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ABSTRACT

The inter-generational participatory co-design project (IPCP) was a theory-guided intergenerational project aiming at eliminating ageism by way of intergenerational contact in an innovative educational experience in higher education. Mixed-method evaluation was adopted with quantitative evaluation conducted before and after the project, supported by post-project individual interviews. Students reported significantly improved attitudes toward older adults ($p = .042$; $d = .60$). Follow-up focus group interviews with students qualitatively examined the factors associated with the improved attitudes toward older adults. The study provides insights for the model of an intergenerational learning experience in tertiary education.

Population ageing will be one of the main concerns of the world, if not already. By 2050, a substantial number of countries will have an older population constituting over 30% of their total population. With the total number of older adults exceeding two billion in the whole world (World Health Organization (WHO), 2015). In Hong Kong, the number of older adults is projected to reach 2.59 million, with the proportion of 17% in 2016, to 37% in 2066 (Lou, Chen, et al., 2020). An important element to tackle in population ageing is ageism. A negative, often stereotypical attitude toward older adults is observed across cultures (Palmore, 2001; Sharps et al., 1998). Some of the most widely shared stereotypes of older adults are the '3Ds,' where they are perceived as dependent, depressed, and demented (Mui et al., 2008). WHO (2015) recognized that an ageist attitude negatively impacts ageing societies, where older adults' health can decline as they face negative attitudes, and leads to societal challenges in recruiting health workers for older patients.

Particularly of concern is the prevalence of ageism among students in higher education (Gutiérrez & Mayordomo, 2019; Luo et al., 2013), especially in disciplines related to health care (Ghimire et al., 2019; Mohammed & Omar, 2019). In light of this, researchers began looking into ways to eliminate ageism, and consistently reported the importance of intergenerational contact (Burnes et al., 2019; So & Shek, 2011), especially in carefully designed environments which fosters intergenerational collaboration (Sun et al., 2021). However, while there has been an abundance of intervention dedicated to ageism elimination among children, adolescents, and younger adults, including tertiary-level students (Burnes et al., 2019), they often lack theoretical support. This is unfortunate given the prevalence of ageist attitudes among younger adults particularly university students. Universities are supposed to be the place where students get prepared for a life in society. The University of Hong Kong has recognized

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the importance of learning about ageing and therefore pinned down a strategic research focus on Geriatric Science & Gerontechnology.

In line with this, the intergenerational participatory co-design project (IPCP) was developed to leverage the interdisciplinarity in testing out an innovative pedagogy that could be adopted in both formal curriculum and experiential learning programs at The University of Hong Kong. The project aimed to design and structure the experiential learning or contextualized knowledge component of the learning process through a participatory co-design method. As the project title suggests, this is a trial to test the feasibility of participatory design, which aims to involve participants as co-creators of both the learning process, and its learning outcome. The project hoped to create a collaborative relationship among participants across ages in designing innovation and solutions to specific real-life problems, and in this case, addressing the multifaceted challenges of the ageing society. The IPCP is essentially an intergenerational collaboration learning experience in a higher education setting.

Ageism and Optimal Quality Intergenerational Interaction Model (OQII)

Ageism is defined as 'stereotyping, prejudice, or discrimination toward people on the basis of age' (Officer et al., 2016). In effect, it 'is a negative attitude or disposition toward ageing and older adults based on the belief that ageing makes people unattractive, unintelligent, asexual, unemployable, and mentally incompetent' (Atchley & Barusch, 2004, p. 439). One of the main reasons why these stereotypical views can persist is because of a separation of age groups in a society (Lou, Lum, et al., 2015). For example, changing family structures has resulted in fewer opportunities for older and younger generations to live in the same household and interact on a daily basis (Yan, 2016). Social services also tend to be age-segregated and provide services exclusively to one age group, thus limiting non-familial intergenerational contact in the community. Because older adults are not often equipped with digital literacy, the Internet is intrinsically a product of ageism in that it excludes older adults from participation (Manor & Herscovici, 2021). The resulting generation gap may lead to a crisis in intergenerational solidarity, which is imperative for the psychological well-being and social development of both generations (Lou, Lum, et al., 2015).

