

Developing Intergenerational Learning Resources: Lessons from Designing and Testing a Card Pack

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Abstract

While China is facing the challenge of an aging population and increasing age segregation, research and practices on intergenerational interactions is still in its infancy with a heavy focus on grandparenting in family settings. Adopting a “design as research” approach, we designed and tested a card pack aimed at improving interactions between “skipped generations” in the Chinese context. This article introduces the card pack informed by insights from previous pilot studies. We connect our self-reflections and discussions with our review of empirical studies published in the *Journal of Intergenerational Relationships* and offer our thoughts and suggestions when it comes to designing more inclusive intergenerational learning resources in the future that integrate more cultural and community resources.

Keywords: Intergenerational learning, card pack, skipped generation, user feedback, design as research

Introduction

Recent decades have witnessed increasing attention paid to interactions between different generations, especially those between children or young people and older generations. We are living in an aging society and are experiencing greater segregation between generations both institutionally and spatially (Gratton & Scott, 2017, p. 326), leading to changing patterns of how different generations encounter, interact, and communicate with each other.

The topic of intergenerational learning has engaged researchers, institutions, and individual practitioners in a number of European countries and North American contexts for more than four decades (Kuehne, 1999; Schmidt-Hertha, 2014). However, little research and practical cases can be found in existing scholarly literature published in China, where most existing discussions are centered around grandparenting instead of other forms of meaningful interactions between multiple

generations within or outside household settings (Yuan & Wu, 2021). Given the prevalence of grandparenting, it is not surprising that family is the most commonly researched scenario related to intergenerational interactions and learning in mainland China. For example, an empirical initiative called the “Shaping Students’ Vacation Life Project (SSVLP)” offered support to intergenerational learning in family settings to pupils in seven primary schools and their grandparents during the pandemic (Lyu et al., 2020). Through interviews with 11 teachers and 7 families, the researchers found that both generations (grandparents and grandchildren) gained more health knowledge, life skills, and values, increased understanding of each other and built closer relationships. Apart from this type of extreme situation (when grandparents found themselves in closer contact with grandchildren due to the COVID-19 pandemic), a recent study using web search was conducted to reach an understanding of the breadth and types of intergenerational programs in mainland China (Li et al., 2020). The authors identified 518 distinct programs from 2003 to 2017 and noted an imbalance of such initiatives between different regions (a majority of which are located in eastern regions) in mainland China as well as urban and rural differences (only 5.4% of the identified results took place in rural areas). They also classified the content areas into cultural heritage, recreational activity, elder care, child and youth development, and community building. The authors concluded that most such programs and practices were at an early stage of development, as they often relied on government funding and were almost always introduced in the form of “one-time-only” activities. These programs were often conceived in aging-centric terms with little policy consideration of how all generations can benefit from these programs. The authors argue for more systematic efforts and support that can lead to more sustainable development and implementation of “longer duration intergenerational engagements” ((Li et al., 2020, p.14).

Given the scarcity of existing research and practices, we decided to engage with the topic by adopting a “design as research” approach (Stapleton, 2005), which recognizes that design is a fluid process that “follows an iterative decision sequence of problem—analysis—synthesis—evaluation” and that “design, as a research process, has a clear focus on action, and it’s this concept of action which ultimately fuses the process of design with the family of research approaches termed action research” (p.2).

Given this backdrop, our study employs a “design as research” approach (Stapleton, 2005), which recognizes that design is a fluid process that “follows an iterative decision sequence of problem—analysis—synthesis—evaluation” and that “design, as a research process, has a clear focus on action, and it’s this concept of action which ultimately fuses the process of design with the family of research approaches termed action research” (p.2). We believe that the “design as research” approach is particularly valuable for addressing the complexities of intergenerational dynamics within the Chinese cultural context. By allowing for interactive testing and refinement of the intergenerational learning pack, this methodology can help us to capture the

subtleties of cultural and generational differences. In addition, we can continue to improve the original design to facilitate meaningful intergenerational engagement in the future in response to user feedback. We are aware that while this methodology facilitates immediate application and feedback in real-world settings, the highly contextualized nature of design experiments may limit their applicability across different cultural or demographic contexts, which requires cautious interpretation and strategic replication in diverse contexts (Barab & Squire, 2004).

