Creating an intergenerational university hub: engaging older and younger users in the shaping of space and place

Brenda Vrkljana,b, Amanda Whalenb, Tara Kajaksa,b, Shaarujaa Nadarajahb, P.J. Whiteb,c, Laura Harringtonb, and Parminder Rainab,d

aSchool of Rehabilitation Science, McMaster University, Hamilton, ON, Canada; bMcMaster Institute for Research on Aging, McMaster University; cDesignCORE Research Centre, Institute of Technology - Carlow, Carlow, Ireland; dDepartment of Health Research Methods, Evidence, and Impact, McMaster University, Hamilton, ON, Canada

ABSTRACT

Intergenerational initiatives in post-secondary settings have demonstrated health and social benefits. However, there is a lack of detail with regard to the process by which such initiatives are conceptualized and the role of older and younger users in their development. Guided by the principles of an Age-Friendly University (AFU) alongside elements from a 'Design Thinking' approach, this project outlines the process undertaken to design a new intergenerational space to promote intergenerational connectivity. An online student survey (n = 504; 72.2% female) and focus groups were conducted with older adults (n = 22; 12 females; aged 70–95), which found similar themes across age groups with respect to: 1) past intergenerational experiences; 2) perceived benefits/challenges of accessing the space, and; 3) activity suggestions. Using these findings, alongside direct stakeholder input, Occupational Therapy students developed programming and design suggestions for the space in question aimed at strengthening interactions across age and ability. Results from this process indicate consulting with older and younger users can circumvent potential challenges and inform the design of campus-based initiatives that can promote intergenerational exchange.

An unprecedented trend is occurring with regard to the aging of the world's population where, in many places, the old are beginning to outnumber the young. In Canada, there are now more individuals aged 65 years and older than those aged 14 years and younger (Statistics Canada, 2015). By 2030, there will be 78 million Americans over the age of 65 compared to 76.4 million under the age of 18 (He, Goodkind, & Kowal, 2016). With this demographic shift already underway in most countries, the World Health Organization (WHO, 2017) recently highlighted the need for programs and activities aimed at bridging these generations.

The benefits of intergenerational activities are well-documented and far-ranging. For older adults, these activities been found to enhance self-esteem and confidence, (Anderson et al., 2017), as well as physical mobility (Powers, Gray, & Garver, 2013) and mental health (Murayama et al., 2015). Older adults also feel more socially connected and engaged in their community (Sabir et al., 2009). For younger participants, intergenerational programs have been shown to improve social skills (Powers et al., 2013) and challenge prevailing stereotypes about what it means to grow old (Dauenhauer, Steitz, & Cochran, 2016; Harris & Caporella, 2014; Powers et al., 2013; Sánchez & Kaplan, 2014; Teater, 2016). Access to such programming is seen as particularly critical in today's society amid growing concerns of an epidemic of loneliness that been shown to negatively affect health and function in both younger and older cohorts (Hakulinen et al., 2018). In response to this concern, the United Kingdom has taken the unprecedented step of appointing a Minister of Loneliness who, for the first time, will address issues specific to social isolation (Dakers, 2018). A meta-analysis of over 70 studies found that objective and subjective measures of social isolation and loneliness are associated with early mortality risk but, contrary to popular belief, those 64 years and younger are particularly vulnerable when deficits in social networks arise (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015). In fact, results from a recent Ipsos poll from the United States (n = 20,096, aged 18+) suggested those aged 18 to 22 have the highest rates of loneliness (Cigna, 2018) and that these rates peak again in later life (Holt-Lunstad et al., 2015). Given these concerns, there is an important opportunity to consider innovative ways to bring these two seemingly disparate populations together.

Evidence from a review of intergenerational programs suggests that post-secondary educational initiatives can play a critical role in fostering a sense of social connectivity and community between these age groups (Bishop & Moxley, 2012), and many initiatives have been undertaken that bring older adults and students together in higher education settings. Our literature search in advance of the present study confirmed the findings of Bishop and Moxley (2012) who noted a spectrum when it comes to the level of organization of such initiatives (i.e., formal-informal). Some programs integrate intergenerational activities as part of compulsory post-secondary coursework. For instance, Powers et al. (2013) developed a formal service learning component for kinesiology students who conducted fitness tests on older adults living in a retirement residence. Results indicated students not only gained hands-on skills relevant to their professional field, but their cross-generational interactions had a significant and positive impact on their attitudes about aging, particularly among those with limited exposure to older adults prior to this learning activity. Similar benefits have been reported among trainees in medical (Gonzales, Morrow-Howell, & Gilbert, 2010; Hinners & Potter, 2006) and other health fields (Rubin, Gendron, & Peron, 2016).

On the other end of the spectrum are those intergenerational activities considered less formal or more extra-curricular in nature, where these age groups are united through a shared interest, such as singing in an intergenerational choir (Anderson et al., 2017) or collaborating on a theatre production (Harris & Caporella, 2014). While Dauenhauer et al. (2016) acknowledged the benefits of such activities on young and old alike, they emphasized that "institutions of higher learning need to develop, promote, and expand lifelong opportunities within a multigenerational context from potential constituents – older adults" (p.484).

To date, much research has focused on tracking the respective impact of intergenerational activities on participants. Pre- and post-surveys (e.g., Powers et al., 2013), interviews (e.g., Anderson et al., 2017), and focus groups (Dauenhauer et al., 2016) have all demonstrated the enormous value that comes from cross-generational programs in post-secondary settings. Unfortunately, few studies provide sufficient detail with regard to the process by which such programs were initially conceptualized and, in particular, if and how older and younger users were involved in their development. Ensuring users are engaged from the outset of program planning can provide important insights with regard to their design and deployment. For example, Cook and Bailey (2013) conducted interviews with residents of a long-term care facility (n = 16; aged 56–98) to understand their views of intergenerational activities. Results demonstrated how input from prospective program users can assist with not only activity planning but also circumvent potential challenges, such as communication, sensory and mobility problems, which can be experienced by participants of all ages. Despite the insights that can be gleaned directly from users, no studies to our knowledge have gathered input concurrently from older as well as younger participants with the aim of informing intergenerational programming in post-secondary education, including the design of spaces where such activities take place.