Literature has long suggested that ageism can be effectively eliminated by way of intergenerational contact (Burnes et al., 2019; So & Shek, 2011). Indeed, the effectiveness of a number of intergenerational programmes by way of contact reported in promoting positive attitudes of young people toward older adults has been well-documented (Chorn-Dunham & Casadonte, 2009; Femia et al., 2008; Kaplan et al., 1998; Lynott & Merola, 2007). Consolidating these experiences, the Positive Education about Ageing and Contact Experiences (PEACE) model by Levy (2016) affirmed that positive intergenerational contact experience can reduce anxiety, discrimination, prejudice, and stereotyping against older adults.However, while the PEACE model provides a solid overarching theoretical base for intergenerational contact, it does not account for the specific steps to work toward intergenerational solidarity and thereby achieve the desired social and educational outcomes. In this light, Sun et al. (2018) developed a theoretical framework for intergenerational contact programmes for the purpose of eliminating ageism, adapted for the Chinese context, namely the Optimal Quality Intergenerational Interaction Model (OQII). The OQII model includes five elements of interest, namely 1) *institutional support*, where intergenerational contact must be thoroughly discussed and fully endorsed, and that an anti-ageism objective is shared across all parties, from the principal investigators to the support personnel (i.e., facilitators) from all institutions. This is important because different institutions may have different research objectives; 2) *collective goal establishment*, where participants of both generations are expected to develop the same goal preferably meaningful to both the age groups, ensuring all members' engagement; 3) *intergroup collaboration*, where participants of both generations are expected to delegate tasks appropriately and work toward the same goal, dependent on each other, rather than separately. An equal status collaboration should be educated, monitored, and enforced by facilitators throughout this stage; 4) *active participation*, where all participants should participate in the contact process actively without failure. Facilitation may be
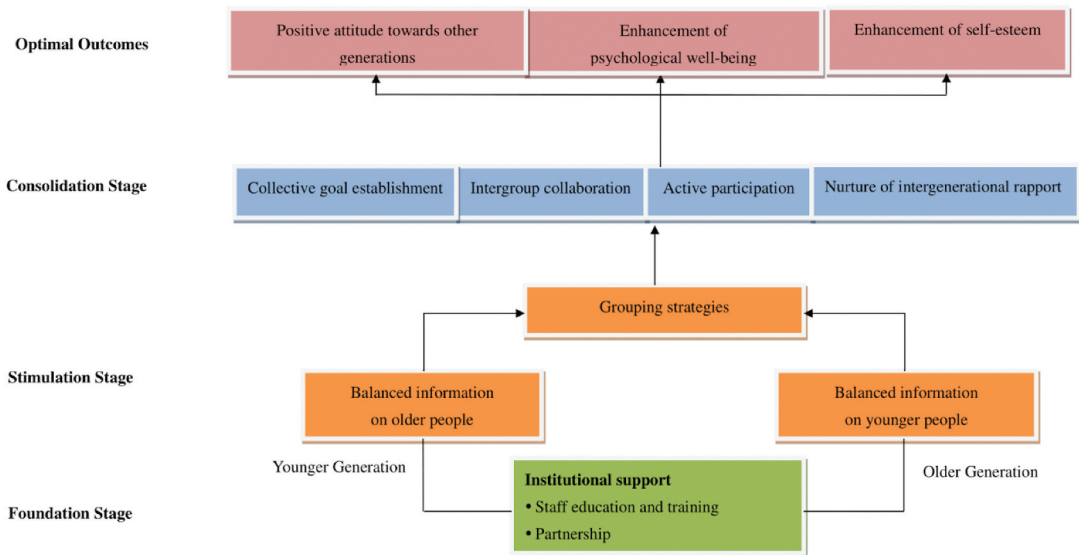
Figure 1. The Optimal Quality Intergenerational Interaction Model – OQII (Sun et al., 2018).

