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Je Me Soviens Seesaw Helps to bring a closer relationship with seniors by integrating across generations

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Abstract

The goal for this project is to help us encourage closer relationships with our seniors by integrating across generations.

The world’s population is aging rapidly and this is becoming a big issue worldwide. According to the United Nations (UN), a person who is 60 or older is part of the older population. The UN also predicts people aged 60 and older make up 12.3% of the global population, and by 2050, that number will rise to almost 22% (Fund 2016). In other words, the senior population will reach over two million people all over the world. Therefore, we cannot neglect the impact of senior social issues that will generate from this fast-growing population trend. Instead, we should prepare ourselves to help them deal with all the possible problems they will encounter.

This thesis will challenge the existing social issue: elder emotional segregation that has been occurring globally for years. Bring seniors back into our society is my main discussion topic and design project. I also plan to compare different cultural backgrounds and incorporate my findings into the solution of achieving and creating a fun, meaningful outcome from connection among generations. Furthermore, the long-term goal for this project is to help the public to realize the important value of each individual senior citizen.
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1. Introduction: The reason I chose design for seniors as my thesis topic

I have received help and guidance from three significant elders during different stages of my life, and this has, indeed, changed and shaped my life. My growing up was deeply influenced by having strong and close feelings toward elders and learning lessons from their wisdom.

From the time I was two months old until I was seven, I grew up in my babysitter’s home. My parents were busy working on their careers, and they thought it would be better to ask someone who was well trained and could take care of me when I was young. As time went by, my babysitter became my surrogate mom. Although she did not have a high school education, she taught me many insights from her life experiences. Being humble, caring and sharing with others, and enjoying every moment in life are the three key points that I learned from her, which helped shape my personality. I appreciated her warm and caring heart, her looking after me, and her treating me as part of the family. Whether it was the issue of dealing with people or how to live a joyful life, my babysitter taught me with her wisdom. I believe she taught these values better than if I had learned them in school. Her teachings influenced who am I, and they continue to be useful to me.

When I was 13 years old, I encountered another life tutor – Miss Wu. She was my mom’s college friend. At the time, she was not married and did not have any children, but she took me in as her daughter. Miss Wu is a retired elementary school teacher; she came to visit us mostly in the afternoon with her 30-year-old, old-fashion bicycle. She always taught me that a grade could not determine who you are, but it suggests how much effort you tried. I learned most of the health
notions from her. She always suggested not drinking cold water after exercise, eating healthy food from a variety of supplies, doing more exercise to build up our immune system rather than taking medicine, and so on. With her encouragement, I started to become aware of some healthy issues and changing my diet habits.

My third life teacher was my sculpture professor who I met in college. He influenced me a lot on how to persistently pursue my interest and keep working on it as a life career. This professor constantly encouraged his students never to give up on their dreams and to try everything new. Moreover, during his class, he taught us sculpture as well as life lessons. He was a thoughtful teacher who could help students with their difficulties not only with studies but also with giving suggestions on life direction. Although he did not talk much, he taught us by role modeling a positive attitude toward life.

Because of the value I gained from these three seniors, I think it is important to share their wisdom with the public and let everyone know that elders are looking forward to giving advice and helping with the younger generation. Also, they are part of the biggest history book of human life experiences that we can learn from, which includes their cultural backgrounds.

I also incorporated cultural differences into my design background. These differences were one of my biggest motivations to choose elder design as my thesis topic. After I moved and studied in the USA, I discovered that there are many different attitudes towards seniors compared to my cultural background (Eastern Culture). These attitudes are influenced by various aspects, such as living style, educational background, social welfare, and cultural traditions. Therefore, I integrated both advantages from two different cultures (Western and Eastern) as my design philosophy and created a medium that can help generations get closer to our seniors.
2. General Concept: Define Elder

Two main resources define if a person is classified as old. First, most developed countries have accepted the chronological age of 65 as a definition of elderly or older person. Second, the UN identifies those who are 60+ years as the older population. Furthermore, gerontologists have divided old age into three sub-groups. These sub-groups are defined by different physical conditions people experience: the young-old (approximately 65–74) are still fit, active, and able to care for themselves; the middle-old (ages 75–84) are becoming increasingly frail, a condition marked by serious mental and physical debilitation; and the old-old (over age 85) may need more medical support and are facing some irreversible damage issues that may result from age-related macular degeneration or glaucoma. (OpenStax 2016).