In this paper, we will introduce the process and outcome of an intergenerational learning card pack we designed in the summer of 2022 with the goal of exploring possible approaches to encourage and maintain meaningful intergenerational interactions without in-person facilitation. In the following sections, we will share why and how we designed the card pack, what we learned from the user feedback conversations with two user groups, and our review of intergenerational projects and case studies published in the *Journal of Intergenerational Relationships* during the past 15 years. Towards the end of the article, we put forward our suggestions and vision for developing intergenerational learning resources that could be an additional direction to onsite intergenerational programs.

Before delving into the detailed exploration of our study, we want to outline the questions that guided this study:

1. How can we develop a straightforward and practical tool to facilitate meaningful interactions between “skipped generations” within the Chinese cultural context?
2. How do the target users utilize the designed intergenerational learning card pack, and what are the perceived benefits and challenges according to their experiences?
3. Informed by empirical studies from the *Journal of Intergenerational Relationships* (2008-2022), how can the design of the intergenerational learning card pack be optimized to address identified needs and integrate successful strategies for enhancing intergenerational interaction and learning?

Motivations and Assumptions

When it comes to intergenerational learning, it was noted that a number of related terms were applied in scholarly discussions. For instance, the distinction between intergenerational and multigenerational was seen as crucial. Villar (2007) suggests that “intergenerational” implies “the involvement of members of two or more generations in activities that potentially can make them aware of different (generational) perspectives” as well as “increasing interaction, cooperation to achieve common goals, a mutual influence, and the possibility of change (hopefully, a change that entails improvement)” (pp. 115-116). He believes that “multigenerational” can be used broadly to address policies or situations with more than one generation. In his view, “intergenerational” is goal-oriented as it entails the

aim of modifying “generational points of view (maybe increasing their mutual understanding)” or promoting “products or services created by collaboration among people of different generations” (Villar, 2007, p. 116). In comparison, Watts (2017) is in favor of the term “multigenerational”, which entails efforts to bring together greater cross-community involvement. However, he thinks that intergenerational is a problematic term, which can take many guises and have too many entangled meanings.

In our study, we adopt the attribute of “intergenerational” and position our design in the context of “intergenerational practice” that emphasizes the engagement of two different generations as well as meaningful interactions and communication, similar to the definition created by Beth Johnson Foundation:

Intergenerational practice aims to bring people together in purposeful, mutually beneficial activities which promote greater understanding and respect between generations and contribute to building more cohesive communities. Intergenerational practice is inclusive, building on the positive resources that the young and old have to offer each other and those around them (Centre for Intergenerational Practice: Beth Johnson Foundation, 2001).

As educators, we relate our work closer to intergenerational learning, which implies that participants from different generations will be engaged in learning as “a process that leads to change, which occurs as a result of experience and increases the potential for improved performance and future learning” (Ambrose et al., 2010, p. 3).

Since we are working on an emerging topic with little empirical research as stepping stones, we attempted to target skipped generation pairs (grandparent-grandchildren). Before and when we were designing the card pack, we believed that this targeted group would pose great challenges as we would need to consider drastically different cognitive levels, as well as their different communication modes and styles. Our goal was to develop a beta version toolkit for improving and stimulating conversations and interactions between the two generations while meeting the general goal of increasing interpersonal communications. That is to say, any two people can pick up the card pack and play it for fun.

“Bye Bye Generation Gap” Card Pack

In this section, we elaborate on the process and outcome of the card pack that we designed and entitled “Bye Bye Generation Gap.”

Why Card Pack

The selection of a card pack format is made based on two main factors: insights from previous pilot workshops, and research practicality and feasibility.

