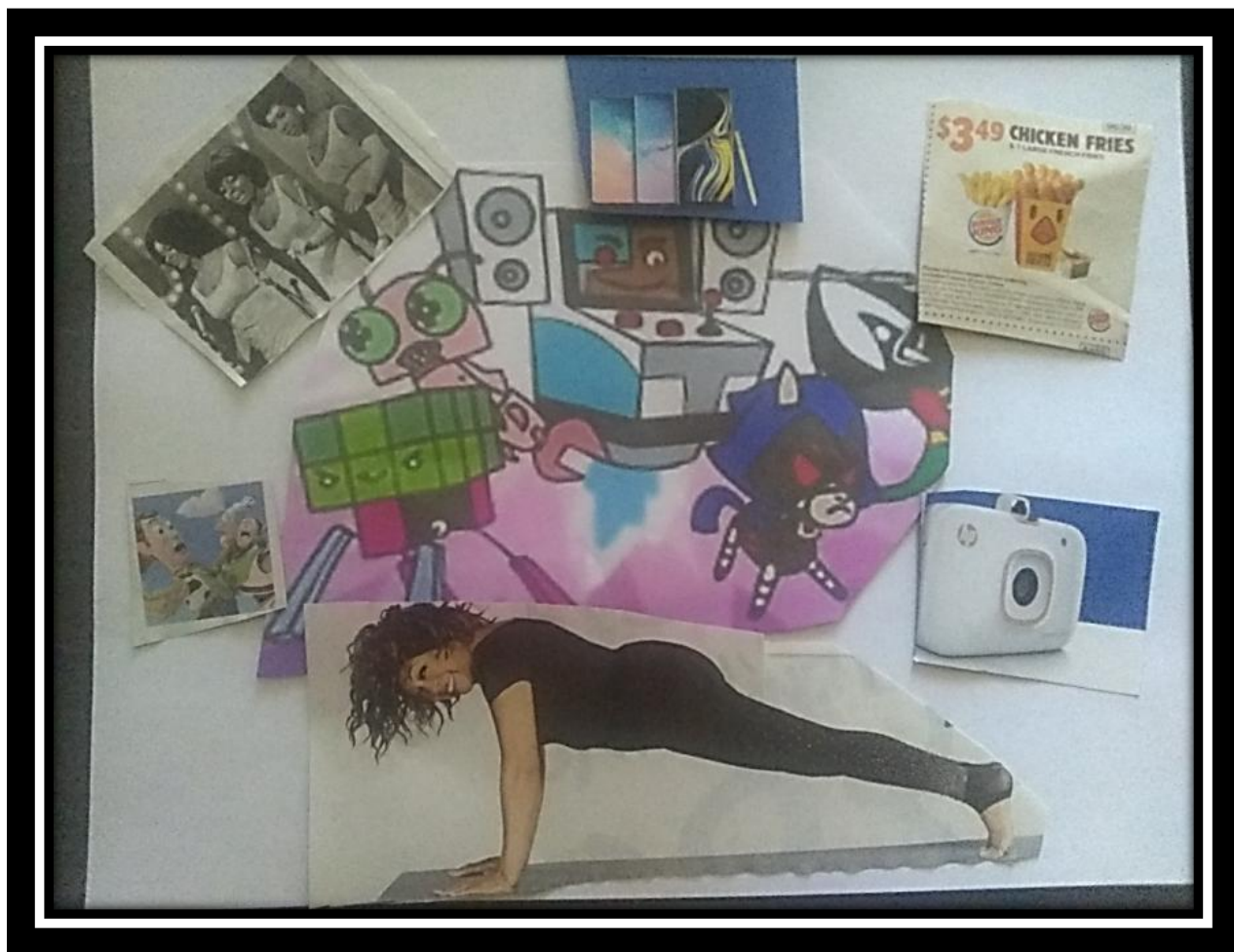
Figure 8. Defining Joy Collage #4
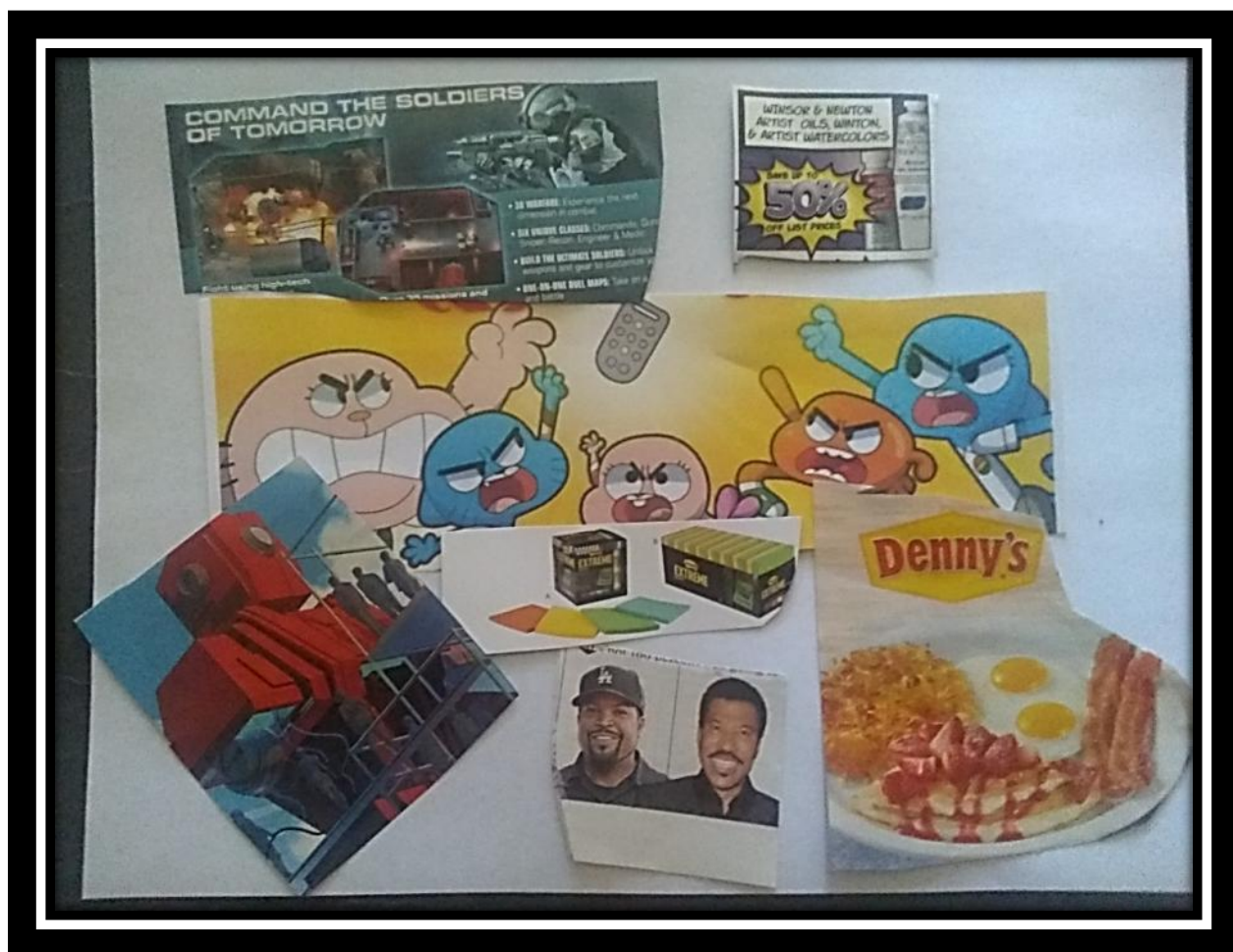Food, Dog, Lakeside View, and Stuffed Animals

Figure 9. Defining Joy Collage #5
Basketball, Super Heroes, Video Games, Food, Video Game Controller, and History Channel Logo

Figure 10. Defining Joy Collage #6
Singers, Cell Phone, Food, Toy Story Characters, Cartoon, Camera, and Exercise

Figure 11. Defining Joy Collage #7
Video Games, Art Supply, Cartoon, Robot, Sticky Notes, Food, Rapper, and Singer

Journaling:

The journaling included two participants who were former high school students that graduated from schools in low-income communities. In this journaling experience, both participants who were over the age of 18 reflected and shared their personal and unique experiences as a high school student attending a low-income school.