2-1. Aging is a Worldwide Phenomenon

This phenomenon is illustrated in Chart 1 and Figure 1, which both depict a distribution of the aging population.
Today, elders have been rapidly growing worldwide, especially in the developed countries.

There are some possible reasons that influence the aging population; e.g., great advances in medical service; improvements in technology; developments in health care; and economic, social, and political growth. These reasons not only help us have a better living environment but also
raise our life expectancy. According to the United Nation prediction, the population age 65 and over will more than double from 7.6% today to 16.2%. In other words, people who are 65 and over will outnumber children under the age of 5 by 2020 (Pirkl 2009).

I have narrowed the aging population research down from the worldwide phenomenon to two countries: Taiwan where I grew up and the USA where I am temporarily living. These two countries have many different perspective points and cultural living differences in the aging group.

3. Aging Population in USA

Chart 2 shows how the U.S. Bureau of Census breaks down the aging population compared to the total population in the U.S. from 1950 with estimates out to 2030.
According to the U.S. Census Bureau, 13% of Americans are age 65 and older out of 40.3 million Americans. In addition, they predict the aging population is expected to more than double, to 89 million, by 2050. In 2010, Baby Boomers began reaching age 65, swelling the 65 and over population in the United States from 13.0% to an estimated 20.0% by the year 2050 (Pirkl, The Demographics of Aging... "The Swelling Aging Population, Future Projections" 2009).

4. Aging Population in Taiwan

Figure 2 shows Taiwan’s aging population broken down into three categories and how those categories are expected to grow.

![Aging Population in Taiwan](image)

Figure 2: Aging population in Taiwan
Taiwan, with its continuous modernization and low birth rate, is experiencing a dramatic change in the age structure of its population. At the end of 2015, the number of people aged 65 and older in Taiwan reached nearly 1.6 million, more than 7% of the overall 21 million population, and thus enough for the World Health Organization to classify Taiwan as a society with an aging population. According to the Ministry of the Interior's statistics on life expectancy, inevitability is indicated that Taiwan will be defined as an "aged" society in which the UN defined 14% or more of its population is 65 years old or older. Furthermore, in thirty-three years the elder proportion will account for 20% of the population, which means one out of every five citizens on the island will be at least 65.

5. Cultural Differences

After coming to the USA and temporarily staying here, I realized there are many living differences between Eastern and Western cultures. In my opinion, a number of reasons influence living situations from culture to culture. For instance, educational background, weather, geographic land size, ways of thinking, traditional cultural knowledge, transportation, and notion of health.

Figures 3–7 demonstrate the different living styles between Eastern and Western cultures: connection with people, living style, elders’ living style, attitudes toward elders, and notion of health (exercise). The blue columns represent the Western culture, and the red columns represent the Eastern culture.
1. Connection with people

2. Living style

3. Elder living style

4. Attitude toward elders

5. Notion of health (exercise)

In Asia, people have been living close (house by house) since ancient times because of the high-density living situation. In past ages, Chinese ancestors developed a family-based courtyard to
encourage every family member living together to have closer relationships by sharing and helping each other. The intimate living environment influenced people to have strong and keen connections with others. Therefore, compared with the Eastern culture, Americans tend to have more independent living because of the large landscape in the US. This distance influences the connection among people and the need to own personal vehicles.

The other big point of cultural difference is the concept of family. From my experience, I think it is essential to maintain close family relationships in life. For example, children have to respect parents or grandparents with their different viewpoints without obeying their suggestions. As in the traditional Eastern cultural, after children get married, they should either move into their parent’s home or provide living space and take care of both sides of parents as the first priority in marriage. Although this tradition is less common nowadays, this responsibility of caring for elders is embedded and has been passed down for generations. Today, we can still see a similar phenomenon happening in Taiwanese families.

Mostly in Taiwan, people take weekends as important days to spend time with their families. Often, we exercise, like hiking or picnicking in the park, while gathering with family members. This habit gradually influenced us to have a regular exercise routine since we were young. This is different from the Western culture; because of climate conditions, people spend time together depending on weather considerations. Also, weather conditions are part of the reason that we see the Western culture would rather exercise in a gym than outdoors.
6. Senior Living in USA and Taiwan

From the above cultural differences, I also observed some reasons that also influence senior living situations in both countries. These differences create the chance for us to get in touch with the seniors.