The current study highlights the process undertaken by the McMaster University Institute for Research on Aging (MIRA) for creating a new campus space to facilitate intergenerational exchange at McMaster University in Hamilton, Ontario, CANADA. This space will be located in a new student residence currently under development. Our educational institution recently joined the Age-Friendly University (AFU) global network where the corresponding principles provide a framework to identify areas of strength and growth with respect to current and future age-friendly initiatives. In our review of these principles, we noted a gap with regard to the built environment and its role when designing such initiatives. In addition to compliance with accessibility and disability policies, it is important that AFUs consider the perspectives of age-diverse populations when developing shared, multiuse spaces, which is also congruent with recommendations from the World Health Organization's guide to Age-Friendly Cities (WHO, 2007). The purpose of this study was to understand the perspectives of both younger (universityage) and older adults when it comes to designing a learning space and corresponding activities to promote intergenerational connectivity. As such, input was sought from both university students and older adults with respect to: 1) their intergenerational experiences; 2) perceived benefits/challenges of engaging in such programs; as well as 3) activity suggestions. Hence, our project was guided, in part, by a user-centred design approach, specifically 'Design Thinking'(Plattner, Meinel, & Leifer, 2014). Design Thinking has been described as both a thought andbehavior process used primarily to creatively and holistically problem-solve complex issues in a user-centred manner (White, 2012). Using a series of iterative stages (empathize, define, ideate, prototype, test), the process for Design Thinking begins with

empathy-building where the insights of the user are explicitly sought; a point that "…too often tends to be forgotten or ignored" (Plattner et al., 2014, p. vi). The methods associated with this process evolved from those employed in product design and architecture to focus on more complex issues or "wicked problems" (Buchanan, 1992, p. 15) extending from politics (Brown, 2009) to examining health-related phenomenon (IDEO, 2009). Congruent with this user-centred approach, the initial phase of the current project involved understanding the 'user perspective' by surveying students concurrent with conducting focus groups with older adults. In the project's final phase, small groups of Master of Occupational Therapy (OT) students analyzed results from both the survey and focus groups to generate recommendations for intended programming and the physical design of the intergenerational space. Results from this project will be discussed with reference to both AFU principles as well as the 'Design Thinking' process, which can offer guidance about the development and delivery of intergenerational initiatives within institutional settings.

Method

Participants

Ethics approval for this project was obtained from the McMaster University Integrated Review Ethics Board. For the online survey, students were invited to participate using an email blast that was sent to those had lived in campus dorms during their first year of university. For the focus groups with older adults, participants needed to be aged 65 years and older and be able to contribute to the group discussion. Participants were recruited from a number of sources, including the university's retiree association, community events organized by our institute for research on aging, posters, as well as individuals who had participated in research and/or education-related initiatives at the university. Another focus group was conducted with residents at a long-term care facility located close to campus. The Occupational Therapy (OT) students were in their final year of their two year graduate program. Their assignment was part of a course focused on OT in older adulthood.

Procedures

University student survey

An online survey was distributed to students that aimed to: 1) describe the types of extracurricular activities in which they had or currently participated, and their perceptions of involving older adults in such activities; and 2) identify their interests with respect to intergenerational programming and the supports they felt were necessary to promote engagement in such programming. The research team developed the survey, as part of the 'empathize' phase of the Design Thinking approach. The questions were framed in a similar manner to those used to elicit insights from older adults in the focus groups, which allowed comparison between the students' survey responses to the ideas that emerged from the older adult focus groups so that responses could be compared accordingly. As such, the survey included a mix of close-ended (i.e., categorical responses, yes/no; 5-point Likert scale) and open-ended questions where participants elaborated on their responses. For example, participants rated their comfort level with older adults using a 5-point Likert scale (i.e., Very comfortable to Not comfortable at all), alongside an open ended question that asked them to elaborate on their respective rating. Demographic information, including age, gender, academic program and year of study, wa also provided

by each respondent.

Focus groups with older adults

The projects' research assistant initiated contact with each prospective participant for the focus groups by telephone who were then mailed directions to their respective group, which was held at the university. Participants attended group sessions based on their availability. The size of the focus groups ranged from 4 to 11 members, which is congruent with what has been cited in the literature (Kitzinger, 1995), although Morgan and Krueger (1998) indicated 6 to 8 participants as ideal. Each session lasted approximately 1.5 hours. No remuneration was provided to participants except for travel and parking, where indicated. Each older adult provided written and verbal consent to participate and be audiotaped. A structured protocol was used for each focus group, meaning the same facilitator moderated each session with the help of a research assistant who recorded participant comments. The focus group began with general, open-ended questions to participants about their experiences with interacting with university-aged students and moved to more specific queries concerning their perceptions of potential activities that could promote intergenerational connectivity as well as any barriers they foresaw in terms of their participation.

'Design thinking' exercise: occupational therapy class assignment

A class assignment was created within an 8-week course where 10 groups of five to seven OT students each produced a written report and verbal presentation. Using the information collected from the student surveys and focus groups alongside evidence gathered from relevant literature or other sources from their independent research, each group generated recommendations for activities and design features that aimed to promote intergenerational connections in post-secondary settings. At the outset of the course and as background for their assignment, the managing director of the McMaster Institute for Research on Aging (L.H.) provided an overview of the intent of intergenerational campus space and its alignment with the principles of an Age-Friendly University (AFU) (see Pstross et al., 2017). Four older adults also attended the class of which three had previously participated in the focus groups. They were available to address questions from the OT students at various time points over the 8-week course about their past interactions with younger (university-age) adults and their perceptions of accessing an intergenerational space on campus. They also provided verbal feedback on the final set of recommendations generated by each group. OT groups were also encouraged to consult directly with university students and/or any other stakeholders they deemed relevant over the course of their project.