required if there was disengaged members; and 5) *nurturing intergenerational rapport*, where inter-generational friendships should be encourage, and opportunities created, so that the intergenerational bond extends beyond mere intergenerational contact itself. Furthermore, the OQII model also entails a three-stage process, namely, 1) *consolidation*, where programme management staff are briefed to ensure their understanding of the objectives of the intergenerational contact; 2) *stimulation*, where participants of both generations acquire knowledge about the other age group beforehand, separately, for the purpose of preparing what to expect in collaboration with the other age group; and 3) *consolidation*, where the intergenerational contact takes place following the OQII model. The OQII model chart is presented in Figure 1.

Bridging generations through participatory co-design

Participatory co-design is an approach 'not only focused on the outcomes of design processes but also on the process itself, as it is a vehicle for enabling the co-designers meaningful participation' (Jessen et al., 2018, p. 3). With this, Jessen et al. (2018) stated the basic tenets for a participatory approach to design, namely 1) a mutual understanding among participants to better understand each other and the real-life scenarios in which the products will be applied; 2) an equal status of power among the participants, particularly to those who do not often have such privilege, and 3) support from necessary tools and techniques to enable communication and collaboration. In this light, a participatory co-design approach appears to be a suitable vehicle for intergenerational contact corresponding to the OQII model, in that they both ensure an active, equal collaboration between participants toward a shared goal, in this case, the design of a technology-based cultural/heritage preservation project.

Involving community stakeholders to co-design urban projects has been increasingly popular in research, as scholars have argued that a top-down policy-centric approach to urban design is no longer sufficient to address multifaceted real-life problems such as sustainable development, quality of life, nature and culture conservation and well-being (Puerari et al., 2018). There has been an increasing amount of intergenerational participatory co-design projects in recent years, with a number of them involving children and younger adults (Guha et al., 2013; Yip et al., 2017). Nevertheless, a recent review reported that there has been a growing amount of research where participatory co-design projects involved older adults in the last decade, particularly in the form of a workshop using

technology (Amaro et al., 2020). Scholars have also identified the benefits of engaging older adults in participatory design, such as research and community development (Chen et al., 2020). While these intergenerational participatory co-design projects attempted to consolidate their experience, they often focused on the technological aspect to it and the success factors of these intergenerational teams remain unexplored (Azevedo-Gomes et al., 2020; Loos et al., 2019). To this end, the IPCP served as an important experimental ground for data collection and findings of such pedagogical innovation.

Method

Intergenerational participatory co-design project (IPCP): theoretical base

The IPCP was a co-design learning experience involving older adults from the community, university students, and secondary school students where they would design and execute a technology-based cultural and heritage preservation project in teams, under the facilitation of various academic staff and librarians of the University in a collaborative learning space of the Libraries. To do this, the project followed the Optimal Quality Intergenerational Interaction Model (OQII) (Sun et al., 2018). This model was culturally modified to guide the principles for group dynamics between older and younger adults in Chinese society, in order to ensure an effective and positive interaction between age groups. Their description and corresponding procedures are presented in Table 1.

Procedure

The programme began with a briefing session which outlined the goals and objectives of the IPCP. During this session, participants were also exposed to the first important element of the OQII model where they were 'stimulated' with adequate information about the other age group, separately, before intergenerational collaboration took place. For example, younger participants would learn about the older generation through documentary appreciation, and discussion with ageing researchers. Similarly, older participants would learn about the younger generation through trendy slang and Internet memes. After the briefing, the participants would form into groups accordingly. Each group would contain an equal number of participants from older, and the two younger age groups. While the overarching theme of cultural heritage preservation in Hong Kong remained the same, the goal of each group was different and was at their disposal. Participants were encouraged to generate their own project ideas during a design thinking workshop after the briefing, organized by a faculty from one of the institutions. For example, one group worked toward the preservation of tai-chi in the form of 3D motion capture, while another group designed a smartphone application for the historic location Shanghai Street in a developed district of Hong Kong called Kowloon. The programme ran for one semester which gave participants approximately three months to complete their projects, during which the groups operated at their own disposal under the facilitation of the facilitators assigned to

Table 1. Overall structure of the IPCP based on OQII model.