1. The living content size and city plan influence ways of seniors’ transportation:

   Ninety-five percent of American households own a car and 85% of Americans go to work by car. From this statistic, we can see that a car is an essential transportation for Americans to commute from place to place. The other point we could infer is that because of the large continent and separate living city plan, a car is a basic transportation need for everyone. Compared to the country size and city plan in Taiwan, people tend to go to places by walking, riding a motorcycle, or biking because of the gathering living situation. By comparing these factors, there is more potential chances to encounter seniors in Taiwan. Today in Taiwan, people are more aware of health conditions; some people would prefer going places by walking or biking as part of their exercise.

2. The Concept of Family Affects Elder Living Status:

   Research shows that 60.4% of elders live with their offspring in Taiwan. This represents the important concept of family in Eastern culture and results in different elder care and living status in Taiwan. Most elders are living with their offspring and cared for by their children until they need professional medical support. At that point, elders are asked to live in a nursing home in their last years. Therefore, many elders with various health
conditions are often seen gathering in public spaces and accompanied by their grandchildren while waiting for their working parents to come home.

Compared with elders living in the USA, there are four main elder care and living options: independent/retirement home, assisted living, nursing home, and home care (A Place for Mom 2015).

These four common senior health care living options are determined by an elder's physical and medical needs and also personal financial status.

7. Field Trip in USA -- to learn different elder health care systems and living situations:

From the observation results, I decided to visit and learn about different elder health care systems in the USA.

1. St. John’s Brickstone – Contemporary Independent Senior Living: This is an elder retirement home that cooperates with St John’s elder health care service. St. John’s offers a long-term, senior living environment with a specific interior designed for elder living. Within St. John is an elder health care system that provides skilled nursing. Most of the residents are physically active elders. St. John's also offers different daily activities for elders to participate in with different conferences or courses in co-operation with St. John Fisher College. Figure 8 is a picture of the outside of this facility, and Figures 9 and 10 are an example of the Monthly Bulletin of activities.
2. The Hurlbut: Hurlbut is a medium-size nursing home in Rochester with specific doctors and nurses working inside. Most of the seniors are in need of different medical services. Seniors have separate living arrangements based on their different physical issues. Hurlbut offers daily gathering activities in the lobby, and most activities are less active; e.g., bingo and poker card games. Figure 11 is an example of program activities, and Figures 12 and 13 depict two views of the facility.

3. Generation Elder Care: This day care center is designed to provide different activities based on monthly and seasonal daily routines. Generation Elder Care is a place that provides chances for seniors to socialize with others. For example, elders come to the day care center every day at 8 o'clock in the morning. They can read the newspaper together; do crafts with children; have lunch; and do group exercises, stretching, and relaxing. Figures 14–17 show elders participating in different activities, and Figure 18 is an example of an activities calendar.
Figure 14: Elders in Generation

Figure 15: Elders in Generation exercise

Figure 16: Elders in Generation walking

Figure 17: Elders in Generation making craft

Figure 18: Scheduled activities in Elder Generation
1. Physical Changes and Problems

From my visiting different elder care facilities, I noticed that there are some common elder physical changes and health issues.

First, people are all inevitably facing being older. The most obvious changes start with our appearance: our skin become less elastic and wrinkled, grey hair increases, hearing ability decreases, glared vision increases, problems with sleep increase, bone density decreases, and bodies become deformed by different physical issues.

Secondly, chronic disease has placed a significant burden on older adults and health care systems. According to research, about 80% of older adults have at least one chronic disease, and 68% have at least two. The most common chronic diseases in elders are diabetes, arthritis, hypertension, and lung disease. Based on these symptoms, I want to achieve a deep understanding of how physical problems may affect elders’ daily lives. I started to simulate the most common physical issue that elders may face in their age: arthritis.