Analysis

Surveys were analyzed using both descriptive statistics for close-ended questions specific to demographic information and comfort level with older adults. Open-ended survey responses specific to the types of experiences interacting with older adults (e.g. volunteering, personal experiences, etc.) as well as their interest and awareness in taking part in activities with older adults both on and off campus were analyzed using inductive coding to identify common themes across students (Hsieh & Shannon, 2005).
The focus groups with older adults were transcribed verbatim. Initially, these transcripts were independently analyzed by two members of the research team (A.W, B.V.) using open-coding to identify emergent themes (Hsieh & Shannon, 2005). From these

themes, a preliminary coding framework was co-developed through discussion and trialed by the same members for subsequent analysis (Kreuger & Casey, 2014). At this point, a peer not directly involved in the study reviewed the process by which the associated themes were identified (Krueger, 1998). In this case, the peer acted as an auditor to ensure the integrity of the findings and corresponding themes. A summary of findings from the surveys and focus groups were then shared with the OT student groups. Each group used these findings alongside evidence from their review of relevant literature to generate a written and verbal report that detailed their respective recommendations for intergenerational activities as well as the physical layout of the space. Following an independent review of these reports, two members of the research team met to determine key recommendations that were aligned with the intent of the intergenerational initiative.

Results

Student survey

A total of 504 students completed parts of the survey, of which the majority were female (72.2%). Most respondents were in either their second (55.6%) or third (38.7%) year of study. Key findings from the analysis are provided alongside direct quotes from their open responses.

Most students indicated they have more than three hours a week to participate in extracurricular activities

Participants were asked to estimate the amount of time they could spend on extracurricular activities per week. Most (n = 227/504; 45.0%) indicated they spend three-to-six hours per week on extracurricular activities with 16.3% and 11.9% of participants spending six-to-nine hours or greater than nine hours respectively on such activities. The types of activities listed by respondents were extensive and varied. These included organized activities, such as intramural and varsity sports, working and/or volunteering in a lab or in a retail store, as well as participating in activities that were less organized, such as hanging out with friends, watching television, and/or helping their parents and family members with household activities.

The majority of students rated their comfort level with older adults as high, which they attributed to their personal (family, friends) and volunteer experiences

On a five-point Likert scale, most students (n = 177/384; 46.1%) responded that they felt "Comfortable" with older adults, while 28.4% indicated that they were "Very Comfortable" with older adults. 19.0% and 6.0% of participants reported that they were either "Moderately Comfortable" or "Somewhat Comfortable" with older adults, respectively. Most students attributed their high level of comfort with this population to "personal experiences" (n = 364/384; 94.8%). As illustrated in Figure 1, volunteer and academic experiences also accounted for different levels of comfort with older adults.
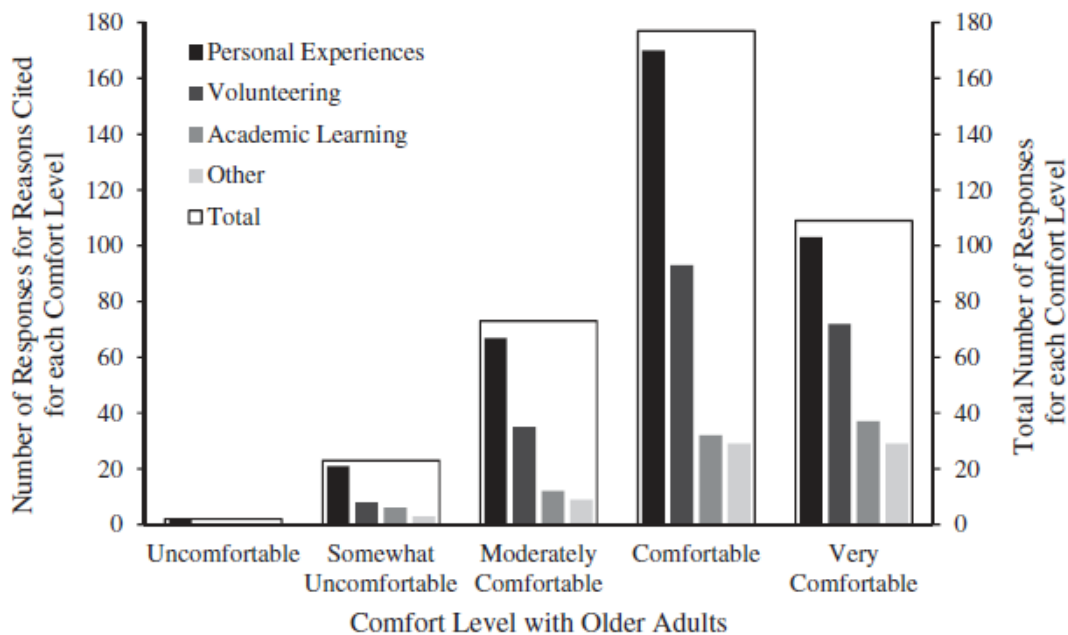
Figure 1. Student ratings of their level of comfort with older adults, and reasons (i.e. personal and volunteer experiences, academic learning, and other) attributed to each level.

Most survey respondents indicated they were interested in participating in activities with older adults, but most were unaware of such opportunities on campus

When asked if they currently participated in any activities on campus with older adults, the majority of respondents to this question indicated they did not (n = 306/360; 85.0%), which most attributed to their lack of awareness of such opportunities (87%; n = 260/299). However, almost 69.7% (n = 212/304) indicated they would be interested in participating in these types of activities if they were offered. For those who were aware of intergenerational activities but did not participate, some identified challenges when they tried to get involved, as one student stated: "I did try to participate but unfortunately the positions to volunteer filled up quickly." Academics and other scheduled activities made it challenging for some to be involved in volunteer-based programs: "There is not enough time between sport and school to volunteer." Those who wanted to participate saw these activities as a way to further their level of knowledge about aging, as well as advance skills specific to a chosen career path, such as research or health-related fields.