Participant #1 Journal Entries

Monday:

It's usually difficult to wake up on a Monday morning. I usually have to prepare myself on Sunday. I like to practice the violin for a few hours on Sundays. This helps to feel prepared in orchestra class on Mondays. I've been practicing Concerto in D minor so much and I give my best, but I get nervous on Mondays because I don't know if I will mess up while playing in class. Monday mornings help me out with feeling nervous. When we arrive at school, we come together and dance to the Cha Cha Slide song. It's silly because all students, teachers, security guards, and principal dance together, but it takes my mind off orchestra practice. Today, I danced so hard until I broke a sweat and because of that, I did okay in orchestra class. My violin teacher asked me to play a little bit for everyone and I did it. I was nervous, but I did it and it felt good. I hope the same for tomorrow.

Tuesday:

When I got to English class, my teacher asked me if I want to audition for the Praise Fest Show. It's a big deal in the community and a great way to show everyone my talent. I've been to the show before and the people are very talented. But I don't know, I don't feel as talented. My teacher thinks because I practice with the New Jersey Symphony Orchestra that I am a good violin player, but I struggle. In my class, I am second violin and my best friend is first violin. Sometimes,

I feel jealous because she knows how to play new songs so quickly and I mess up all time. My mom said to play the violin from my heart, but she doesn't know how hard it is.

Anyway, I will still audition and just practice really hard. I am a bit nervous to play in front of many people, but I will still try. Maybe I can bring my dog to the show because it is outdoors. My dog makes me feel safe.

Wednesday:

I can't stand mean girls. A girl made fun of my hair at lunch today. She said it's weave and I said it's not weave. Then she called me white because I'm light-skinned and said I'm going to take all the guys. I don't even know what she's talking about. I only met her once in detention. I went to detention last month because I was late for school. I stayed up late playing the violin to get ready for my summer music program. Anyways, I can't stand mean girls. I swear I'm a nice person. I don't disrespect anyone and I mind my business.

I told my mom and cried about what happened. I feel silly crying because I know I didn't do anything wrong. Mom said she's just jealous, but I don't know why. She's pretty and gets lots of attention. Why be mean to me? Maybe because I'm quiet or maybe because I play the violin. She's a vocal major and can sing. I need to be tougher and not let people make me cry.

Thursday:

In orchestra class, my crush talked to me today. He said hi and liked my hair. It's so weird because that girl made fun of my hair yesterday. Now, I feel pretty and I wonder if he likes me. I liked him since he joined our class. He transferred from California and his dad played Double Bass in a band back in the day. Some famous band I think. Maybe the Temptations. I don't know if I believe him though. He's so cute and a really good double bass player. He gets so into the music and taps his feet. He made fun of us violin players because we don't tap our feet, but it's hard. We got to read music, make sure we are holding the violin right, look at the teacher, listen to each

other, it's just TOO MUCH. He doesn't understand that, but I like him. I want to know if he likes me, but I'm too scared. I hope he likes me.

Friday:

After my orchestra class, my teacher asked to speak to me. He asked if I had any summer plans and if I will work this summer. I told him that I didn't really have any summer plans, but I will practice the violin. He asked me if I wanted to work at a summer camp and help kids learn how to play the violin. I was in shock. He asked ME. Me the second violin player in class. He also asked my best friend who plays first violin. I am so nervous because I think I am okay, but clearly, I'm good enough to teach kids. I never had a real job before besides babysitting. So, I am going to do it. I told him I feel shocked and happy to work at the summer camp. I think the kids will love it. In the summer, kids do not have lots of fun stuff to do. The violin is different, and it will be nice for them. I am happy for this summer!

Participant #2 Journal Entries

Journal Entry #1:

In all honesty, I don't remember my high school experience entirely; it has been so long since I graduated. However, I will reflect here about my junior year and a portion of my senior year. East side school in NJ wasn't my first decision. I went to University High School of Humanities, a six-year public high school serving Newark students from grades seventh through twelfth. The school only accepts the most brilliant all through Newark. I attended University High School from grades seventh to the tenth, and I was transferred out my sophomore year because of my horrible GPA (1.8). I attended my district school, East Side High school, a four-year public school. I recall the beginning of my junior year, knowing that I let my family down due to the fact I was the first in my family to be accepted and attend University High School. My first day at East

Side High school was a reality check. It was undoubtedly night and day contrasted with University High School.

Journal Entry #2:

I still remember the very first day of school at East Side, walking toward the side entrance where students would have to go through the walkthrough security metal detectors once they walk through the school door. Before I stepped into the building, I witnessed a group of students welcoming each other to what it looked like, gang handshakes, and gestures. There were too many gangs! I was felt promptly threatened as I passed by them because I wasn't sure if they were even students because of their tattoos on their neck and arm areas. They didn't look like they were my age. However, I quickly noticed they had East Side High school ID cards.

I then said to myself, this is what I get for failing out of University High School! I felt aggravated each morning since all students were required to empty our pockets before walking through the security metal detectors as though we were at an airport. For the initial two weeks, I just sat in the back of all of my classes disheartened that I wasn't any longer at University High School. I recalled my mother crying when I received the call that I was being transferred out of University as if I got expelled out of school. She is disappointed in me, so I felt that I needed to make up to her while I was at Eastside and focus on increasing my GPA. Fortunately, the coursework was more straightforward at Eastside High compared to University High. Believe it or not, most students passed their classes by merely showing up and doing the bare minimum.

Journal Entry #3:

University High School wasn't massive on security since we didn't have a strong gang presence and large student population. There were likely a couple of students who were gang-related at University High, but they were quiet about it, unlike East Side High. Most students were open about it, even in front of staff, teachers, and the principal. The hallways, stairways, and desks

were marked up with gang-related terms and signs. Sadly, I saw one of my former nearest childhood friends, joining a neighborhood gang because a rival group was bullying him. I knew him since I was five years of age, and he was a brilliant kid, especially for his period, yet by one way or another he got caught up in the street/gang lifestyle. We went to elementary school together and were no longer classmates once I went to University High School.

While I was in the eighth grade, I heard he got recruited into a group in my neighborhood for protection since he was getting bullied in school. Seeing and speaking to him for the first time since middle school unquestionably disturbed me since I knew his family, especially my mom, because she remains a close friend to his family. What frightened me to my junior year was the other students questioning me, asking if I was a part of the same gang as my childhood friend due to our relationship. I didn't want anyone to think I was a part of a gang, so I decided to distance myself from students who were a part of any street gang.

Journal Entry #4:

I started skipping school during the second half of my junior year of high school at East Side High because I didn't feel safe in the school, to be honest. It was a bizarre environment for students, and I quickly learned not to tell staff about events and activities that happen inside the school, mainly anything that involved gangs. My grandmother always taught me to speak up, especially to anything that seems wrong or strange, but I learned quickly to adapt to this new school environment for my safety. Sorry, grandma! I started to leave school early with the seniors. Seniors could leave school at 1:15 pm. Since I was a new student, no one knew me (teachers, staff, security guards, principal, etc…), so I was able to act as if I was a senior student, so I just left early. Most of the fights and other problems at East Side High would generally occur after school hours and occasionally during lunch. Leaving first made me feel safe during my junior year.

Fortunately, the last class of the day during my junior year was just an elective (Cooking II), and it was a required class.

Journal Entry #5:

Mrs. White, my guidance counselor, was an absolute sweetheart, and she helped me with selecting classes required to finishing high school. She made me realize on the very hour on the first day of my junior year that University High School and East Side High School are unquestionably two different school environments, but if I stay out of trouble and get good grades, I'll be alright. She referenced to me that I should play a sport since my GPA wasn't awful that year. I'm an introvert, now and back then so initially I was afraid of playing any sport and interacting with other East Side High students!