Figures 19–24 show examples of simulating various types of movement.
After the user simulation understanding, I realized that because of the physical problem, elders are affected with less balance and less strength issues. Therefore, falls cause most accidental deaths for the elder age 65 or more (Zhaoyan 2007).
2. Stereotype

What is your first thought when talking about elders? Slow motion, talk loudly, cannot hear properly, annoying and bothering, stubborn, and looks weird are the most common stereotypes for elders. Often, these are the result of their physical issues, but not all elders are like this. From other points of view, because of the strong elder stereotype embedded in our minds since we were young, we do not have a correct notion about elders, and even more, elders start to believe these stereotypes. Gradually, elders’ emotional and social disconnected relation problems are produced by the attitude of others toward them. However, seniors are willing to share experiences with others, want to get involved, and are eager to participate in our society. This was my conclusion from my interview results with Grey Seniors at Generation Elder.

3. Interview with Seniors

This interview took place in the Generation Elder Care Center in Rochester, New York. The 8 participants (female: 6, male: 2) with ages from 60 to 90 were elders who enrolled in this organization. This interview shows the elders’ daily routine from weekdays to weekend activities and their interests. Charts 3–11 shows the questions used in the interview.
1. What do you do on the weekdays? (8 responses)

- 25% Participate in Elder Care Center Program: 5 days / week
- 12.5% Participate in Elder Care Center Program: 4 days / week
- 12.5% Participate in Elder Care Center Program: 3 days / week
- 62.5% Participate in Elder Care Center Program: 2 days / week

Chart 3: Interview 1

2. How do you commute from home to Elder Care Center? (8 responses)

- 50% Husband/ Wife
- 25% Family Member: daughter, son, daughter in law, son in law ...
- 12.5% Medical motor service
- 12.5% Friends

Chart 4: Interview 2
3. Do you like to come to Elder Care Center? if yes please explain why
(8 responses)

- 87.5% Yes
- 12.5% Other

Chart 5: Interview 3

4. What are your daily routines or activities you will do in the weekday except participate in the elder care center?
(8 responses)

- Winter: spend most of the time at home watching TV; Summer: walking around in the community
- Do some stretching every morning
- I will have a social community member come to visit me for the whole day and spend time with me keep me accompany
- Spending time with family members
- House cleaning
- Listen to music with wife
- Call friends, spend time with family member
- Spend time with husband, driving around places

Chart 6: Interview 4
5. What do you do mostly on the weekend? (8 responses)

- Go to Walmart and meet up with daughter
- Go to church / do grocery shopping / visiting friends
- Go to church, doctor, meeting friends, goes to park
- Go to Church
- Stay home, spending time with family
- Watching TV, hang out with family member
- Spend time with family member
- Spend time with family as routine

Chart 7: Interview 5

6. How do you schedule the time? (8 responses)

Chart 8: Interview 6
7. Would you like to spend more time with family on the weekends? or other activities?
(8 responses)

8. What are your top interests (3-5)? (8 responses)

- Doing craft, grocery shopping
- Playing and watching football match / reading / watching movie
- Walking around the community, doing craft, watching TV
- Baking, singing, house gardening
- Watching TV
- Reading book
- Cooking, crafting, sewing
- Hang out with friends, sewing, cooking

Chart 9: Interview 7

Chart 10: Interview 8
9. What kind of the age group would you like to spend time with? why?
(8 responses)

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
</tr>
<tr>
<td>little one around 2-8 years old</td>
</tr>
<tr>
<td>Children, used to take care of children</td>
</tr>
<tr>
<td>20-30, enjoy involve with them especially participated in sport activities</td>
</tr>
<tr>
<td>30-50, can talk with diversity topic</td>
</tr>
<tr>
<td>Children, used to be a children care consultant</td>
</tr>
<tr>
<td>Children, they are so cute</td>
</tr>
<tr>
<td>20 years old, more interesting</td>
</tr>
</tbody>
</table>

Chart 11: Interview 9

10. If you have a chance to chose where or what to do, what would you want to do? and where would you like to go? why?
(8 responses)

<table>
<thead>
<tr>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>I would like to go to Walmart all the time, because it is convient with public transportation and I can shop everything i need in there including paying the bills.</td>
</tr>
<tr>
<td>Walmart, visit my sons.</td>
</tr>
<tr>
<td>Visit family members</td>
</tr>
<tr>
<td>Everywhere</td>
</tr>
<tr>
<td>Bar, meet new friends</td>
</tr>
<tr>
<td>Everywhere</td>
</tr>
<tr>
<td>I want try and go everywhere</td>
</tr>
<tr>
<td>Not anywhere, just want spend time with friends</td>
</tr>
</tbody>
</table>

Chart 12: Interview 10
From the interview with seniors, we can see that most of the seniors were showing a high interest in having an active social life at their age and liked to be involved and participate in different low active activities. The most important outcome from the interview is that family relationships play a significant role in seniors’ lives. In addition, this interview determined my design direction: to help seniors reconnect with the public starting with family relationships.
1. Design Purpose

The purpose of this project is to help us re-build a closer relationship with our senior population by incorporating cross-generational groups.