The students had many suggestions for intergenerational activities

Based on the survey responses, the identified activities of interest were diverse ranging from music, art, dinner, coffee, classes, board games and movies: "Honestly, anything such as board games, getting coffee, watching a movie. Interacting with [older] adults is similar to hanging out with those in my age group." Across all of these activities, the importance of listening and speaking with older adults was emphasized: "I would like to have conversations about their lives and opinions on current events in the world. I'd also be interested in what they've done as careers." Another respondent summarized that ensuring the space was designed to make such interactions possible was the most important: "Everyone [needs to] feel at home. Everyone should feel respected and safe."

Focus group feedback from older adults

A total of 22 older adults (10 male, 12 female) ranging in age from 70–95 participated in four focus groups. When asked to rate their comfort level with interacting with 'university-aged youth' on a scale of one (not being comfortable at all) to ten (very comfortable, the mean response was 8.7. Only one participant responded with a score lower than 7 (i.e., 5/10). From the focus groups, key themes that emerged highlighted their perceptions of this younger

 "Enthusiastic. Engaged. Energy. Fun. Alive. Bright. Refreshing. Intelligent. Quick."

These were some of the terms used by older participants when describing their interactions with university-aged students. Their experiences with young people made them feel hopeful about the future. However, a few of the older adults expressed concern about how they might be perceived by the students during such interactions. There was a fear that they would make a negative impression or "be a bit boring to them." They suggested having conversation starters or "talking points that would break the ice." With regard to the design of the space, they perceived the set-up of the physical environment as critical to making individuals feel as welcome as possible from their initial point of entry through to engagement in shared programming and activities.

"It's all about the conversation"

Many activities were raised as a potential means of bringing the generations together thereby making deeper connections and social interactions possible. While physical exercise, such as hiking and walking, was of interest, some of the older participants expressed concern about their ability to participate due to their current health status. Others saw the potential of the hub to catalyze connections to classes and courses already in place on campus. Many were excited about the prospect of learning more about different cultures: "I have a real interest in other people, either their thoughts or beliefs around culture." Across all focus groups, the importance of conversation and getting to know the students was emphasized, as one participant expressed: "I think with young people you need to do a lot of listening because you are learning too, their interests, and what they are open to."

During one of the focus groups, an older participant shared a recent New York Times article that discussed the high rate of loneliness and isolation experienced by students in post-secondary institutions (Bruni, 2017). Others also expressed concern about the pressure on young people today and the negative impact on their mental health: "they [the students] get into a situation like university and the sense of not being able to connect with anybody is overwhelming…They have nobody to talk to." Hence, the perceived strength of the intergenerational space was the interactions, which would extend beyond one's usual peer group: "the students and older adults will have people to talk to that are not from their generation. I think that's immensely important."

"How will I know where to go and what to do?"

The intended benefits of the intergenerational programming were considered in light of potential challenges identified among focus group participants that might affect their engagement. Many indicated the need for transportation to and from the proposed site

and were concerned about having access to parking for their personal vehicles. At the same time, they also recognized this need could change with increasing availability of ridesharing

services or other forms of local public transit (e.g., light rail) under development. Participants with mobility impairments emphasized the importance of having well-lit, safe walking routes during the day and evening. Clear signage was identified as key. Many recognized coming to campus could be perceived as "intimidating" for some older adults, particularly those who had never gone to a university. As such, they emphasized that intergenerational programs should be set-up in a way that makes everyone feel as comfortable as possible regardless of age or ability.

Design thinking exercise: occupational therapy student recommendations

Based on the reports generated by the OT students, three main recommendations were identified that reflect the close relationships between program delivery and design features aimed at encouraging intergenerational connectivity. Specific activities and other suggestions for designing the space in question are outlined.

'A warm and welcoming atmosphere' [design features: ease of navigation to/from/within/around the space; entryway; clear signage]

Across all student reports, the importance of a positive "first impression" among both younger and older users was emphasized. Ease of navigation in and around the designated space and, in particular, the entryway, is critical, as one group described: "entering the physical environment should be warm, welcoming, and accessible." Many of their reports cited the principles of universal design (e.g., Centre for Excellence in Universal Design, 2017), which were considered fundamental to ensure corresponding features were designed to accommodate a range of users in terms of their mobility, visual and auditory needs. Having a formal reception area where volunteers or others can greet individuals upon entering the space alongside clear signage was suggested. Being able to see other areas from the entryway was considered optimal so that users can intuitively know where to go to participate in their desired activity. Ensuring adequate space for removing and/or changing outerwear as well as storing personal items (e.g., coats, mobility aids) was also identified as important. Plants and other greenery, both inside and outside, were suggested as ways to help users feel welcome, as they entered the space to initiate conversations and form connections with others.

'A shared space for conversation and forming connections across generations' [design features: adequate seating; acoustics; lighting]

The reports by the OT students highlighted the critical role of the physical environment with regard to enabling "intergenerational dialogue." This dialogue was seen as fundamental to building a sense of community across generations within the space. One of the student groups conceptualized the notion of a "Conversation Café" where users could participate in both structured and unstructured discussions. Topics could be predetermined and posted to attract like-minded individuals to particular events that would encourage cross-generational connectivity. Ice breaker activities and "facilitated dialogues" were also suggested as a means to overcome potential difficulties of initiating conversations. Ensuring that the space is physically designed to enable such interactions was recommended, particularly with regard to auditory accessibility so that the exchange of information is optimized in one-on-one, small, as well as large group situations.