Mrs. White pushed me to join the newly developed lacrosse team at East Side High. Right up 'til now, Eastside High School is the only school in Newark that has a lacrosse group. Without any knowledge of what lacrosse was, I gave it a shot and tried out for the team and made it on the JV squad. Even though I don't watch lacrosse today and I don't play any longer, I should mention that joining the group certainly made the rest of my day at East Side High go a lot faster. I made some good pals who remain as positive pals of mine today.

Stage Two

Design-Thinking Workshop One

Rose, thorn, bud:

The first portion of Design-Thinking (DT) Workshop One included the DT strategy "rose, thorn, bud," which was based on the defining joy and journaling results. The ten individuals ages 18–40 who participated were provided with sticky notes and identified the positives, negatives, and potentials from previous activities. Pink sticky notes represented a rose (positive), blue represented

a thorn (negative), and green indicated a bud (potential). Below are the results (see Figures 12 and 13).

Rose (Positive):

1. Students learn how to adapt in their environment

2. A sense of safety

3. Students, teachers, and parents alike are more engaged in educational community of magnet schools and helpful programs for students.

4. Community involvement (parental figures)

5. Builds mental toughness

6. Some schools encourage parents to participate in child's education

7. Overcome adversity

8. The arts (music, dance, graphic design, fashion design, etc.)

9. Diverse learning needs are met

10. Supportive, caring approach from teachers

Thorn (Negative):

1. Magnet schools segregate students based on their intelligence

2. Poor building condition

3. Magnet schools draw resources away from other schools struggling

4. Uniforms are bad because it undermines a "free education"

5. Gang culture creates high tension for students

6. Very selective enrollment process for magnet school

7. Gang presence

8. High dropout percentage

9. With school uniforms, young students do not have to learn to make clothing choices

10. Smaller vocabulary

Bud (Potential):

1. Keep nurturing and supporting successful school programs

2. Growth

3. Hire more teachers who grew up in the same area

4. Uniforms not only help prevent bullying but gang activity too

5. Summer and afterschool math, science, and technology enrichment for low-income students

6. Diverse classroom helps

7. Use monthly progress reports

8. Strong teacher and student relationships

9. Low-income scholarships

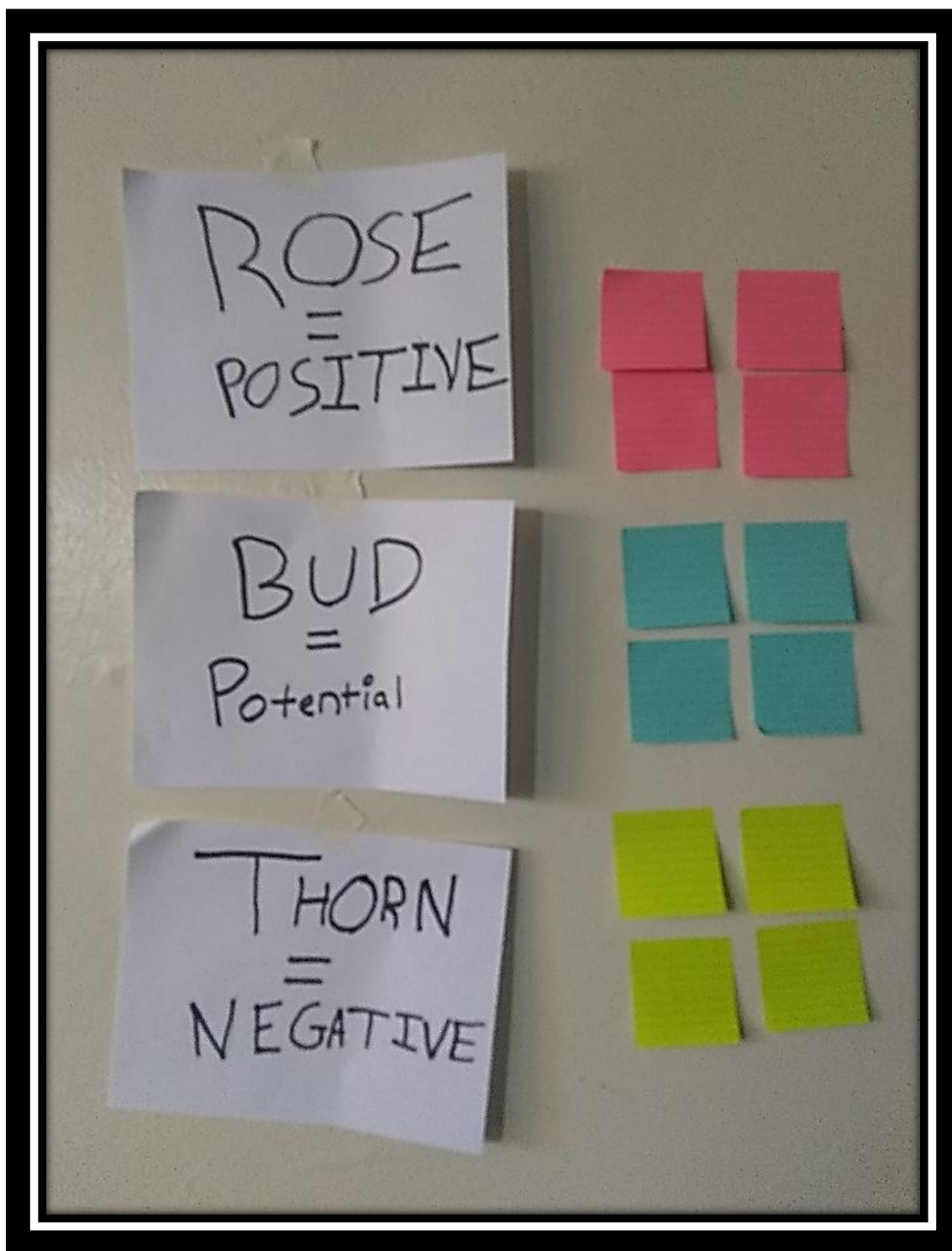**10.** Host more job fairs, file taxes, bake sales to establish trust in community

Figure 12. Rose, Thorn, Bud

Figure 13. Rose, Thorn, Bud Results

Affinity clustering:

After gathering information from the rose, thorn, bud exercise, participants then grouped based on similarities by using the affinity clustering DT strategy. This DT strategy helped the individuals identify patterns, create labels, and place sticky notes into eight categories to develop new ideas. Following are the results.

Positive communities:

1. Diverse classroom helps student **(bud)**

2. Community involvement - parental figures **(rose)**

3. Students, teachers, and parents alike are more engaged in educational communities of magnet school programs **(rose)**

4. Supportive, caring approach from teacher **(rose)**

5. Some schools encourage parents to participate in child's education **(rose)**

6. Strong teacher and student relationships **(bud)**

7. Diverse learning needs are met **(rose)**

8. The arts **(rose)**

Bad school building conditions:

1. Poor building condition **(thorn)**

2. Magnet schools segregate students based on their intelligence **(thorn)**

3. Gang culture creates high tension for students **(thorn)**

Financial support:

1. Low-income scholarships **(bud)**

2. Host more job fairs, file taxes, bake sales to establish trust in communities **(bud)**

Same issues between generations:

1. Need to hire more teachers who grew up in the same neighborhood as students **(bud)**

2. Gang presence **(thorn)**

3. Very selective enrollment process for magnet school **(thorn)**

4. Small vocabulary **(thorn)**

5. High dropout percentage **(thorn)**

6. Magnet schools draw resources from other schools struggling **(thorn)**

Improving student's learning:

1. Create a sense of safety **(rose)**

2. Use monthly progress reports **(bud)**

3. Summer and afterschool math, science, and technology enrichment programs for low-income students **(bud)**

Silver lining for low-income students:

1. Build mental toughness **(rose)**

2. Overcome adversity **(rose)**

3. Growth **(bud)**

4. Keep nurturing and support successful school program **(bud)**

5. Develop street smarts **(rose)**

6. May help students value their education more. To some students it's an honor to graduate from high school in a low-income community **(rose)**

7. Students learn how to adapt in their environment **(rose)**

Uniforms (positive):

1. Uniforms prevent bullying **(rose)**

2. Uniforms not only help prevent bullying but gang activity too **(bud)**

Uniforms (negative):

1. Uniforms are bad because it undermines a "free education" **(thorn)**

2. With school uniforms, young students do not have to learn to make clothing choices **(thorn)**

Statement starters:

  After collecting insights in the last DT strategy, participants created statement starters based on the previous DT exercise clusters by using the "How might we" language. Following are the results.