According to the field research and observation from two different countries, Taiwan and the USA, elder emotional segregation has become a critical issue in both nations. It may be gradually influenced by the negative impression from elders and untrue stereotypes from seniors. My design challenge is to break through those stereotypes about elders and re-connect our relationships with them by taking advantage of points from both Eastern and Western cultures. From my observation, I think there are three main factors that explain Eastern culture has developed a more keen relationship with elders. People have respect for elders, elders have a better idea of health, and seniors have routine exercising habits. Also, I applied these three key points as my design philosophy background, which can both encourage elders themselves to get involved in community activities and assist other generations to learn and get closer to the seniors.

Je Me Sovien Seesaw is a design product medium that could help elders stay mentally healthy and be active in communities. This design will allow the public to get closer to seniors and help both groups share experiences with each and vice versa.
2. **Design Development**

According to research, the main issue I want to focus on the elder generation is to help them reconnect to our society and decrease public's biased viewpoint of old people stereotypes. In addition, from the interviews and observation field trip, I found that seniors are very willing to share experiences and get in touch with people. Working on light tasks (handcraft, singing, and bingo) or doing some short-term project are their favorite options to get involved in the community.

Therefore, I started to look up the reference for assisting elder connection to social programs from both countries. Most of the programs run in Taiwan are supported by the government. For example, The Seniors Community College offers elders the opportunity to learn different interests by curriculum systems and counted with credits. Professional teachers teach topics, and the classes have a reasonable tuition fee. Seniors attend lunchtime at a local elementary school. This was an experimental program tested in one small elementary school in Taipei City. The new birth rate has decreased to a minus point in the past decade; in other words, there are less children enrolled in school, meaning that there will be more classroom vacancies compared to the past. On the other hand, government wants to assist elders getting involved in the community, and they discovered that the senior generation is very close to their grandchildren and most of them are living together. So, having elders accompany their grandchildren at lunchtime would both help seniors connect to society and keep their social life active.

3. **Idealizations Development: Elder Local Community app**

From both case studies, I came up with several design ideas.
1. Design a program which asks participants to work in a grocery store with low work hours and low laboring tasks each week.

2. Design a cooperation app between elders and local grocery store or shopping mall according to the seasonal shopping theme. Elders can select from different options or tasks based on the current shopping season or trends, and publish their experience. "Figures 25–28 depict details from my app design for the elderly.

Figure 25: Design ideal – Elder app 1/4

Figure 26: Design ideal- Elder app 2/4

Figure 27: Design ideal- Elder app 3/4

Figure 28: Design ideal- Elder app 4/4
4. Define Design and Design Thinking

During the 2016 winter break, I went back to Taiwan to complete the field research and observation for my thesis, and it was a big breakthrough to all the research and helped to define my design direction.

4-1. Elder Health and Exercise Notion in Eastern Culture

In Taiwan, the elder healthcare system is just in the beginning stage, because most of the healthcare system, including eldercare, has been under the government-funded healthcare program for a long time. Yet, because of the well healthcare system, everyone has the basic notion of health from monthly check-ups and from part of the cultural background knowledge: Chinese medicine. The basic notion from the Chinese medicine is talk about the inner physical side (food, diet, metabolism, etc.) to the outer environment side, which could possibly influence our body status. Therefore, in Taiwan or in the broader sense of Eastern culture, people are more aware of the health issues not only on daily diet but also on routine exercise. From the time we are young, we are educated to have routine exercise with family members, and we took this as part of the family reunion, especially on the weekends. The habit of exercise was built and grows throughout our lifetime. It is easy to see people doing different exercises during the early morning and after work in public areas. Even more, today, there are some community-formed senior exercise groups for hiking one day per week.