'An accessible environment that is both flexible and fun' [design features: moveable chairs and tables; configurable spaces to enable diverse programming options]

As noted by the OT students, a range of activities were suggested by both younger and older users of the intended space, including learning to use technology, cooking, sharing meals, indoor/outdoor gardening, board games, music, classes or lectures, and physical activities. It was
also recognized that space should be allocated for administration, storage, program planning, and research. As illustrated in Figure 2 a student group combined the necessary design features
into four main elements: 1) intergenerational dialogue (i.e., facilitated conversations within a café-style space); 2) operational supports (i.e., administrative offices and staffing); 3) knowledge and skills exchange (i.e., mentorship and reverse mentorship activities); and; 4) physical activity (i.e., space for activities, such as yoga, tai-chi, as well as open times for other programming).
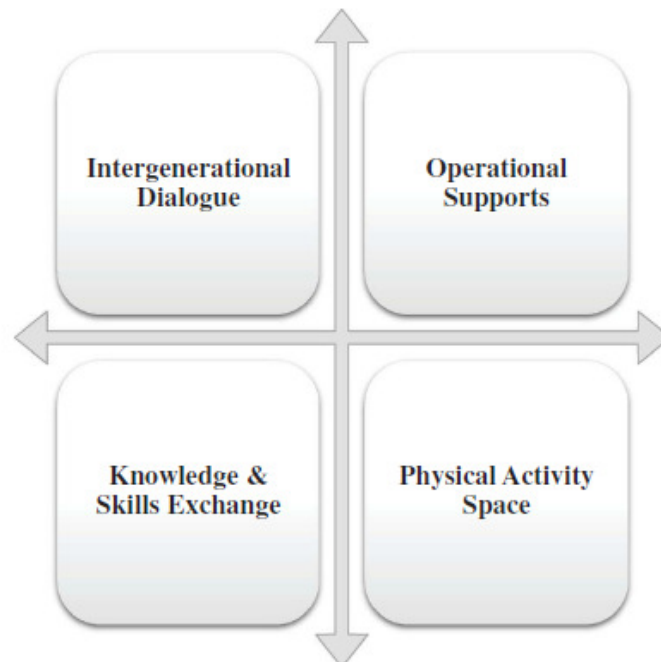

Figure 2. A group of OT students organized the essential needs with respect to programming and design of the intergenerational space using a continuum they created based on results from the survey and focus groups. (With permission from OT student group: Tanya Gabriele, Rosemary Mckee, Mitch Bewick, Dana Stanbrook, Maimuna Mannan).

Another group used artistic renderings to generate the 'look and feel' of the potential space (see Figures 3 and 4). The students emphasized that the intergenerational space must be designed in a way that allows for flexibility, rearrangement, and segmentation but also evokes a sense of "at-homeness" meaning users of all ages and abilities feel comfortable to participate in the shared programming and be with others in this setting.

Discussion

This multiphase project details a step-by-step process undertaken to explore the perspectives of older adults and post-secondary students when it comes to the design of a new campus space dedicated to intergenerational programming and activities. Many studies have demonstrated the benefits that come from initiatives that bring these age groups together (e.g., Anderson et al., 2017). Changing knowledge and attitudes that address age based stereotypes of the old (Cottle & Glover, 2007) and reverse ageism of the young (Andreolotti & Howard, 2018) are recognized as important outcomes of such initiatives.

Figure 3. Artistic rendering of the design of the proposed multipurpose space that one of the OT student groups recommended for gardening and other activities (With permission from artist: Loree Boehm).

Figure 4. Artistic rendering of a recommendation from one of the OT student groups for designing an intergenerational cooking program. (With permission from artist: Loree Boehm).

In fact, these benefits were the impetus for establishing the AFU network and its corresponding principles that recognize the positive role older adults can play in postsecondary education and the importance of including their perspective in projects and activities on campuses (Pstross et al., 2017). In particular, the fourth principle speaks to the promotion of intergenerational learning to facilitate the reciprocal sharing of expertise

between learners of all ages. Guided by the AFU principles, the current study adds a unique element to previous research of such initiatives by capturing feedback from older as well as younger users to inform program development and design of a new space on campus for intergenerational exchange.

Results from the survey and focus groups suggested that older as well as younger participants were positive about the planned space. Involving "potential constituents" in the prospective design of intergenerational initiatives is an approach strongly encouraged by Dauenhauer et al. (2016) who implored institutions of higher education to consult multiple stakeholders, particularly older adults, when developing, promoting or expanding such initiatives. In their study, Dauenhauer et al. also used surveys and focus groups to investigate the potential expansion of educational offerings that would have multigenerational appeal. Although their sample was restricted to older adults from assisted living settings whereas those in the present study still lived independently, their findings were comparable with regard to the types of intergenerational activities that were of potential interest to this population (e.g., technology, learning the culture of young people). The most striking similarity to the current study was emphasis of participants on the "enjoyment of interacting with different generations" (p. 490). Because our study also included post-secondary students, we were able to confirm these age groups share many of the same interests and were excited about the prospect of having a shared space on campus dedicated for this purpose. Forming strong and authentic social connections across generations can be challenging. In this way, creating opportunities for younger and older individuals to recognize their mutual educational interests (e.g., science, service projects, politics) is critical. Having individuals in both age groups complete 'interest checklists' (see Klyczek, Bauer-Yox, & Fiedler, 1997) could provide a good starting point to identify potential shared activities.

During the focus groups, some older participants expressed concern about their ability to interact with the students and their fear of making a negative impression. Interestingly, students did not mention any of these concerns when referring to their past or potential interactions with older adults. However, previous research conducted with post-secondary students suggests advance training in how to approach and communicate with older adults is both welcome and warranted (Blieszner & Artale, 2001; Gutheil, Heyman, Bial, & Perlstein, 2006). Hahn, Kinney, and Heston (2018) reiterated the importance of this training based on recent findings from a service-learning course where students reported challenges with initiating conversations with older adults. Results from the present study suggest such training can benefit both age groups. Further investigation is required to determine the best training approaches, so age-based stereotypes are not perpetuated.