Stages	OQII principles/steps	Corresponding procedures
Foundation	Institutional support	• Acquisition of support from multiple talents in the University (i.e. [Removed for review] etc.) • Project objectives alignment across all parties • Personnel support • Location support
Stimulation	Balanced information acquisition	• Briefing session for student and older adult groups • Education on the other age group's characteristics prior to engagement
Consolidation	Collective goal establishment Intergroup collaboration Active participation Nurture of intergenerational rapport	• Group project idea development • Project execution and presentation • Informal gatherings • Facilitators' support throughout the project

Table 2. Project group descriptions.

Group	Group formation	Topic	Output
1a	• 2 secondary students • 2 university students • 2 older adults	Preserving Yim Tin Tsai Island	A website with videos exhibiting different spots of interest on the island
1b	• 2 secondary students • 2 university students • 1 older adult		
2	• 2 secondary students • 2 university students • 2 older adults	Tai Chi and 3D motion capture	Using 3D motion-capture equipment to generate animations, trying out different models to compare movements as a pilot for future studies
3	• 2 secondary students • 3 university students • 1 older adult	Traveling in Shanghai Street with augmented reality	An augmented reality smartphone app for Shanghai Street

each group (elaborated below). All group members (i.e., older and younger adults) participated voluntarily without compensation. Group projects and their outputs are presented in Table 2.

Facilitators of each group included personnel from Common Core Curriculum, the Libraries, and Sau Po Centre on Ageing. These facilitators followed each group throughout the process to provide necessary support, and more importantly, to actively ensure the implementation of the OQII model. More concretely, upholding the principle of collective goal establishment in the design stage, equal status communication, and active participation during project execution, and nurturing intergenerational rapport during and after the project. Indeed, the whole process of inter-group collaboration was monitored by the facilitators in each group's Whatsapp chat groups. They also chaperoned to field work outings to also help ensure the safety of all members. Aware of the OQII principles, facilitators paid special attention to the group dynamic and intervene only when necessary. For example, if the work progress was unsatisfactory (thus preventing the group to present their work by the deadline), they would take an active role to direct the group. Whereas if any age group or individual member was overwhelmingly involved or disengaged in the project, they would discuss with the group and delegate project tasks accordingly. Similarly, if there was power imbalance within the group they would intervene and discuss with the group members, reiterating the importance of equal status communication. Otherwise, the groups would take the initiative to organize internal meetings, site visits, and group work sessions on their own. This is an important element to IPCP because the OQII entails the nurturing of friendships across age groups. The freedom to work together on their own helps catalyze this process.

Programme evaluation

Because the IPCP is an interdisciplinary collaboration, the programme was evaluated with a set of research questions set upon by various disciplines. With regard to whether the IPCP would promote positive attitude among students toward older adults, a scale of The Ageing Semantic Differential (ASD) was adopted to evaluate the differences of such between pre and post treatment. In the present article, the refined version of ASD (Polizzi, 2003) which consists of 24 pairs of opposite adjectives about older adults on a 7-point scale was deployed. Pre and post tests were administered at the first and final session of the programme. To follow up, participants were also invited to participate in an individual semi-structured interview with the researchers to evaluate the process of the intergenerational collaboration. The qualitative data was evaluated using thematic analysis (Braun & Clarke, 2006) where a 6-phase process of data handling was followed. Specifically, 1) the transcripts were familiarized and given initial analytic ideas and thoughts by the coders; 2) initial codes were assigned which appear to be meaningful and interesting to the analysis; 3) potential themes were identified and examined by considering how they may be combined to form themes; 4) potential themes and sub-themes were reviewed and refined; 5) themes and sub-themes were labeled to capture the essence of

the meaning, with consideration to the research question; and 6) themes and sub-themes were presented coherently, concisely, logically, non-repetitively and interestingly enough for the 'story' the researcher seeks to convey. Vivid examples such as quoted extracts were presented to exemplify the essence of the findings.