4-2. Attitude toward Elders in Eastern Culture: Respect

Beyond the point of speaking about exercise, it is often seen that seniors are accompanied by their grandchildren while doing exercise in the community. This activity also shows the cultural difference that Eastern culture has closer relationships between grandparents and grandchildren.
On the other hand, grandchildren always gain life experience from grandparents because of a long-term life sharing. The other different point I found out from my observation is the relationship with the seniors. Having a respect and kind attitude toward seniors are taught in an Eastern culture family. This keen attitude toward the seniors not only happened in the family but also contributed to the whole society. Although I was born and grew up in Taiwan, by living apart from my culture for one year, the point of “the attitude toward the elder " has become the biggest standout point from the rest of the cultural differences in my observation. Furthermore, because of this point, I would like to incorporate the advantages from Eastern culture on elder issues and add it into Western culture.

Overall, from the field trip for cultural observations, there are three key points I would like to address and involve in my design: The notion of health, the importance of exercise, and the attitude toward seniors.

4-3. Similar Human Interaction Environment from both Cultures

After I came back to the USA from winter break, I started to do my second phase of field research on observing elder relationships with others in public spaces in the US. The surprising result turned out that in the US, a lesser phenomenon shows that grandparents go to public places accompanied by their grandchildren. However, it will be a great opportunity and potential to encourage both generations to hang out together in the same environment. We could apply this similar philosophy from Taiwan’s living culture.

Elders often rest around the cafeteria space in a mall or they mostly go to a park and sit on the bench. However, those spots are often found around the playground or beside the main
entertainment resting area where the younger generation would gather. So, why not pull their physical distance closer and create closer relationships between each generation like what is happening in the Eastern culture? Moreover, the distance helps elders or the public get in touch with others and develop more keen relationships within both generations. Figure 29 illustrates an example of sharing an environment.

**Sharing Environment**

Cross generations connecting their relationship start by sharing the same environment.

![Sharing Environment](image)

**Playground / Community Park**

Figure 29: Sharing Environment
4-4. Involving Children as Part of the Design Solution

After researching and observing the two different cultures’ living background and cultural differences, I decided to involve children as another design point, which could achieve my design goal to bring elders back and reconnect them to our society. Involving children as part of the design element also benefits children with developing their social and emotional skills by interacting with the elders. Furthermore, both elders and children share similar compensated characteristics and needs with each other.

4-5. Children and Elders Compensated Characteristic and Personality

From my observations, children between 4 and 10 years old are the ones who would like to spend more time in public spaces with their close family members from both cultures. According to the research, children at the age of 4-5 tend to imitate adults and start to learn and develop attitudes about right and wrong by sharing their feelings with people. Children start to develop chronological sequence and have a longer attention span by between the ages of 6 and 8. They also begin to learn and share their kindness and generosity with others. At the age of between 9 and 12, they start to develop and learn the abstract concept and valued belief of the important adults who participated in their life. Generally speaking, children at the age of between 4 and 10 possess the active and spontaneous characteristic of exploring this world. On the other side, the selected elder group age between 65 and 75 are more experienced and patient with encountering every happening throughout this world. They gain lots of wisdom from their unique life experiences and they are willing to share those experiences with the young learners. Guiding and sharing with the young generation are the two most common elements when we gather with our seniors. Overall, these two generations share similar social needs: accompanying and belonging;
but, they also have complementary characteristics. According to these findings, I think it would be a great chance to design for their needs and also start to assist seniors in reconnecting in our society from this design project. Figure 30 compares users’ characteristics of elders and children.
1. Ideation Sketches / 3D Sketches

To help seniors get closer to the public, a playground is the key inspiration point throughout the design. I started to analyze the different play points (e.g., different height, swing, crowd, speed) from the playground equipment. Based on different fun points I developed different kinds of forms that involve two generations working together: elders can take exercise from the designed product and children will have fun and learning opportunities through the interactive process.

Figures 31–54 provide a group of ideation sketches.

I. Various light-weight exercise ideas: According to the on-site interview and observation in Generation Elder care center. I realize it is important for seniors to practice light-weight stretch exercises daily to enhance their capability for balance and muscle strength. Also it is essential to do the exercise with physical support equipment like an arm-chair.
II. Focus on lap stretch exercise with various design ideas:

Senior may sit on the chair practicing with the designed air flow equipment for training their lap muscle strength. Children may be involved in this exercise from the other side to make this activity more fun and can encourage elders to do more exercise.