(Identify opportunities/problems)

  1. Student's safety (Problems)

  2. Communities (Opportunities)

3. Fun and Engaging (Opportunities)

4. Learning in the classroom (Problems)

Statement starters

How might we promote community involvement in low-income schools?

In what ways might we make low-income schools fun and engaging?

How might we increase stability in low-income schools?

In what ways might we improve student's learning in low-income schools?

How to reduce economic hardship among American families?

Stage Three

Design-Thinking Workshop Two

Visualize the Vote:

This group of 10 individuals ages 18–40 were presented with the five statement starters from the previous workshop. Everyone was provided with two sticky notes and then placed them on their top two favorite statement starters. After this DT exercise, the top two statement starters were "How might we promote community involvement in low-income schools?" and "How might we increase stability in low-income schools?" "How might we increase stability in low-income schools?" received eight votes and "How might we promote community involvement in low-income schools?" received seven votes (see Figure 14).
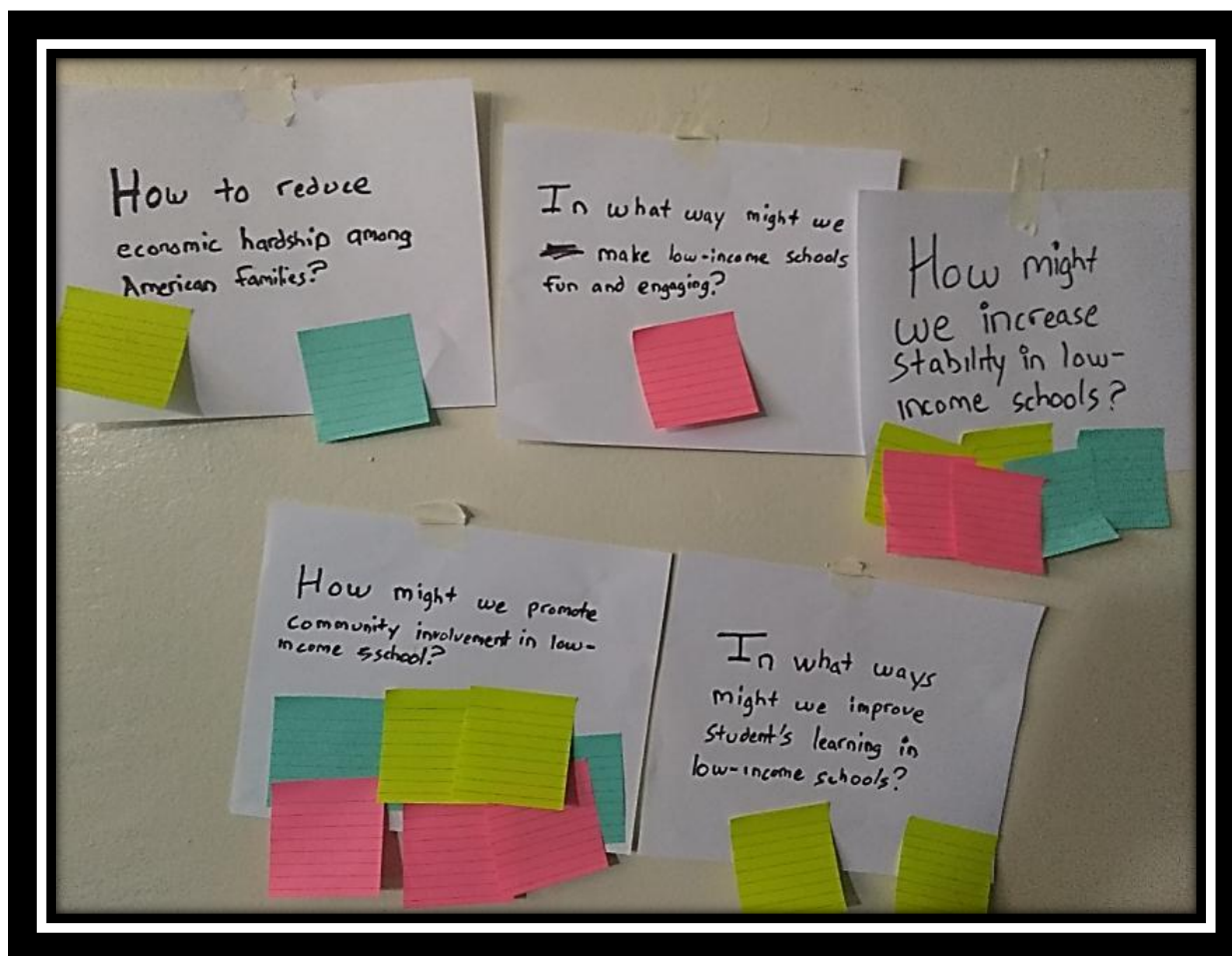
Figure 14. Visualize the vote

Round Robin and Visualize the Vote #2:

After receiving the most votes from the statement starter exercise, the group participated in the round robin exercise. The group was divided into two teams of five individuals and provided with the round robin template worksheet. Each wrote down the challenge (the statement starter) and an unconventional solution, and then passed to the next participant to his or her left. Each participant also had to write down a reason why the solution would fail. After three rounds of this exercise, the group was given five minutes to present their worksheet to their team for discussion. After, both teams then chose one concept to submit to the entire group. The best two round robins are presented in Figures 14 and 15. During the presenting, everyone was given two sticky notes each and placed their vote on the best concept. "How might we increase stability in low-income schools?" received the most votes because the final idea was both practical and straightforward to implement. This concept received 14 out of 20 votes (sticky notes) (see Figures 15–18).

Figure 15. Round Robin 1

Innovating for People | Activity Templates | Round Robin

CHALLENGE STATEMENT

how might we promote community involvement for low-income schools?

PROPOSED SOLUTION

Build community partners into your curriculum. Connect schools to individuals, businesses, colleges, etc...

WHY THE SOLUTION WILL FAIL

- Members in the community think school is too easy.
- Families battling mental illness can't help
- Substance abuse disorder
- No Longevity!

FINAL CONCEPT

Issue #1

Not true, sourcing materials to work on your own was a challenge. Students today should find schools more interesting and fun. Issue #2&3: Continue to work with the students. Teachers should continue to speak calmly to their student and offer unwavering support both in/out of school.

Issue 4: There is, support and create more opportunies for experiential learning. Reach out to all stakeholder (teachers, local businesses, knock doors, and visit other communities. Connect today's curriculum w/ the real world.