Results

Participants

A total of 19 students were recruited from a secondary school and the University to participate in the IPCP. Among them, the 8 secondary school students were all in the secondary 3 level. Older adults from the community were recruited through Sau Po Centre on Ageing in an existing volunteer group pool. They were all of the 'youngest-old' (i.e., 60–74 years old; or 'young-old'). The demographics of the participants are presented in Tables 3 and 4.

Attitudes toward older adults

A paired-samples t-test was conducted to evaluate students' attitudes toward older adults before and after the IPCP. Results from the pre-treatment test (M= 114.14, SD= 9.79) and post-treatment test (M= 123.43, SD= 14.54) indicated that students reported an improved attitude toward older adults after the IPCP, $t(13) = -2.25$, $p = .042$, $d = .60$. The results are presented in Table 5.

Thematic analysis: attitude change toward older adults

Following the quantitative analyses, the participants were invited to a follow-up focus group interview in which they would address the change in attitudes, thus providing insights as to the factors associated with this change. 7 students (Secondary= 3; University= 4) agreed to attend the focus group interviews. The qualitative data was coded by two independent coders following the thematic analysis process. Discrepancies were resolved in a discussion after the coding was completed and compared against each other. At the end, three themes containing eleven sub-themes emerged, namely, 1) perception

Table 3. Assessments of younger participants ($N = 19$).

Variables	Secondary school students (n= 8)	University students (n= 11)
Gender (n, %)		
Male	7 (87.5)	3 (27.3)
Female	1 (12.5)	8 (72.7)
Grade		
Secondary 3	8 (100.0)	-
Tertiary 1	-	3 (27.3)
Tertiary 2	-	3 (27.3)
Tertiary 3	-	3 (27.3)
Tertiary 4	-	-
Tertiary 5	-	2 (18.2)

Table 4. Assessments of older participants (N= 6).

Variables	Older participants
Gender (n, %)	
Male	4 (66.6)
Female	2 (33.3)
Age (n, %)	
60–64	2 (33.3)
65–69	1 (16.7)
70–74	3 (50.0)

Table 5. Effects of IPCP on younger people's attitudes toward older people (*n*= 14).

Item	Cronbach's alpha	Pre-treatment	Post-treatment	*t, p*	Cohen's d
		M (SD)	M (SD)		
14	.73	114.14 (9.79)	123.43 (14.54)	−2.25 (.042)	.60

The Ageing Semantic Differential (ASD).

change, 2) assumption challenged, and 3) cross-age adjustment. Themes and sub-themes are presented in Table 6.

Perception change

An important part of the IPCP was that it provided a setting where students were able to interact with older adults. It was very rare for students to have interacted with older adults from such a close distance and for such a prolonged period of time. Almost all of the younger participants had never worked with older adults in any capacity prior to the IPCP, having only experience working with peers on schoolwork. As they looked back to the experience, they perceived the intergenerational contact was beneficial to their development in different ways and began to see older adults differently. For example, a majority of the university students perceived the contact as a means to prepare them for the workplace. As one student noted:

> I think it is a good experience to go to a group of people of different ages because they have different characteristics and ability to help for a project. I think it also applies to your future work. I think whatever industries or roles that you will play. I will be facing people from different age groups.　　　(Year 1, Female)

Whereas most secondary school students thought it was a new experience which was valuable to them:

> I think it's a lot better than splitting the elderly with the elderly and the students with students because that way, there won't be really any interaction, because it's students don't know the elderly enough and the elderly don't know the students enough but like with the mixed groups, they have to interact a lot and they have to learn about each other.　　　(Secondary 3, Male)