Similar to the study by Dauenhauer et al. (2016) of the value of multigenerational programming in higher education, transportation was also identified by older participants as a potential barrier to their participation. With age, individuals are more likely to experience health-related changes that can impact their medical fitness-to-drive (Dickerson et al., 2007). Unfortunately, loss of licensure in older adulthood, whether voluntary or otherwise, has been linked to depression (Fonda, Wallace, & Herzog, 2001), social isolation (Marottoli et al., 2000) and even early mortality (Freeman, Gange, Muñoz, & West, 2006). Lack of viable transportation options beyond driving is a pressing challenge in many countries, including Canada, due, in part, to their aging population (Vrkljan et al., 2018). Next to driving, riding in a private vehicle is the most popular and preferredmode of community mobility among this age group (Payyanadan & Lee, 2018). With the emergence of ride-sharing services, such as

Uber and Lyft, which typically use personal vehicles, participants in the current study, similar to recent
research studies (see Payyanadan et al., 2018), raised these services as a transportation option in their focus group discussion. Unfortunately, the scope of questioning precluded further investigation, as to whether any had actually used these services and their potential acceptability.

However, by proactively involving users early in the design process, potential barriers can be identified, and countermeasures put in place to circumvent such challenges where possible. Given the known impact of loneliness and social isolation on the health of older adults, supporting their ability to participate in community-based activities, like those planned for the intergenerational space, is key.

Another unique aspect of the current study was the learning activity undertaken by groups of students in the Occupational Therapy (OT) program who were tasked with generating programming and design suggestions for the intergenerational space. The structure for this activity was informed, in part, by early-stage methods adapted from the 'Design Thinking' process (Plattner et al., 2014). Given the flexibility inherent at each stage of Design Thinking (i.e., empathize, ideate, prototype, test), there are many interpretations of the corresponding steps involved in this process; an explanation of which is far too complex and nuanced to be provided here (see Brown, 2009). Nonetheless, involving users at the earliest stage of initiative development, as employed in the current project, provided unique insights with regard to the conceptualization of this intergenerational initiative that might not have been considered otherwise. When selecting research methods that focus on design elements for older adults, it is widely encouraged that those seeking to identify solutions develop empathy for their user group (Newell, Gregor, Morgan, Pullin, & Macaulay, 2011). For example, both younger and older participants in the current project emphasized the importance of conversation and interaction between the generations, which were then analyzed and translated by the OT students into programming suggestions (e.g., conversation café) aimed at addressing user needs (e.g., loneliness, social isolation) alongside key design features (e.g., moveable seating, acoustic accessibility). From these findings, the potential for this intergenerational space to serve as a 'community hub' for both the campus and surrounding neighborhood was raised. Community hubs have been described as physical spaces that aim to address a range of social, health, and other issues of the population living within its geographic vicinity (Premier's Community Hubs Framework Advisory Group, 2015). In the United Kingdom, the 'Our Place!' program was a government-funded initiative that catalyzed local partnerships to co-design 'community hubs,' that serve a variety of users while also promoting volunteerism and meaningful engagement (Fitzhugh, 2016). In contrast to day centres for older adults that are often segregated to the needs of the aging population (Orellana, Manthorpe, & Tinker, 2018), framing the current intergenerational initiative as a community hub and embracing a lifespan perspective can encourage inclusivity through diverse programming. 'Intergenerational contact zone' is another term that has recently emerged in social geography that also adheres to key principles that aim to encourage the sharing of spaces and places across age groups (see Kaplan, Thang, Sanchez, & Hoffman, 2016). Findings from the present study suggest that consultation early and often in the initial design of such spaces or zones is critical. While differences in education, ethnicity, and/or language backgrounds could be a draw for some older adults to participate in university-based intergenerational initiatives, these differences could also push some of them away. Hence, a 'hub and spoke' model might be considered whereby the space being

developed might provide a common meeting spot from which to extend connections to existing 'hubs' already up and running in the community. Such hubs offer the possibility of meeting some older adults on their own ground where they already feel comfortable. By leveraging partnerships between universities and local neighborhoods, the sustainability of intergenerational initiatives can be further strengthened in the years to come.

The findings of this study should be considered in light of certain limitations. Due to the nature of the topic and the aim of prospectively gathering the perspectives of postsecondary students and older adults to inform the design and development of the intergenerational initiative, the background and experiences of those who volunteer for this type of research may not be representative of the larger populations from which they were drawn or those who might access the space. For example, students who responded to the survey or older adults who participated in the focus groups may have already had a 'positive' perspective of the intended project. However, an effort was made to minimize exclusion criteria of those recruited in order to engage a broad range of participants as possible. As well, open-ended questions were used in the survey and focus groups, so users could provide both depth and detail in their responses, which helped contextualize findings within the scope of previous studies. Although different Likert scales were used to assess comfortability of younger (5-point scale) and older adults (10-point scale) thereby preventing a direct comparison among the survey and focus group participants, the perspectives of young and older participants were both examined. As such, the current study provided an opportunity to determine and compare the respective interests of both groups as well as identify potential barriers, so they can also be addressed during the design process, where possible. Given the time constraints imposed by the 8-week Occupational Therapy course, the opportunity for the students to seek iterative feedback on their programming and design recommendations from end-users (i.e., university students, older adults) was limited. However, OT groups did have exposure and access to primary user data from both the surveys and focus groups and sought direct input at multiple time points from older adults throughout the duration of the project.

As demonstrated by participants in the current study, there is a high level of enthusiasm and commitment for the planned intergenerational 'hub' at McMaster University. Our research team plans to continue our ongoing collaboration with users, both young and old, as the architectural plans for this space unfold. As well, findings from the current study have already catalyzed other initiatives, including an investigation of the walkability of campus, which paired older adults with post-secondary students. Involving prospective users in the design process and leveraging their insights to inform initial conceptualizations, as reflected in the recommendations generated by the OT students, was a particularly unique aspect of the current project.