Insights from Pilot Workshops

In 2019, the lead author designed and carried out intergenerational workshops targeted at grandparent-grandchild pairs as pilot research activities. The primary inquiry behind the design of the pilot workshops was open-ended and could be summarized as “What would happen if grandparents and grandchildren are brought together to engage in creative tasks?”

In total, the lead author conducted four pilot workshops. In July 2019, two identical storytelling workshops, “Small Toys, Big Adventures”, were offered at the Being Art Museum (Shanghai) in relation to the special exhibition on childhood toys at the museum. 11 family groups attended the first storytelling workshop and five family groups (two were grandparent-grandchild pairs) attended the second storytelling workshop. In August 2019, the lead author facilitated two identical collage workshops at two different community centers. Each workshop had seven family groups (in the second workshop, six were grandparent-grandchild pairs). The lead author kicked off both workshops with ice-breaking activities, followed by inviting the participating pairs to work together on a major creative task. In the storytelling workshop, each pair was guided to create a story to transform one or more toy exhibits into story characters based on The Hero’s Journey story structure¹). In the collage workshops, each pair used old magazines to create an A3 collage piece on the theme “Sweet Home in Ten Years’ Time.”

Based on the lead author’s observations and reflections, the following insights were drawn:

(1) Event Planning and Implementation

It was essential to establish rapport with a site collaborator who could help with recruitment, communication with the participants, and resources at the site (e.g., projectors, tables, and exhibition);

Parents were more interested in and excited about this type of event. Although it was stated clearly that the workshop was meant for grandparent-grandchild pairs, some parents neglected the notice and showed up at the event (it was hard to turn them down, so they were also welcomed to the event);

¹ “The Hero’s Journey” is based on Joseph Campbell’s theory on the common narrative structure in stories as elaborated in his book *The Hero with a Thousand Faces* where he analyzed the fundamental structures in world myths. This type of generic storyline was later simplified by Christopher Vogler in his *The Writer’s Journey: Mythical Structures* as twelve steps: The Ordinary World–The Call to Adventure–Refusal of the Call–Meeting with the Mentor–Crossing the First Threshold–Tests, Allies, and Enemies–Approach to the Innermost Cave–The Ordeal–Reward–The Road Back–The Resurrection–Return with the Elixir (<https://medium.com/@RumBlues/the-heros-journey-joseph-campbell-s-vision-of-the-hero-s-path-707d1ca03be9>); https://en.wikipedia.org/wiki/The_Writer%27s_Journey:_Mythic_Structure_for_Writers)

It was extremely challenging for the lead author to manage multiple tasks, including facilitating the workshop, conducting onsite observation, and distributing surveys.

(2) Content Design

The type of activities was crucial when it came to engaging both generations. Children were more easily drawn to open-ended activities, whereas grandparents expressed more interest in topics and events they were more familiar with (e.g., cooking, Chinese opera, and handcrafts);

Establishing rapport with participants in one-off workshops proved challenging, and the intergenerational dynamics varied significantly across different families. It was tough to make any generalizable conclusions given the wide range of participant make-ups among the participating families. For instance, some grandparents were younger and still employed, while others had retired; some were local Shanghainese, and some had temporarily relocated to the city to care for their grandchildren; and levels of engagement varied from active participation to simply observing their grandchildren;

Space played a key role in workshop facilitation. Participants might feel somewhat distant from museums while they were more at ease at community centers.

(3) Workshop Observation and Documentation

As the solo researcher and workshop leader, the lead author found it difficult to make close-up observations while leading the workshops. The execution of an exit survey also proved hard. Due to the attention span of the two generations, participants were eager to leave right after the workshop. Surveying elderly participants also proved to be challenging, as most of them preferred audio surveys. As a result, some of the surveys were rushed through. The response rate and the quality of the survey answers did not provide sufficiently valuable information.

What worked out well was the documentation of the outcome of participants' creative work. For both workshops, participants could take their creative work with them (a story outline combined with doodles and texts or a piece of collage work on an A3 card). At the same time, the lead author could take photos of these pieces for documentation as evidence of the learning outcomes of the workshops.