Both secondary and university students were more optimistic toward the ageing society. As they saw the contribution older adults make in the IPCP, many of them raised important points about older adults and the workforce as well as the opportunities that the 'silver market' would bring:

> I think the policy is to cooperate with them to re-employment, to see what kind of work they like, and then also be happy to contribute to society. I think they also have a lot of good talents to help us. (Year 1, Female)

> I feel less desperate, although we are having a larger proportion of elderly, but at the same time, they are also the main supporters of some of the elderly products, a lot of social innovation projects are related to improving elderly life . . . So in fact, having more elderly could be some of the market opportunity. (Year 4, Female)

> Like before, we only think of the increase and the demand of the medical services or welfare services in the society. And there is kind of discouraging comments for the ageing society, but after the project, I feel that it is not bad, as we think it is because although they are old, that does not mean that they are not capable in processing

Table 6. Themes and sub-themes on younger people's attitude change toward older people (*n*= 14).

Themes	Sub-themes	Student group
Perception change	Better preparation for the workplace; Optimistic about ageing society	University
	A new experience; Optimistic about ageing society	Secondary
Assumption challenged	Education; Openness; Daily lives; Contribution to society	University
	Openness	Secondary
Cross-age adjustment	Different work styles	University
		Secondary

new ideas or giving valuable ideas to your society and output into the cities. Although they are old, they can still play a very big role in society. (Secondary 3, Male)

Assumption challenged

When they were first put together in a group, the students reported a series of assumptions toward older adults being challenged. University students appeared to be more insightful than secondary school students, in which they reported different perspectives to previously held stereotypes of older adults, for example:

I realised, a lot of the senior champions are very well educated. Some of them even have postgraduate education and they work as a very high ranking professional before they retire. (Year 4, Female)

I have never thought that the older generation would be willing to try because my father and my mother do not know how to use computers like Facebook or gmail. They're not very curious and they always say, oh, I don't know how to use them. But this time I found some elderly, they are willing to try new things, even if they are not familiar with it. (Year 4, Female)

But then I realised that a lot of them have goals, even for the retired life they try to make the best out of it. For example, some of them will wake up very early in the morning to go hiking. Afterwards, they go for mentorship for university students. They really make the best out of their time and their schedule is just as packed as us. (Year 4, Female)

They're not tech smart. Everyone has their parents asking them, "oh, fix the Wi-Fi" but it wasn't like that. I think [older participant] found the main error with the VR tech because she mentioned certain Tai Chi moves that focus on individual fingers or joints, which are very detailed and we couldn't reproduce that in the VR. So her being able to see that helped us see the limitations of this technology. (Year 2, Male)

As for secondary school students, only the attitude of openness among older adults were of a shock to them:

I don't think they can actually give that much ideas or advice. Things are so innovative and just new things. But actually, after this project I can actually feel that their participation in such development can be actually very important in terms of development for such an ageing society across the world. (Secondary 3, Male)

Cross-age adjustment

Following assumptions being challenged, it was important for both university and secondary school students to adjust in their work style in the IPCP as they navigated toward the common goal. For example, in managing the group project, university students realized their older counterparts expected a much higher level of preparedness when they came in for group meetings. This was natural as older adults in the programme were retired and had been in the workplace for decades prior to the IPCP. As one university student noted:

I feel like I have to be far more professional. I have to have an agenda ready but then with peer meetings, sometimes you just call it like recently we've not done much preparation, but everyone is still okay with that. But then working with seniors, I think it's better for yourself to really be well prepared, otherwise you will end up wasting each other's time. (Year 4, Female)

With secondary school students, older adults' standards appear to be appealing as they were able to rely on older adults in the group projects:

So when I'm collaborating, they really give us many points and are pushing this project forward. Because they actually kind of solved many problems, for example the stories or sort of background of the app because I know nothing about Shanghai Street. I just know it is a place that is revitalised and I want to use this place, but the elderly gave me a lot of information. (Secondary 3, Male)

Discussion

The present study set out to evaluate the change in attitudes toward older adults among students in the secondary and university level following the IPCP, an intergenerational participatory co-design project. The quantitative analyses revealed that the students reported significant change in attitude toward older adults after the IPCP. A subsequent qualitative analysis then revealed three key themes associated with this change, namely 1) perception change, 2) assumption challenged, and 3) cross-age adjustment.