While the OT students recieved feedback from a few older adults on their early ideas for the space and programming, there was limited time built into their coursework to engage in the scale of iteration that is emphasized when using a Design Thinking approach (Plattner et al., 2014). As our study represented an initial foray into the utility of this approach, future research focused on enacting the AFU principles should continue to investigate and document the value of using the Design Thinking process during the development of programming at postsecondary institutions that involve older adults and other stakeholders.

Intergenerational activities in post-secondary settings have enormous potential to change the current narrative of what it means to grow older, which is often perceived through a negative lens. However, such activities need to be designed in a way that

encourages younger and older adults come together to share experiences in
a meaningful way that builds a sense of community and promotes understanding across
generations. Ensuring the set-up of the physical space is congruent with its intended
purpose is also critical. Results from this multistage intergenerational initiative suggest an
important and fundamental relationship between physical space and meaning of place.

Funding

References

Anderson, S., Fast, J., Keating, N., Eales, J., Chivers, S., & Barnet, D. (2017). Translating knowledge: Promoting health through intergenerational community arts programming. Health Promotion Practice, 18(1), 15–25. doi:10.1177/1524839915625037

Andreoletti, C., & Howard, J. L. (2018). Bridging the generation gap: Intergenerational service-learning benefits young and old. Gerontology & Geriatrics Education, 39, 46–60. doi:10.1080/02701960.2016.1152266

Bishop, J. D., & Moxley, D. P. (2012). Promising practices useful in the design of an intergenerational program: Ten assertions guiding program development. Social Work in Mental Health, 10 (3), 183–204. doi:10.1080/15332985.2011.649637

Blieszner, R., & Artale, L. M. (2001). Benefits of intergenerational service learning to human services majors. Educational Gerontology, 27(1), 71–87. doi:10.1080/036012701750069058

Brown, T. (2009). Change by Design- How design thinking transforms organizations and inspires innovation. New York, NY: Harper Collins.

Bruni, F. (2017, September 2). The real campus scourge. The New York Times. Retrieved from https://www.nytimes.com

Buchanan, R. (1992). Wicked problems in design thinking. Design Issues, 8(2), 5–21. doi:10.2307/1511637

Centre for Excellence in Universal Design. (2017). National disability authority (Government of Ireland). Retrieved from http://universaldesign.ie

Cigna. (2018, May). U.S. Loneliness index. Retrieved from https://www.cigna.com

Cook, G., & Bailey, C. (2013). Older care home residents' views of intergenerational practice. Journal of Intergenerational Relationships, 11(4), 410–424. doi:10.1080/15350770.2013.837802

Cottle, N. R., & Glover, R. J. (2007). Combating ageism: Change in student knowledge and attitudes regarding aging. Educational Gerontology, 33(6), 501–512. doi:10.1080/03601270701328318

Dakers, S. (2018, January 23). The minister for loneliness will need all the friends she can get. The Guardian. Retrieved from https://www.theguardian.com

Dauenhauer, J., Steitz, D. W., & Cochran, L. J. (2016). Fostering a new model of multigenerational learning: Older adult perspectives, community partners, and higher education. Educational Gerontology, 42(7), 483–496. doi:10.1080/03601277.2016.1157419

Dickerson, A. E., Molnar, L. J., Eby, D. W., Adler, G., Bédard, M., Berg-Weger, M., & Trujillo, L. (2007). Transportation and aging: A research agenda for advancing safe mobility. The Gerontologist, 47(5), 578–590. doi:10.1093/geront/47.5.578

Fitzhugh, C. (2016, April 8). UK government transforms local neighbourhoods with 'Our Place!' programme. European Social Network News. Retrieved from http://www.esn-eu.org/news/764/index.html

Fonda, S. J., Wallace, R. B., & Herzog, A. R. (2001). Changes in driving patterns and worsening depressive symptoms among older adults. Journal of Gerontology: Social Sciences, 56, S343–S351. doi:10.1093/geronb/56.6.S343

Freeman, E. E., Gange, S. J., Muñoz, B., & West, S. K. (2006). Driving status and risk of entry into long-term care in older adults. American Journal of Public Health, 96, 1254–1259. doi:10.2105/AJPH.2005.069146

Gonzales, E., Morrow-Howell, N., & Gilbert, P. (2010). Changing medical students' attitudes toward older adults. Gerontology & Geriatrics Education, 31(3), 220–234. doi:10.1080/02701960.2010.503128

Gutheil, I. A., Heyman, J. C., Bial, M., & Perlstein, S. (2006). Interdisciplinary training to use living histories with older adults. Activities, Adaptation & Aging, 30(4), 47–57. doi:10.1300/J016v30n04_04

Hahn, S. J., Kinney, J. M., & Heston, J. (2018). "So we basically let them struggle": Student perceptions of challenges in intergenerational service-learning. Gerontology & Geriatrics Education, 1–14. doi:10.1080/02701960.2018.1447935

Hakulinen, C., Pulkki-Råback, L., Virtanen, M., Jokela, M., Kivimäki, M., & Elovainio, M. (2018). Social isolation and loneliness as risk factors for myocardial infarction, stroke and mortality: UK Biobank cohort study of 479 054 men and women. Heart, 104, 1536–1542. Advance online publication. doi:10.1136/heartjnl-2017-312663

Harris, P. B., & Caporella, C. A. (2014). An intergenerational choir formed to lessen Alzheimer's disease stigma in college students and decrease the social isolation of people with Alzheimer's disease and their family members: A pilot study. American Journal of Alzheimer's Disease & Other Dementias, 29(3), 270–281. doi:10.1177/1533317513517044

He, W., Goodkind, D., & Kowal, P. (2016). U.S. Census Bureau, an aging world: 2015 (Issue: P95/16-1). Washington, DC: U.S. Government Publishing Office.