In a nutshell, these one-off workshops helped the lead author to catch a glimpse of the possible interactions between the two generations in the same household by engaging them in a series of creative and collaborative tasks. However, organizing and running these workshops consumed significant time and energy, and participation depended heavily on time and location.

Research Practicality and Feasibility

When designing the card pack, the pandemic situation in China and the corresponding quarantine and travel policies posed huge challenges to organizing in-person activities. Considering the populations that we hoped to engage, we decided to design a card pack so we could print and distribute them to people. It would also be easy to share the digital version so that more people could apply this resource in the future for personal use or research purposes.

The format of a card pack has many advantages. In ideal situations, anyone interested in using the card pack can play with the pack during their selected time periods in the location that works best for them. That is to say, one can engage with the card pack without the constraint of time and transportation.

In our case, the card pack can be a stimulant used multiple times in different contexts (for example, a child can use the learning pack with his or her maternal and paternal grandparents, or interact with a neighbor or relative).

Meanwhile, we do acknowledge that it is hard to capture users' real-time interactions to track how the design works. Our reflections and discussions shared here mainly rely on user feedback conversations.

Design Process and Reflections

Design Process

With little empirical research to draw on in the Chinese context, our design team (including the lead author, the second author, and a visual designer) started the design adventure by relying on our own observations, prior experiences, and brainstorming sessions within the team. Each of us was engaged in designing learning experiences and resources in other contexts as our professional experiences (e.g., facilitating and leading design thinking workshops; designing and hosting family learning workshops in museum settings and other informal learning contexts; leading learning workshops to train volunteer teams in curricular design).

The team met weekly (and sometimes biweekly) to share initial ideas and discuss the content of the card pack. We collected and shared existing cardboard games, museum learning packs, and relevant ice-breaking games in educational settings.

Acknowledging that the absence of a facilitator demands more careful considerations of the user-friendliness of the card pack, we wanted to make sure we incorporate the following four main principles and features in our design:

(1) We aim to diversify the game's modalities and types of interactions to reduce cognitive barriers. We settled on three formats of engagement and interactions: verbal engagement, hands-on activities, and spatial engagement. For example, oral discussions based on discussion prompts (e.g., what would happen if you were teleported to the year 2050) can be counted as verbal engagement. Creating a

wearable device using recycled materials involves both hands-on activities and spatial engagement (as one needs to make physical movements, collect materials, and try on the final “device”).

(2) We want to design more general activities instead of topic or theme-based activities with the hope that anyone can pick the card deck and learn more about each other without any prior knowledge or skill sets in a specific area. Therefore, the specific activities are mainly centered around everyday life.

(3) All the activities in the card pack requested interaction between at least two players. For some activities, we introduced some competitiveness to make it fun and hopefully can raise players’ motivation. For example, we created a pack of “Winners’ treats” which winners of certain activities can draw from and ask the other players to perform some small tasks (e.g., sing a song and give the winner a massage for five minutes).

(4) In regard to our targeted group of players, we thought about other details to help enhance their experiences. We are aware that the activity format itself could accommodate any two players or pairs of players. It was estimated that completing the full game pack takes about an hour. In addition to the vibrant color and large fonts, other specific designs regarding the targeted group include the size of the card pack (we created 10 cm *10 cm card decks so they fit one’s hand more easily). We color-coded three main types of cards, with icons to indicate how challenging the task might be (with three different levels). We also included other supplementary stationery (children-friendly scissors, glue sticks, magnifying glasses) so that the players have some resources ready when they engage in the activities.

In summary, the card pack combines quick ice-breaking exercises and more demanding tasks such as collage and design making. It is meant to be fun and participants can follow the orders by moving from simple to more challenging modes.

We named the card pack “Bye Bye Generation Gap” so that it is easily relatable to people.