LUMA INSTITUTE
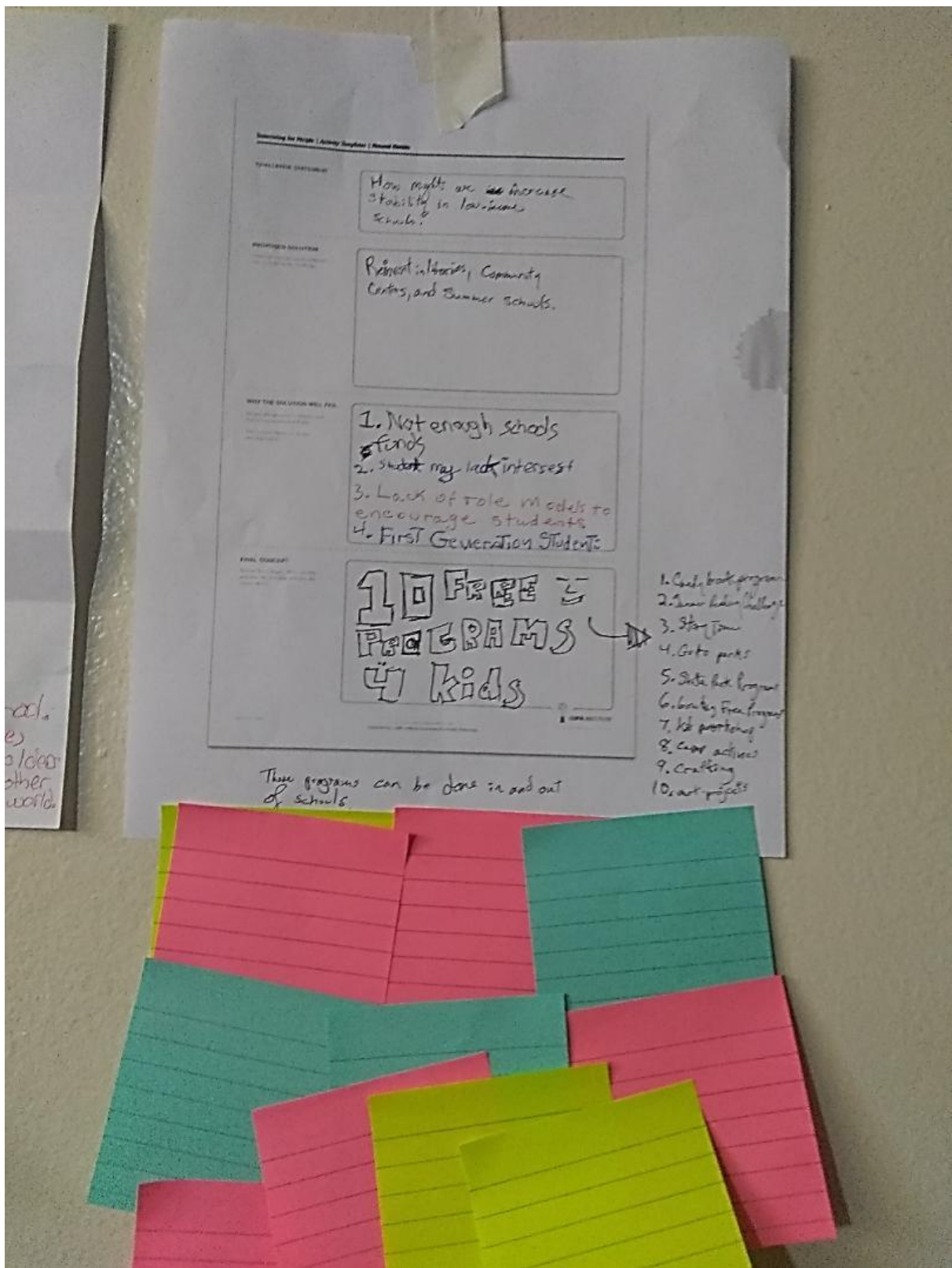
Figure 16. Round Robin 2

Figure 17. Round Robin 3

Figure 18. Round Robin 4

Stage Four

Concept Poster:

Once all the data was collected, the researcher created a poster for practical ways to help low-income students without a budget. The poster includes free programs to increase stability within low-income schools and ways to connect the community. Various reading programs, such as pairing students with a mentor, may help them learn a new skill or enhance their existing skills (e.g., math, science, sports, art, etc.). Buddy reading is a great way to help younger students improve their reading skills. Local and state parks are free ways that can help benefit a child's physical, mental, and emotional development.

Simple activities children can participate in are the following: walking, running, making art from nature, playing with dirt and mud, watching the clouds, and playing in the park during the winter. Outdoor lighting is healthy and important for everyone's brain because it strengthens our immune system and it will bring joy. "Spending time in nature is also associated with improving mood and happiness" (Lund, 2019, p. 56). Additionally, whenever a child can identify with nature, that child is likely to have a bigger appreciation for nature as adult and may help to protect the environment. Low-income communities could come together and host a "Walkathon" and even connect with local organizations to start a "Walkathon for a cause" within the school. Every Monday morning, Art High Schools come together as a community and dance to the "Cha Cha Slide" song. Communities could come together and have dance parties or competitions in the park. Kids Bowl Free program is a nationwide program that allows schools to select bowling centers and schools around the country to host bowling for students. This program was developed by bowling centers as a thoughtful way to give back to the community while providing a safe way for children to have fun. Through this program, children are eligible to register for a couple of free games each day throughout the entire summer. What became evident through the data collection is the

importance of extracurricular activities associated with school. Music and sports, for example, were instrumental in bringing a sense of joy to two former students who attended low-income high schools. The concept poster highlights the possible activities that could take place within or outside of the school context to help increase stability, community, and joy. Providing students this sense of constancy could mitigate some of the stressful situations associated with low income schools (i.e., gangs, bullying, not belonging, etc.). As noted by Lind (2011), programs such as these keep students productive outside of school and keep them off the streets.

These community programs would be run by local schools and churches. It is important for schools, parents, churches, and local businesses, along with the entire community, to band together to promote fun, healthy, and productive learning of all children. These programs would encourage schools to actively be involved with the child's parents. Anyone would be able to volunteer, but college students within the community are strongly encouraged to intern so they could receive college credits and make an impact in their communities. Based on the results, creating a sense of unity benefits everyone: students, teachers, and families. The concept poster below illustrates simple ways that would increase stability for low-income schools and would also benefit the community (see Figures 19 and 20).

The primary purpose of this poster is to advertise and spread awareness to residents in low-income communities of a new free program dedicated to increasing stability in low-income communities. The poster is catered more towards children in these neighborhoods, but also focuses on community involvement. The advertisement would be promoted at local businesses in their shop windows or out on display tables. Places with a waiting room where people spend time are ideal: hairdressers, opticians, and dentists, among others. Additionally, local businesses could also help advertise the poster on their social media channels: Facebook, Instagram, Snapchat, Twitter, and LinkedIn. Another form of advertising is to go directly to the streets. Distributing posters in

main streets, train or bus stations, or in front of local elementary schools can help spread the word. Hiring people within the community to give out handouts can be beneficial as well. Using services like Fiverr to find a street team within a tight budget can also be helpful with promoting.

The poster has the potential of bringing the community together. The plan is to provide simple ways to help stabilize low-income communities. As mentioned in the round robin exercise, one major issue found in low-income schools is that there are not enough school funds available. Providing a 100% free program that helps students learn more and interact with one another while having support from the community can only strengthen the community.

Figure 19. Concept Poster Pg. 1

Figure 20. Concept Poster Pg. 2

DISCUSSION:

Low-income schools are schools with high numbers or high percentages of children from low-income families. Common problems associated with low-income students are lack of exposure, lack of stability, and language barriers. Singer (2014) mentioned that schools in these areas are overwhelmingly overpopulated and their student population often suffers from poor test scores on standardized tests. This study implemented design-thinking strategies to address these common problems through a better understanding of low-income children. The primary goal of this study was to build a better sense of what brings low-income students joy both in and out of school. Stage One of this study included two individuals who helped provide their personal experience with attending a low-income school using the journaling exercise.

The researcher gained insights from journaling exercises and learned that magnet schools are public schools with specialized courses. Arts High School focused explicitly on art courses (dance, music, drawing, etc.), and created a learning environment to help talented students in Newark, NJ pursue their dreams. As noted by Cohen (2012), low-income magnet schools that infuse the arts in the curriculum often enhance confidence. We found in this study that extracurricular activities such as music and lacrosse created a sense of joy and helped reduce stressful situations often found in low-income schools. To illustrate, one former student noted the presence of gangs and metal detectors as increasing anxiety. As close to 11% of secondary schools have the presence of gangs (Oudekerk, 2017). Thus, providing students with outlets such as athletics, the arts, and clubs may be a way to create safe spaces that enhance joy.

The second portion of this study included the Sunday school activity, Defining Joy, conducted with seven children who provided collages that showcased firsthand what brings them joy in and out of school. What was interesting about this activity was the reference to food along

with items related to technology. As mentioned in the study, classrooms today are now filled with technological devices, internet connection, and educational web applications. Educational web applications will help provide more opportunities for young students to learn in a more playful classroom. In order to create a successful playful learning environment in low-income communities, emotional training should be considered. Sherman noted, if teachers infused emotional training into their classroom every day, it will help manage a student's emotional behavior, and heal any traumatized event in his or her personal life (Sherman, 2013).