Hinners, C. K., & Potter, J. F. (2006). A partnership between the University of Nebraska College of Medicine and the community: Fostering positive attitudes towards the aged. Gerontology & Geriatrics Education, 27(2), 83–91. doi:10.1300/J021v27n02_09

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. Perspectives on Psychological Science, 10(2), 227–237. doi:10.1177/1745691614568352

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. Qualitative Health Research, 15(9), 1277–1288. doi:10.1177/1049732305276687

IDEO. (2009). The human-centred design toolkit. In I. d. consultancy (Series Ed.) (p. 105). Retrieved from http://www.ideo.com/work/item/human-centered-design-toolkit/

Kaplan, M., Thang, L. L., Sanchez, M., & Hoffman, J. (Eds.). (2016). Intergenerational zones – A compendium of applications. University Park, PA: Penn State Extension. Retrieved from https://aese.psu.edu/extension/intergenerational/articles/intergenerational-contact-zones

Kitzinger, J. (1995). Qualitative research: Introducing focus groups. BMJ: British Medical Journal, 311(7000), 299–302. doi:10.1136/bmj.311.7000.299

Klyczek, J. P., Bauer-Yox, N., & Fiedler, R. C. (1997). The interest checklist: A factor analysis. American Journal of Occupational Therapy, 51(10), 815–823. doi:10.5014/ajot.51.10.815

Krueger, R. A., & Casey, M. A. (2014). Focus groups: A practical guide for applied research. Thousand Oaks: Sage.

Marottoli, R. A., de Leon, C. F., Glass, T. A., Williams, C. S., Cooney, L. M., & Berkman, L. F. (2000). Consequences of driving cessation decreased out-of-home activity levels. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 55(6), S334–S340. doi:10.1093/geronb/55.6.S334

Morgan, D. L., & Krueger, R. A. (1998). The focus group kit (pp. 1–6). Thousand Oaks: Sage.

Murayama, Y., Ohba, H., Yasunaga, M., Nonaka, K., Takeuchi, R., Nishi, M., … Fujiwara, Y. (2015). The effect of intergenerational programs on the mental health of elderly adults. Aging & Mental Health, 19(4), 306–314. doi:10.1080/13607863.2014.933309

Newell, A. F., Gregor, P., Morgan, M., Pullin, G., & Macaulay, C. (2011). User-sensitive inclusive design. Universal Access in the Information Society, 10(3), 235–243. doi:10.1007/s10209-010-0203-y

Orellana, K., Manthorpe, J., & Tinker, A. (2018). Day centres for older people: A systematically conducted scoping review of literature about their benefits, purposes and how they are perceived. Ageing & Society, 1–32. doi:10.1017/S0144686X18000843

Payyanadan, R. P., & Lee, J. D. (2018). Understanding the ridesharing needs of older adults. Travel Behaviour and Society, 13, 155–164. doi:10.1016/j.tbs.2018.08.002

Plattner, H., Meinel, C., & Leifer, L. (Eds.). (2014). Design thinking research: Building innovators. Design thinking research: Building innovators. New York: Springer.

Powers, M., Gray, M., & Garver, K. (2013). Attitudes toward older adults: Results from a fitness-based intergenerational learning experience. Journal of Intergenerational Relationships, 11(1), 50–61. doi:10.1080/15350770.2013.755067

Premier's Community Hubs Framework Advisory Group. (2015, June). Community hubs in Ontario: A strategic framework and action plan. The Government of Ontario. Retrieved from https://www.ontario.ca/page/community-hubs

Pstross, M., Corrigan, T., Knopf, R. C., Sung, H., Talmage, C. A., Conroy, C., & Fowley, C. (2017). The benefits of intergenerational learning in higher education: Lessons learned from two age friendly university programs. Innovative Higher Education, 42(2), 157–171. doi:10.1007/s10755-016-9371-x

Rubin, S. E., Gendron, T. L., & Peron, E. P. (2016). Reciprocity and shared experiences through transgenerational creative arts. Public Policy & Aging Report, 26(3), 111–113. doi:10.1093/ppar/prw010

Sabir, M., Wethington, E., Breckman, R., Meador, R., Reid, M. C., & Pillemer, K. (2009). A community-based participatory critique of social isolation intervention research for community-dwelling older adults. Journal of Applied Gerontology, 28(2), 218–234. doi:10.1177/0733464808326004

Sánchez, M., & Kaplan, M. (2014). Intergenerational learning in higher education: Making the case for multigenerational classrooms. Educational Gerontology, 40(7), 473–485. doi:10.1080/03601277.2013.844039

Statistics Canada. (2015, May). Population projections for Canada (2013 to 2063), Provinces and Territories (2013 to 2038) (Catalogue No. 91-520-X). Retrieved from https://www.statcan.gc.ca

Teater, B. (2016). Intergenerational programs to promote active aging: The experiences and perspectives of older adults. Activities, Adaptation & Aging, 40(1), 1–19. doi:10.1080/ 01924788.2016.1127041

Vrkljan, B., Cammarata, M., Marshall, S., Naglie, G., Rapoport, M., Sangrar, R., … Tuokko, H. (2018). Chapter 11: Transportation mobility. In P. Raina, C. Wolfson, S. Kirkland, & L. Griffith (Eds.), The Canadian Longitudinal Study on Aging (CLSA) Report on health and aging in Canada: Findings from baseline data collection. Retrieved from https://www.clsa-elcv.ca/doc/2639

White, P. (2012). Designer as ethnographer: A study of domestic cooking and heating product design for Irish older adults (PhD thesis). National University of Ireland Maynooth, Kildare, Ireland.

World Health Organization. (2007). Global age-friendly cities: A guide. World Health Organization. Switzerland.

World Health Organization. (2017). Global strategy and action plan on ageing and health. Switzerland: Author. Retrieved from https://www.who.int/ageing/WHO-GSAP-2017.pdf?ua=1