User Feedback on the Card Pack

We printed out the card pack and positioned it as the beta version. We then recruited potential users to play with the card pack and share their feedback. As mentioned earlier, we aimed to target skipped generation pairs. We referred to the general consensus on the definition of generation (with emphasis on its social connotations) as “a cohort of people born within a similar span of time (15 years at the upper end) who share a comparable age and life stage and who were shaped by a particular span of time (events, trends and developments)” (McCrinkle & Wolfinger, 2010). Meanwhile, we did not want to impose strict criteria simply based on a specific age range, as we were also interested in finding out who (what age group) would take an interest in the card pack. As a result, in our call for participation, we stated that we

were looking for pairs of players consisting of children/adolescents between the ages of eight and twenty, and their grandparents (or friends and relatives from their grandparents' generation).

Finding participants proved to be more challenging than we expected. We posted the recruitment flyer on our own social media to look for acquaintances or friends of friends. Some people (mainly young children's parents) reached out to us, though later they mentioned that their children were not living with grandparents and might not have time to complete these activities due to other priorities in the summer holidays.

In the end, we sent out three packs and two groups of users joined our user feedback conversations (the prompts are shared in the Appendices). We called it "conversation" rather than "interview" as we wanted to give more voice and freedom to users to share their general feelings and experiences, and our main goal was to learn about how users felt about the card pack with no intention to conduct a formal analysis. Both conversations took place via online video calls and after gaining permission for audio recording, we recorded the conversations and downloaded the transcript generated by the software¹.

Since we were only able to gain some user feedback from two user groups, we could only highlight some of the key points during the user interviews with no intention to make generalizable conclusions. That being said, the two groups of participants happened to be drastically different. The first group was a high school senior student (around 18 years old) and her maternal grandpa, who was over 70 years old (under the pseudonym of Silvia and Mr X), and the second group was a young girl of eight years old (under the pseudonym of Sunny) and her maternal grandparents. Both Silvia and Mr X joined our video call. Mr X could not hear too well, so Silvia helped to repeat and paraphrase some of the interview questions for Mr. X and helped us to translate some of his answers. In Sunny's case, the family only agreed to join the call via audio and Sunny's mum was the main communicator as she was deeply involved in the testing process (the grandparents did not participate in the user interview). Sunny's mum helped to describe and recall what happened and shared how they felt about the card pack.

We developed the following table to summarize participant feedback, focusing on interaction dynamics, engagement with the card pack, and specific suggestions for improvement:

¹ We used Tencent Meeting which is a widely applied and acknowledged platform for video calls in mainland China.

	Group 1	Group 2
Who Participated in the Card Pack Activities	Silvia: 18 years old, just graduated from high school); Silvia's maternal grandpa, Mr. X, over 70 years old	Sunny (8 years old); Sunny's maternal grandparents, accompanied by her parents.
Background	<p>Silvia lives with her maternal grandparents during summer holidays (during term time she would meet them frequently on weekends for meal gatherings)</p> <p>They completed most of the activities in about 1.5 hours at Silvia's grandparents' home</p>	<p>Sunny lives with her parents and her maternal and paternal grandparents take turns to live with them (each side stays for approximately two weeks in a month.</p> <p>They completed some of the activities and it took them 40 minutes at Sunny's home</p>
Why they were interested in the card pack	Silvia was interested in sociology and she had a deep emotional bond with her maternal grandpa though she also noticed some tension during their daily interactions and communications.	Sunny's mum is passionate about youth innovation and thought the card pack would be fun for her daughter.
Interaction Setting	Video call during which Silvia was the main communicator	Audio on; Sunny's mum was the main communicator and Sunny's maternal grandparents were absent (we could hear Sunny's voice in the background)
Roles each player took and interaction pattern	Silvia led the whole process and Mr. X was following her lead. Mr. X found some of the tasks challenging as he had limited level of hand	Sunny's mum acted as the 'host' and 'communicator' to help facilitate the whole process. She found it a little too 'interventional' as she

	dexterity. He was willing to try his best to support whatever Silvia was interested in doing.	thought intergenerational interactions usually took place in naturalistic settings (e.g. during family trips).
Key Findings	- Mostly enjoyed drawing tasks and found them relaxing; - Noted the need for better task organization and clearer instructions.	- Appreciated the engaging nature of drawing and guessing games; - Pointed out the overwhelming unboxing experience for younger and older users.
Suggestions for Improvement	- Adding user-friendly features like page numbers and clearer task-to-answer sheet connections; - Add more varied and accessible tasks to accommodate physical limitations (e.g., hand dexterity).	- A more intuitive card organization and an improved unboxing experience; - More age-differentiated tasks within the pack.