This exercise begins to support some of the literature related to computers in schools. Bennett (1999) found that students who had no interest in school and were failing began to learn when exposed to computers. Computer programs associated with cartoon characters or video games, particularly when students are younger, could be explored as a way to keep children engaged while making learning fun. Darling-Hammond (2014, p. 3) explains that "one of the benefits of well-designed interactive programs is that they can allow students to see and explore concepts from different angles using a variety of representations." Perhaps that interaction could involve icons such as cartoons, pop culture figures, or even food.

All seven children included some type of food on their collage. As noted in the literature review, magnet schools that offer curriculum focused on subjects such as design, music, and the arts have seemed to foster learning among low-income students (Frahm, 2010). Furthermore, students who attend magnet schools are less likely to skip school or miss classes (Signer, 2014). A parent of one of the children who participated in the Defining Joy activity mentioned that the state of New Jersey recently started conducting workshops and classes dedicated to helping children learn how to cook. Classes and workshops could focus on various topics such as baking cookies, making healthy school lunches and veggie-filled meals, among others. She mentioned that most classes cost as little as $15 and accept children from ages 3 to 10. Her child has been taking a

couple already, and she revealed that classes helped her child learn how to prepare food and cook. Along with cooking, her child has gained practical experience with various skills like reading, basic measurement, and following directions. She believes that encouring children to learn how to cook at a young age will help them develop motor skills and math and science concepts.

The design-thinking workshop conducted with former teachers and students, along with parents, counselors, and administrators who worked in and attended low-income schools, allowed participants to identify positives, negatives, and possibilities related to the journaling and defining joy results. Common challenges discussed among participants were gang presence, which creates high tension for students, smaller vocabulary for low-income students, and poor school building conditions. As noted in the literature, gangs' presence in schools can increase tensions among students, staff, and other gangs (Burnett, 2014). These issues were cited as problems that could interfere with learning and enthusiasm/joy for school.

One difficulty that sparked debate was whether students should wear uniforms. Half of the participants strongly believed that school uniforms are a terrible idea because it undermines a "free education" and with school uniforms, young students will not learn how to make clothing choices, which may hinder them in their adulthood. One of the participants mentioned that her child's school received a free speech violations lawsuit because a parent did not want their children to wear school uniforms. Other participants argued that school uniforms serve a purpose both in and out of the school because students will not have to worry about peer pressure when it comes to their clothes, and it could improve discipline.

Other issues identified by participants included the need to hire more teachers who grew up in the same neighborhood as students, so the teacher could better understand their students; gang presence; and that magnet schools draw resources from other schools struggling, which leads to higher dropout percentages among low-income high school students. Dropping out of high school

will most likely have a negative impact on that student's life. Amurao (2014) mentioned that unfortunately, today in America, more than 70% of crimes are committed by high school dropouts. Yet a "silver lining" began to emerge. All participants agreed that not all low-income students will allow these common issues to interfere with pursuing an education.

Living and being exposed to a low-income community, a student may develop mental toughness, overcome adversity, develop street smarts, and learn how to adapt in their environment (i.e., the silver lining). The questions become: How can teachers and students use this to their advantage? How can overcoming these challenges allow students to see the joyful side of school? Why can some students overcome, while others do not?

Participants in this workshop also developed five statement starters:

1. How might we promote community involvement in low-income schools?

2. In what ways might we make low-income schools fun and engaging?

3. How might we increase stability in low-income schools?

4. In what ways might we improve student's learning in low-income schools?

5. How to reduce economic hardship among American families?

How we might increase stability in low-income schools became the focus in the second design-thinking workshop, along with continuing to explore joy and learning in low-income schools. Participants agreed that one of the most significant issues associated with low-income schools is poor school districts do not receive funding to address their students' increased needs. One of the participants revealed that the low-income school where she teaches has been shortchanged when it comes to having access to high-quality teachers, school counselors, early education, and after-school and summer programs. Schools in low-income neighborhoods are also overpopulated. Teachers are stressed out, afraid to be judged, and possibly lose their job because of poor student performance on Common Core assessments (Singer, 2014).

Based on her professional experience working in a low-income school, she mentioned that the two statement starters that received the most votes and the unconventional solution from the Round Robin activity should require a low budget or none. Other participants continued the discussion by mentioning they liked how at Arts High School, the entire school, including security guards, the principal, along with students, would come together every Monday morning and dance to the Cha Cha Slide song. This fun activity helped develop a sense of community and create a fun school atmosphere, which could promote joy. During the last design-thinking workshop, the researcher discovered that the concept, "How might we increase stability in low-income schools?" received numerous votes because most of the participants said it seems more practical, more comfortable to accomplish, and did not require much of a budget. Round Robin allowed the researcher to understand why participants felt that this solution would fail: Students may have family members in their household who are struggling with emotions or behavioral issues, which can affect the child's behavior. Approaches that were brought up by current teachers on how to tackle this significant issue were relying on teachers to find the good with their students and praise them for it. Teachers should understand that their students may not have that support at home, so they should be genuine and generous in their praise and not downplay their student's shortcomings.

Children who grow up in low-income neighborhoods often have parents who are not present in the lives of their children, affecting their school attendance and behavior (Guggenheim, 2010, September 24; Waiting for Superman). Teachers should keep open lines of communication with the student's parents or guardian if possible so they could create consistency in working with students. Most importantly, because being a teacher can be tough at times, it is vital to find ways to destress on evenings and weekends so they can bring their absolute best to the classroom.

Limitations, Future Research Directions, and Conclusions

The size of the groups was a significant limitation. Initially, the researcher wanted to work with a group of 35 to 40 participants. However, due to availability and time constraints, a few participants who initially agreed to be a part of this study opted out, which was challenging. Most of the workshops and activities were conducted on a Sunday after Sunday church service, so individuals could not participate because they had another event to attend, family time, or had to prepare themselves for work the following day. Expanding the number of children in the defining joy activity could have provided more insights on what brings children joy both in and out of the classroom. Increasing the number of individuals involved in both workshops and activities would have provided more information and innovative solutions for the study.

While much insight was gained from the journaling activity, one participant noted that he had not attended the low-income school for years. Future research should tap students who are currently enrolled in school. Lack of stability is one of the significant issues associated with low-income schools. Unfortunately, poor school districts usually do not receive funding, so students' needs will not be addressed. If the schools do not address students' needs, the community should do so. Finding affordable and straightforward ways to increase stability in low-income schools while creating a healthy community could benefit everyone. Typically, the communities act as a watchdog for residents by making sure that education serves people, especially children.

Ultimately, connecting young students to their community could help build relationships, help young students develop a better sense of self, and help them discover how to make their place in the world. Community programs could use the local environment as hands-on learning resources and encourage parents and their children to bring their issues within the community to the school. Next steps with research are to understand how to make children view their school as a sustainable community that serves as a learning hub and a role model for their community.

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Appendix A: Consent Form: Journaling

RU
RADFORD UNIVERSITY Department of Design: Design Thinking MFA Program

Joel Croichy
55 Manor Drive
Newark, NJ 07106

Adult Informed Consent – Journaling

Title of Research: **Exploring Joy and Learning in Low-Income Schools using Design-Thinking Strategies**

Researcher(s): Joel Croichy and Joan Dickinson

We ask you to be in a research study designed to explore joy and learning in low-income schools using design-thinking strategies. If you decide to be in the study, you will be asked to participate in a design-thinking strategy consisting of *Journaling*. Using a journaling handout provided to you by the student researcher, you will document your experiences of attending and working in low-income schools. You will have one week to complete the journaling assignment. Participants should journal at least 15 minutes a day for five to seven days of out this week.

This study has no more risk than you may find in daily life.

There are no direct benefits to you for being in the study.

You can choose not to be in this study. If you decide to be in this study, you may choose not to answer certain questions or not to be in certain parts of this study.

There are no costs you will incur for being in this study. There is no compensation for you to be in this research.

If you decide to be in this study, what you tell us will be kept private unless required by law to tell. If we present or publish the results of this study, your name will be not be linked in anyway to what we present.

If at any time you want to stop being in this study, you may stop being in the without penalty or loss of benefits by contacting: Joel Croichy, jcroichy@email.radford.edu, or Joan Dickinson, jidickins@radford.edu, 540-818-1669.

If you have questions now about this study, ask before you sign this form.