Figure 33: Ideation 3

Figure 34: Ideation 4

Figure 35: Ideation 5

Figure 36: Ideation 6
III. Focus on interactive back stretching exercise: Back pain is also a common problem when facing aging. It is crucial to think and design with back stretching exercise for elder with various possible stretching positions. It is also important to think about safety and ways to cooperate with this activity.

Figure 39: Ideation 9
(Sitting on the floor doing the back stretch)

Figure 40: Ideation 10 (possible form1)
Figure 41: Ideation 11 (possible form 2)

Figure 42: Ideation 12 (idea prototype)

Figure 43: Ideation 13 (full scale prototype)

Figure 44: Ideation 14
(Stretching back with standing position)
IV. Comprehensive exercise: Developing different design with focus on various body parts training. I think it would be a better idea to design a complete exercise which can train elder’s balance and muscle strength and also involve some play element in design to help elder and child work closely by having fun-exercise experience. Initial design ideas come from seesaw.

(Using two different size of bouncing ball doing similar seesaw movement)
Gradually, as the form and motion study evolved, the seesaw became the most suitable design result. In addition, I started to study the different possibilities to redesign the seesaw to accommodate this design problem.
2. **Bench Marking**

Figure 55 shows bench marks by several versions of the seesaw.

<table>
<thead>
<tr>
<th>Size</th>
<th>47.75''×15.25''×14.5''</th>
<th>4''×10''×14''</th>
<th>29.5''×31''×78'', 360 rotation</th>
<th>20''×20''×23''×22''</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>$50-144</td>
<td>$169-250</td>
<td>$555-100</td>
<td>$1616-1840</td>
</tr>
<tr>
<td>Age</td>
<td>1-4</td>
<td>4- adult</td>
<td>5+</td>
<td>2-12 Stainless Steel, Spring, Aluminum Seat</td>
</tr>
<tr>
<td>Material</td>
<td>Molded Plastic</td>
<td>Wood panel, Steel</td>
<td>Metal, Plastic, Tube</td>
<td></td>
</tr>
<tr>
<td>Place</td>
<td>Indoor</td>
<td>Outdoor</td>
<td>Outdoor</td>
<td>Outdoor</td>
</tr>
<tr>
<td>Safety</td>
<td>Safe</td>
<td>Medium</td>
<td>Medium</td>
<td>Safe</td>
</tr>
</tbody>
</table>

Height design consider with age and influence safety issues

Figure 55: Bench marking

3. **Design Development**

3-1. **Design Need to be Face to Face**

Because of the design to create closer relationships, eye contact is a key element in the first consideration. A 45-degree sitting position from the center line is easier for elders to sit on the chair, and it also creates eye contact by sitting in this position. Figure 56 full scale study with 45-degree angle sitting. Figures 57–64 small scale wire study sketches.
Learning about eye connection design by bending the wire also requires us to think about the pivot point from various aspects. For example, how to cooperate in an easy to attain position for elders and the height movement from the ground to the top travel point is important on the elder side. Because of the lower travel distance from ground to top it is safer and more secure to help so the elder can be more balanced. On the other hand because of the need for the safety concern for elders it require shorter distances from the pivot point but provides more fun experiences on the child's side with longer travel movement from ground to top point. And while doing this
exercise both players can easily sense others emotional feelings and may bring this experience to next “connected relation” stage.

3-2. **Study Different Seat Heights Travel Distances**

Height influences both generations on exercise and fun experiences. The elders’ height was designed on the short distance part with a spring underneath, which could reduce the pressure and stress from bouncing. This also could help children easily lift up the elder. The longer side was designed for the children to play with the weight control and have a fun experience with the different height. Studying and experimenting with different heights influenced the safety concern for both sides. Figures 65–72 show design considerations for different heights.

![Figure 65: Different Height](image1)

![Figure 66: Different Height drawing 1](image2)

![Figure 67: Different Height drawing 2](image3)

![Figure 68: Different Height modeled in wood](image4)
Figure 69: Different Height study scale 1

Figure 70: Different Height study scale 2

Figure 71: Different Height study scale 3

Figure 72: Different Height study scale 4
3-3. **Half Scale Study**

A 4-foot long, half-scale prototype helps to visualize the realistic study on height and also it serves as a reference model for full scale. Figures 73–76 show different angles of the half scale.