Table 1. User Interview Summary

The above feedback was extremely helpful. While we knew that the beta version was not ideal, as it was meant to be our first attempt to test the card pack design. Some design details could be easily fixed. For example, if we could have more time and funding support, we could develop a richer collection of interactive games and tasks so that users could choose those that they found interesting. We could also design a road map so that the overall flow and diverging paths are clearly mapped out. Additionally, the accessories resource pack could be better packaged and the notion of environmentally friendly could be better communicated.

Apart from the details, we noticed that one of the biggest challenges was to acknowledge cognitive differences and diversity as we adopted a more inclusive approach to intergenerational learning design. On top of that, we might also need to be aware that parents were naturally interested in these activities, so we could either intentionally assign roles to parents for some tasks or design certain components that could accommodate the participation of three generations. In order to engage our users in more naturalistic settings, we could also develop tasks that could involve scenario-based interactions (for example, exercises and small games for people to engage with during meal gatherings or during family trips).

Discussion

Design and Practices around Intergenerational Learning

As mentioned earlier, intergenerational practices and programs are rare and sporadic in mainland China, and are in most cases carried out in the format of one-off activities. Additionally, these events are often driven by goals of promoting traditional merits or contributing to elderly care, with little awareness of the value of mutual learning between older and younger generations. When we were creating and testing the card pack, we found it hard to set clear goals and pin down our research design. How do we start? How shall we set our goals? What age groups shall we start to engage? What format shall we use? As researchers, how shall we approach other institutions and start to make collaborations?

These questions persist as we reflect on our initial attempt and try to think about the next steps now that we have gained some inspiration from our design practices. As the pandemic situation improves, we can enjoy more freedom in terms of designing intergenerational activities that involve in-person interactions. Therefore, before we continue to discuss the implications of our card pack in the Chinese context, we will present in this section our review of empirical studies published in the *Journal of Intergenerational Relationships* “as the only peer-reviewed journal focusing on the intergenerational field integrating practical, theoretical, empirical, familial, and policy perspectives¹.” As the lead author often consulted articles published in this journal and came across practices in different cultural contexts, she assumes that an overview of empirical studies can present a snapshot of the past and emerging efforts in designing intergenerational practices, offering valuable insights for future design.

To start with, we went through all the articles published in the journal in the past fifteen years (from 2008 to 2022) and we selected and read all empirical studies for further review. By empirical studies, we mean that the article needs to cover descriptions and elaborations on real events, activities, or programs rather than mere literature review or theoretical discussions. When we read the articles more closely, we retained the articles written in a scholarly style and those that included explicit or implicit goals of promoting intergenerational communication, interaction, or integration. We excluded articles in short essay formats without clear information on project goals, methods and results (often published under “From The Field: Program Profiles” in the journal). Meanwhile, we decided not to include cases that touch upon professional training (for example, training of young professionals in long-term care settings, or an intergenerational service-learning program embedded in a major course for college students in therapeutic recreation, or an intergenerational culinary medicine elective course that brought senior medical students and older people from a local senior center together for cooking practices) as our goal is to map out intergenerational learning that can be applied in everyday settings at community and

¹ <https://www.tandfonline.com/action/journalInformation?show=aimsScope&journalCode=wjir20>

social level. We also deleted articles that only touched upon intergenerational or multigenerational topics or contexts but did not involve direct communications or interactions between younger and older generations (for example, we deleted the following four studies: one study focused on the influence of an intergenerational, artistic installation on younger adults’ attitudes toward aging and older adults; one study on college students’ perceptions of older adult auditors who sit in their classes; one action research aiming to children’s playing spaces in neighborhoods that include research practices involving different generations; and one study that analyzed intergenerational interaction as a theme in older people’s letter writing during lockdowns).