If you are interested in participating, please contact me, Joel Croichy, jcroichy@email.radford.edu, or Joan Dickinson, jidickins@radford.edu, 540-818-1669.

This study was approved by the Radford University Committee for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Orion Rogers, Interim Dean, College of Graduate Studies and Research, Radford University, jorogers@radford.edu, 1-540-831-5958.

It is your choice whether to be in this study. What you choose will not affect any current or future relationship with Radford University.

If all your questions have been answered and you would like to take part in this study, then please sign below.

_____	_____	_____
Signature	Printed Name(s)	Date

I/We have explained the study to the person signing above, have allowed an opportunity for questions, and have answered all his/her questions. I/We believe that the subject understands this information.

_____	_____	_____
Signature	Printed Name(s)	Date

Note: A signed copy of this form will be provided for you records.

Appendix B: Journaling form with directions

PARTICIPATORY RESEARCH

Journaling

An activity that invites people to record personal experiences in words and pictures

PEOPLE HAVE BEEN putting pen to paper in daily diaries for centuries as an act of reflection, confession, or documentation. As a research method, Journaling is a powerful way to learn about the inner workings of people as they document their personal experiences with a particular product or issue. In contrast to activities that require face-to-face interaction, journaling is done privately, typically over the course of days or weeks. This allows time for deliberative reflection that other methods may not. Often people will share greater detail about their feelings and opinions when they do not have to do it in person, yielding very thoughtful and thought-provoking responses.

But don't think that a journal is just a blank book. In fact, a journal doesn't have to be a book at all! A journaling activity could ask participants to take photographs of their interactions and describe them, narrate a series of short videos, or provide written responses to open-ended prompts. Whatever the chosen tools, craft them carefully to facilitate good findings.

A SAMPLE COMBINATION: This is a good sequence of methods for collecting data from key stakeholders, then using the research to inform a search for new ideas.

| Journaling | Rose, Thorn, Bud | Statement Starters | Creative Matrix |

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Here's an example of a homeowner recording concerns about the status of her house when she is away. This input informed the design of a new home security system.

QUICK GUIDE

- Identify a subject area to study.
- Make a kit of materials for record keeping.
- Include a paper diary and/or access to a blog.
- Invite a group of primary stakeholders to participate.
- Explain the purpose and duration of the study.
- Distribute the kits with simple instructions.
- Include a guide for capturing pictures and video.
- Ask them to fill the journal and send it back to you.
- Perform an exit interview with each participant.

HELPFUL HINTS

- Take advantage of the devices people already carry.
- Send periodic reminders to create journal entries.
- Provide the postage needed for returning the kits.

BENEFITS

- Accumulates research from remote regions
- Gains information over time
- Reveals what people think and feel
- Deepens your empathy for others

19

Journal   Date:_____

Topic:

_____

_____

_____

_____

_____

_____

_____

_____

_____

Draw a picture:

Appendix C: Email recruitment for workshops

Joel Croichy
Email Recruitment
April 4, 2019

Dear (Fill Name Here),

My name is Joel Croichy and I am a graduate student at Radford University who is currently pursuing an MFA in Design Thinking. Now, I am working on my master's thesis which focuses on exploring how might we implement design-thinking strategies to bring a sense of joy to learning in low-income public schools. I think that you will make a great participate with helping me gathering information for this topic.

I am currently putting together a diverse group of stakeholders which includes teachers, former students, parents of former students, former administrators, and former counselors. This study will consist of four stages. Stage Two and Three will include group 'design thinking' workshops which will help with gathering information as we identify the problem and solutions on how to bring a sense of joy to learning in low-income public school. Stage Four is the creation of a concept poster to communicate the proposed solution. The workshops will take about an hour.

Title of Research: **Exploring how might we implement design-thinking strategies to bring a sense of joy to learning in low-income public schools**

Researcher(s): Joel Croichy and Joan Dickinson

If you are interested in participating, please contact me, Joel Croichy, jcroichy@email.radford.edu, 201-640-4680 or Joan Dickinson, jidickins@radford.edu, 540-818-1669. I will provide further information. Thank you for time and consideration and I hope to hear back from you soon!

Thank you,

Joel Croichy

Appendix D: Consent form for workshop 1

Department of Design: Design Thinking MFA Program

Joel Croichy
55 Manor Drive
Newark, NJ 07106

Adult Informed Consent – Design Thinking Workshop #1

Title of Research: **Exploring Joy and Learning in Low-Income Schools using Design-Thinking Strategies**

Researcher(s): Joel Croichy and Joan Dickinson

We ask you to be in a research study designed to exploring joy and learning in low-income schools using design-thinking strategies. If you decide to be in the study, you will be asked to participate in a Design-Thinking Workshop consisting of three exercises. The first exercise is *Rose, Thorn, Bud,* which will have you identifying the positive, negative, or having potential items relating to low-income schools. The second exercise, *Affinity Clustering*, will have you sorting items according to similarity. The final exercise, *Statement Starters,* will have you phrasing problem statements that invites broad exploration.

The entire session will require one hour of your time.

This study has no more risk than you may find in daily life.

There are no direct benefits to you for being in the study.

You can choose not to be in this study. If you decide to be in this study, you may choose not to answer certain questions or not to be in certain parts of this study.

There are no costs you will incur for being in this study. There is no compensation for you to be in this research.

If you decide to be in this study, what you tell us will be kept private unless required by law to tell. If we present or publish the results of this study, your name will be not be linked in anyway to what we present.

If at any time you want to stop being in this study, you may stop being in the study without penalty or loss of benefits by contacting: Joel Croichy, jcroichy@email.radford.edu or Joan Dickinson, jidickins@radford.edu, 540-818-1669.

If you have questions now about this study, ask before you sign this form.

This study was approved by the Radford University Committee for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Orion Rogers, Interim Dean, College of Graduate Studies and Research, Radford University, jorogers@radford.edu, 1-540-831-5958.

It is your choice whether to be in this study. What you choose will not affect any current or future relationship with Radford University.

If all your questions have been answered and you would like to take part in this study, then please sign below.

_____   _____   _____

Signature   Printed Name(s)   Date

I/We have explained the study to the person signing above, have allowed an opportunity for questions, and have answered all his/her questions. I/We believe that the subject understands this information.

_____   _____   _____

Signature   Printed Name(s)   Date

Note: A signed copy of this form will be provided for you records.

Appendix E: Consent form for workshop 2

RU
RADFORD
UNIVERSITY Department of Design: Design Thinking MFA Program

Joel Croichy
55 Manor Drive
Newark, NJ 07106

Adult Informed Consent – Design Thinking Workshop #2

Title of Research: **Exploring Joy and Learning in Low-Income Schools using Design-Thinking Strategies**

Researcher(s): Joel Croichy and Joan Dickinson

We ask you to be in a research study designed to exploring joy and learning in low-income schools using design-thinking strategies. If you decide to be in the study, you will be asked to participate in a design-thinking workshop consisting of two exercises. The first exercise is *Visualize the Vote*, which will have you voting on proposed solutions and discussing the results. The second exercise, *Round Robin*, will have you propose and critique potential solutions to a challenge question. The entire session will require one hour of your time.

This study has no more risk than you may find in daily life.

There are no direct benefits to you for being in the study.

You can choose not to be in this study. If you decide to be in this study, you may choose not to answer certain questions or not to be in certain parts of this study.

There are no costs you will incur for being in this study. There is no compensation for you to be in this research.

If you decide to be in this study, what you tell us will be kept private unless required by law to tell. If we present or publish the results of this study, your name will be not be linked in anyway to what we present.

If at any time you want to stop being in this study, you may stop being in the without penalty or loss of benefits by contacting: Joel Croichy, jcroichy@email.radford.edu or Joan Dickinson, jidickins@radford.edu, 540-818-1669.

If you have questions now about this study, ask before you sign this form.

If you are interested in participating, please contact me, Joel Croichy, jcroichy@email.radford.edu or Joan Dickinson, jidickins@radford.edu, 540-818-1669.

This study was approved by the Radford University Committee for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Orion Rogers, Interim Dean, College of Graduate Studies and Research, Radford University, jorogers@radford.edu, 1-540-831-5958.