![Figure 73: Half scale 1](image1)
![Figure 74: Half scale 2](image2)

![Figure 75: Half scale 3](image3)
![Figure 76: Half scale 4](image4)
3-4. Full Scale Model Building

An 8-foot long full-scale size model was created from plumbing pipe. I studied the actual seat height travel distance from both ends and then I adjusted the seat height distance between the two seats. I also adjusted the proximity of the seesaw players’ seats. Figures 77 and 78 picture the full-scale model.

![Figure 77: Full scale model 1](image)
![Figure 78: Full scale model 2](image)

3-5. User Testing from Full-Scale Model

The structure was built within the exact size in the real model testing. The goal for testing the model was to determine whether the design length, spring effect (elder side), stopper (children side), width for the whole structure, and both handles were safe and stable. The result by testing turns was that it was a functional product. Figures 79 – 87 depict user testing of the full-scale model.
Figure 79: Full scale model 3

Figure 80: Full scale model 4
Figure 81: Full scale model 5

Figure 82: Full scale model 6
Figure 83: Full scale model 7

Figure 84: Full scale model 8
Figure 85: Full scale model 9
Figure 86: Users testing 1

Figure 87: Users testing 2
3-6. Model Rendering with Real Material Concern

Figure 88 shows the materials used in the full-scale model rendering.

![Figure 88: Material](image)

3-7. Dimension

Figure 89 depicts the measurements of the full-scale model.

![Figure 89: Dimension](image)
3-8. How Does it Work?

Figure 90 shows how the seesaw works.

Figure 90: How does it work?
3-9. Potential Market

Living Community/Senior Living Community: These are the most common elder-gathering and potential family reunion places. Since the design purpose is to help elders get back to our society, it would be a great opportunity for people to get in touch with different elders in a community. Figures 91 and 92 show examples of these two places.

Figure 91: Potencies Market in senior living home

Figure 92: Potencies Market in family living environment
Chapter 5: Conclusion and Further Improvement

1. Conclusion

The world today is facing a rapid change in our aging population. There are more people that will reach to the elder aging group status. It is definitely influenced by various aspects especially from medical technology improvements and self-health, awareness-conscious support. But we are not ready for this dramatic change in aging status in our society. We still apply and convey the wrong stereotype to elders instead of learning and sharing experiences with them. Gradually, we tend to be more emotionally segregated from our seniors.

Both emotional and physical issues are becoming more and more important for our society. Because the aging group is growing rapidly, there is no time to prepare, but it needs to be dealt with in an emergency time frame. Without hesitation we need to prepare for this phenomenon, we need to prepare to deal with and provide a friendly, comprehensive living environment for our seniors. Therefore I believe that designers can understand why and how this stereotype could deeply influence a wrong perspective about elders. On the other hand, it is important to learn what the elders needs are and break through those old stereotypes about elders. Furthermore, we should reembrace our seniors back into society by valuing their life experiences.

I studied two different cultures and apply both of their advantages into my design. I also tried to decrease the emotional distance while focusing on the user’s needs by requiring two people to use especially integrating both elders and children to play on the seesaw. It is designed to compensate for weight differences to allow an adult and a child to play together. The orientation of the participants places them in close physical proximity, encouraging personal interaction, eye contact and an opportunity for emotional bonding while providing exercise for the elder and fun for both. This could help us to bring our seniors into a closer relationship with the rest of society by sharing and playing together with children.

Je Me Soviens Seesaw is a medium that helps us to eliminate the emotional barrier from seniors and the first step in the mission for my design achievement. Je Me Soviens shows great potential with a product that could help us foster and gain closer relationships with our elders.
2. Further Improvement

From the final thesis defense, there are some points for project improvement. The most significant improvement is the concern for safety.

1. Elder side: The handle provides the extra stability and support while exercising, but for elders with dizzy or dementia issues, it would be better to add a seat back support to resolve the safety concern. An even better improvement could be to design an attachable handle to the whole structure that allows more fixed and stable support while exercising.

2. Children side: Although the height creates enjoyment for children, there are a number of safety concerns with different ages of children. A better design would be to provide extra soft protection from the bottom or create a supporting peddle that would lend a sense of security.
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