Location/Cultural Contexts	Number of Articles
USA	23
Canada	6
Japan	3
Australia	3
Singapore	2
Portugal	2
UK	1
Spain	1
Ireland	1
Finland	1
Spain, Poland, Turkey	1
South Korea	1
Israel	1

Table 2. Selected Empirical Studies between 2008-2022 published in the Journal of Intergenerational Relationships by Countries

We then extracted and summarized the following key information: the make-up of participants or participant groups (mainly age group and scale); organizer and/or collaborators; country and region where the event or program took place as well as

types of venue (e.g., school, community center, outdoor spaces); research design (including goals, event format, thematic focuses, and time span); and outcomes.

In total, we found 46 articles that meet the criteria (two articles on Canada are about the same project). We can identify at least one article each year, and we noticed a surge of published empirical articles in 2018 and 2022 (in both years, eight articles can be found). A majority of the articles feature North American contexts (23 articles on USA, six articles on Canada), and the rest of the articles look into Asian contexts (three on Japan, two articles on Singapore, one on South Korea), European contexts (one on UK, one on Ireland, one on Spain, two on Portugal, one on Finland, and one on Spain, Poland and Turkey), Australian contexts (3 articles), and Israeli context (1 article). To some degree, this implies the level of scholarly investment in the intergenerational field. However, we need to bear in mind that the journal only publishes manuscripts in English and this might be a hindrance to the dissemination of some research projects in non-English speaking countries.

The intergenerational practices in these published articles mostly took place in three types of venues: community spaces (including community centers, churches, volunteer organizations), senior centers, and school or university spaces. At the younger side, we noticed two main age groups: one is younger children aged from 4-12, including pre-school children and primary school children (19 articles feature this age group); and the other is young adults, mostly university or college students (we found 17 articles in this category). The rest of the articles touched upon teenagers (middle school and high school students) (six articles focus on teenagers and four articles involve young children and teenagers or college students). The older adults are mostly over the age of 60 (two studies involved people between 55-60, and the oldest age mentioned is 102), and four articles explicitly mentioned that the older participants were people with dementia. Since most articles are contributed by university researchers, it is not surprising that 26 articles involve university organizers, and other types of organizers (not all articles specifically mentioned organizers so we did not do a specific count) include nursing home, primary school, high school, local community center/association, nonprofit institutions, senior center or long-term care center, and church.

Overall, these articles showcased a diverse range of research designs. The scale of the studies ranged from small groups of around 10 participants to large scale programs that involved 306 participants. When it comes to the time span, the shortest ones are one-off activities that last from half-day (an afternoon) to weekly one-hour sessions that took place during a two-to three-week period. Since many of the programs were connected with university courses or were designed to create immersive intergenerational experiences, most projects involved longer contact time with high frequency (many programs brought older and younger participants together for weekly or biweekly events that last for several weeks or even several months).

In line with various research scales and time span, the selected empirical studies employ different methods, including qualitative approaches (participatory action research, interview, focus group, photography and video recording, journal entries), quantitative methods (scale-based questionnaires and surveys), and mixed methods research.

We found that the designed activities covered a wide range of format and themes, which can roughly be divided into the following categories: 1) leisure and entertainment (e.g. playing toys, wooden block building, games, daily conversations); 2) language-related formats (e.g. second language learning, oral history, reading and discussion); 3) topics related life (e.g. life sharing panel, life mentoring); 4) art and performing arts (e.g. theatre, music, singing, collaborative art-making); 5) STEM related (e.g. computer, coding); 6) physical activities (e.g. exercises, Tai Chi, Pickleball Tournament), and 7) service learning (embedded in high school or university courses).