It is your choice whether to be in this study. What you choose will not affect any current or future relationship with Radford University.

If all your questions have been answered and you would like to take part in this study, then please sign below.

_____   _____   _____

Signature   Printed Name(s)   Date

I/We have explained the study to the person signing above, have allowed an opportunity for questions, and have answered all his/her questions. I/We believe that the subject understands this information.

_____   _____   _____

Signature   Printed Name(s)   Date

Note: A signed copy of this form will be provided for you records.

Appendix F: Parental Informed Consent

RU
RADFORD UNIVERSITY Department of Design: Design Thinking MFA Program

Joel Croichy
55 Manor Drive
Newark, NJ 07106

Parental Informed Consent

Title of Research: **Exploring Joy and Learning in Low-Income Schools using Design-Thinking Strategies**

Researcher(s): Joel Croichy and Joan Dickinson

You are being asked to allow your child to participate in a research study designed to explore joy and learning in low-income schools using design-thinking strategies. This form provides you with information about the study. The person in charge of this research will also describe this study to you and answer all your questions. Please read the information below and ask any questions you might have before deciding whether to take part. Your child's participation is entirely voluntary. Your child can refuse to participate without penalty or loss of benefits to which they are otherwise entitled. You can stop your child's participation at any time and your refusal will not impact current for future relationships with Radford University or participating sites. To do so simply tell the researcher you wish to stop participation. The researcher will provide you with a copy of this consent for your records.

Your child, _____, are invited to participate in a Sunday School Activity (Defining Joy). The Sunday school activity of defining joy includes children ages 7 to 9. These children attend House of Praise, a church where individuals living in a low-income neighborhood attend. The purpose of this activity is to gain perspective from children who are currently enrolled in a low-income school.

You are making a decision about allowing your (son/daughter/child/infant/adolescent youth) to participate in this study. Your signature below indicates that you have read the information provided above and have decided to allow him or her to participate in the study. If you later decide that you wish to withdraw your permission for your (son/daughter/child/infant/adolescent youth) to participate in the study, simply tell me. You may discontinue his or her participation at any time.

This study has no more risk than you may find in daily life.

There are no direct benefits to you for being in the study.

You can choose not to be in this study. If you decide to be in this study, you may choose not to answer certain questions or not to be in certain parts of this study.

There are no costs you will incur for being in this study. There is no compensation for you to be in this research.

If you decide to be in this study, what you tell us will be kept private unless required by law to tell. If we present or publish the results of this study, your name will be not be linked in anyway to what we present.

If at any time you want to stop being in this study, you may stop being in the without penalty or loss of benefits by contacting: Joel Croichy, jcroichy@email.radford.edu or Joan Dickinson, jidickins@radford.edu, 540-818-1669.

If you have questions now about this study, ask before you sign this form.

If you are interested in participating, please contact me, Joel Croichy, jcroichy@email.radford.edu or Joan Dickinson, jidickins@radford.edu, 540-818-1669.

This study was approved by the Radford University Committee for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Orion Rogers, Interim Dean, College of Graduate Studies and Research, Radford University, jorogers@radford.edu, 1-540-831-5958.

It is your choice whether to be in this study. What you choose will not affect any current or future relationship with Radford University.

If all your questions have been answered and you would like to take part in this study, then please sign below.

_____

Printed Name of (son/daughter/child/infant/adolescent youth)

_____

Printed Name of Parent(s) or Legal Guardian

_____   _____

Signature of Parent(s) or Legal Guardian   Date

_____   _____

Signature of Investigator   Date

I do □ or do not □ give my permission to the investigators to quote me directly in their research.

The investigators may □ or may not □ digitally record this interview.

Appendix G: Assent Form

Department of Design

RU
RADFORD
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P.O. Box 6967
Radford, VA 24142
(540) 831-5386
(540) 831-5719 FAX
www.radford.edu

ASSENT FORM

Exploring Joy and Learning in Low-Income Schools using Design-Thinking Strategies

I agree to be in a study about exploring joy in low-income schools. This study was explained to my parents or guardian and they said that I could be in it. The only people who will know about what I say and do in the study will be the people in charge of the study.

In this study, you will be asked to complete an activity that will take 10 minutes. The activity will ask you to draw, write and cut out pictures from magazines that bring you joy in school and in general. You will create a collage on a piece of paper provided to you.

Writing my name on this page means that the page was read by me and to me, and that I agree to be in the study. I know what will happen to me. If I decide to quit the study, all I have to do is tell the person in charge.

_____   _____

Child's Printed Name and Signature   Date

_____   _____

Researcher Printed Name and Signature   Date

_____   _____

Witness's Printed Name and Signature   Date

Appendix H: Round Robin

Innovating for People | *Activity Templates* | **Round Robin**

CHALLENGE STATEMENT

PROPOSED SOLUTION

Come up with an unconventional
way to address the challenge.

WHY THE SOLUTION WILL FAIL

Review the proposed solution, and
find a reason that it will fail.

This is your chance to be the
armchair critic!

FINAL CONCEPT

Review the critique. Then, quickly
generate an idea that resolves the
issues raised.

LUMA-IFP-AT-RR-1

Learn more: www.luma-institute.com
Prepared by LUMA Institute exclusively for Kristin Robertson.

LUMA INSTITUTE

Appendix I: Glossy Magazine Pg. 1

Exploring Joy and Learning in Low-Income Schools using Design-Thinking Strategies.

Joel Croichy, M.F.A. Department of Design Thinking,
2019 Radford University
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In this article, we explored joy and learning in low-income schools using Design-Thinking Strategies. Students who attend low-income schools suffer from a lack of resources at home, but also at their schools as well, which contributes to their struggles. We explored common problems for low-income youth, such as lack of exposure, lack of stability, and language barriers as well as solutions. The purpose of this study is to use design-thinking methods to figure ways to solve these common problems, understand low-income children, and build a better sense of what brings them joy both in and out of school. Individuals who participated in this study were teachers, former students, parents of former students, administrators, counselors, and church members who came from and worked in low-income schools. One activity included children from ages 7 to 9.

In stage one, before implementing the first design-thinking strategy, a 10-minute activity with children who attend Sunday school created collages of images that showcase what brings them joy in general. The second portion of stage one included a journaling exercise where two participants recorded their personal experiences attending schools in low-income communities in a journal. Stage two consisted of ten individuals who participated in the Rose, thorn, bud strategy. This DT strategy was based on the journaling results, and participants identified the positives, negatives, and possibilities. After the participants identified the positives, negatives, and possibilities associated with low-income schools, they then categorized those items into groups using affinity clustering.

Unfortunately, students attending low-income schools may likely experience adversity either in school or in their neighborhoods. The affinity clustering allowed the participants to explore and identify common issues associated with low-income schools, which still occur between the different age generations. All participants were able to come to an agreement that the problems that still exist are the need to hire more teachers who grew up in the same neighborhood as students so the teacher could better understand their students. Additionally, gang presence and magnet schools draw resources from other schools struggling, which led to higher dropout percentage among low-income high school students are significant issues too. They were also able to agree that not every low-income student fall into common pitfalls. The good that comes with living in a low-income environment, students may develop mental toughness, learn how to overcome adversity, develop street smarts, and learn how to adapt in their environment.

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The final phrase in stage one is based on the clusters, and participants created statement starters using "How might we" language. Stage three also included ten individuals participating in another design-thinking workshop, including two strategies: visualize the vote and round-robin. One of the participants mentioned that low-income schools are often shortchanged when it comes to having access to good teachers, high-quality school counselors, educational resources, and additional programs. She also included that the two statement starters that received the most votes and the unconventional solution from the Round Robin activity should require a low budget or none.

After the group received the most votes from the previous exercise, this group participated in the round-robin exercise. The group was then split into two teams, further studied the challenge from the statement starter, and discovered unconventional solutions to improve low-income schools. Finally, for stage four, a concept poster was created to showcase a visual representation of the proposed solution to future stakeholders. In the end, the researcher was able to realize how and why community matters for low-income students. Schools, parents, and the community should work together to promote the health, well being, and learning of all students. When schools actively involve parents and engage in community resources, they can respond more effectively to the health-related needs of students.