Considering our own design decision processes and our vision of future research in this field, we tagged all the selected articles into three categories to map out how any of these empirical studies involved facilitation in their research process. We categorized the studies into three groups: those that involve intergenerational interactions in naturalistic settings (7 articles); those that involve a certain level of facilitation (33 articles); and those that include intervention or experiment (6 articles).

While the above dimensions all indicated high diversity in existing empirical studies (in terms of age groups, project design and scale, location, event format, time span and research methods), we noticed similar outcomes across all the selected studies. It is not surprising that at a broad level, almost all articles mentioned improvement of intergenerational relationship or mutual understanding. These practices also changed or transformed children or young people's stereotypical attitude or challenged their assumptions towards older adults, and brought about better physical and/or mental health and increased social skills and even generativity among older adults as well as psychological development among children and young people.

We could also notice the challenge brought about by designing and implementing these programs, which in most cases require great resources and collaboration between different organizations. Evaluation of the activities and sustainable funding sources might also prove to be challenging. Other researchers have noted that "...evidence of the effectiveness of these programs is limited. Many of them present only anecdotal evidence of impact, limited use of theory and standardized measures, assessment of only one generation of participants, and an absence of longitudinal evaluations" (Jarrott, 2011, p. 2).

Discussion and Conclusion

Our exploratory design process for the intergenerational learning card pack, though not initially hypothesis-driven, has led to significant insights through user feedback and a review of empirical studies published in the *Journal of Intergenerational Relationships*. From these insights, we have synthesized several key conclusions and lessons learned that guide future directions and enhancements.

Participant Inclusion and Recruitment

Our findings highlight the need for more inclusive design that accommodates diverse cognitive abilities and preferences across generations. We propose a hybrid model that integrates "one size fits all" content with customizable options, enabling participants to engage through various formats beyond traditional textual and visual materials, such as videos and interactive digital platforms. Collaborating with diverse organizations—ranging from educational institutions to cultural and online communities—will extend our reach and enrich our participant base, making the initiatives more scalable and adaptable to different contexts.

Content Design and Interaction

We aim to merge self-guided learning resources with on-site facilitation to directly observe and enhance interactions between generations. Introducing gamified elements and opportunities for sharing personal stories and experiences could further enrich these interactions, fostering deeper connections and learning.

Roles and Contributions of Participants

Reflecting on the diverse roles—researchers, facilitators, family members, and volunteers—involved in intergenerational practices, we recognize the need for a deeper investigation into how these roles influence project outcomes. Future research will focus on how different stakeholders contribute to and are impacted by intergenerational programs, emphasizing the dynamics and outcomes of these engagements.

Evaluation and Methodology

Acknowledging the multidisciplinary nature of intergenerational practices, our evaluative strategies should be adaptable and context-specific rather than strictly hierarchical. The flexibility in evaluation allows for a more nuanced understanding of impacts and effectiveness. Moreover, planning for systematic documentation and curation of project processes from early stages will enhance our contributions to the scholarly community and intergenerational practice field.

Critical Evaluation and Scalability

While our project has shown potential in facilitating intergenerational communication, the real impact and scalability require a critical look. The pilot

implementation, though limited in scale, suggests that while participants are generally receptive, the depth of impact varies. To address scalability, future iterations will need to consider economic, cultural, and logistical factors to ensure that the card pack can be adapted and utilized effectively in diverse settings.

Long-term Vision and Collaboration

As we continue to champion the "design as research" approach, the iterative and action-oriented nature of our work is particularly suited to the evolving landscape of intergenerational practices in China. Building sustainable partnerships with a broader array of stakeholders will be crucial to maintaining momentum and ensuring the long-term success of these initiatives.

In conclusion, this project not only sheds light on the practicalities of designing intergenerational learning tools but also underscores the broader implications for research and practice in this field. By critically assessing our approach and outcomes, and by planning for scalability, we pave the way for more robust and impactful intergenerational engagements.

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Disclosure Statement

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