The IPCP adopted the OQII model in its design where younger and older generations were introduced to each other strategically (Sun et al., 2018), thus ensuring optimal advantages that the cross-generation interaction yielded. The elements entailed in the OQII model not only have theoretical underpinnings with Intergroup Contact Theory, but also receive scientific support as evidence-base practices. For example, the scoping review by Jarrott et al. (2021) identified most, if not all, necessary practices as suggested by the OQII model of effective intergenerational programmes in the United States. These included, collective goal establishment, intergroup collaboration, active participation, and intergenerational rapport. Some of the evidence-base practices identified in the review, despite not directly corresponding to OQII components, can be argued as part of institutional support. For example, authority figures endorsing intergenerational contact, as well as selecting and setting a suitable environment for intergenerational relationship building, are essentially the functions of institutional support elaborated in greater detail.

Indeed, even though the IPCP was a multi-disciplinary collaboration involving research goals from the Libraries, Common Core Office and co-investigators from various faculties, it was encouraging that the project collaborators from these fields understood ageing and were supportive of the ageing element and encouraged the cross-generational interactions following OQII principles. This was important because institutional support is the foundation of the OQII model. For example, the Libraries provided access cards for older adult participants so that they would be able to enter the university library area to work on the projects with the students any time during the day without difficulty. The support of these collaborating partners were also demonstrated by their willingness to infuse the element of ageing into their respective area. For example, a faculty introduced older adults into a course at the Education Faculty for two semesters. The Common Core Curriculum at the university also introduced a new transdisciplinary minor and cluster under Common Core curriculum titled 'The Human Lifespan.'

Ageism is essentially stereotyping and being prejudiced against other age groups. There is an abundance of literature on the effectiveness of stereotype and prejudice reduction interventions where exposure to respected members of disadvantaged groups or counter-stereotypical exemplars were deployed (i.e., Dasgupta & Asgari, 2004; Dasgupta & Greenwald, 2001). These interventions followed that people's attitudes, or prejudice, and beliefs, or stereotypes are malleable and are subject to change when they are presented with incongruent representations (Allport, 1935). Specifically, Koenig and Eagly (2014) applied social role theory and suggested that such stereotypes were derived from the overrepresentation of some social group members. For example, the overrepresentation of females in health care work, and males in science, technology, engineering, and mathematical (STEM) fields often resulted in sexism. Following that stereotypes are formed with the association of stereotype-congruent belief and social group, it is therefore reasonable to infer that the exposure to counter-stereotypical role models would influence and reduce stereotypical beliefs (FitzGerald et al., 2019; Olsson & Martiny, 2018). However, most of these studies were conducted in laboratory settings and were not applicable to real-life situations. The IPCP, despite being guided by OQII, provided much flexibility for older and younger generations to interact at their disposal in the span of a semester, thus overcoming this research gap and provided insights as to prolonged exposure to counter-stereotypical role models in a non-controlled but theory-guided environment.

Indeed, the involvement of 'youngest-olds' (i.e., age 60–74) was important to the reduction of ageism. This group of older adults are significantly different from any other previous older generations

as they were more educated and had more professional work experience, especially in the Chinese society (Chou & Chi, 2002), with many of them contributing in various meaningful roles after their retirement (i.e., Chen et al., 2020; Cheung et al., 2021). As the first emerged theme suggested, these 'youngest-old' exemplars' representations were significantly incongruent to the previously-held attitudes that older adults are useless and even a burden to the society, thus positively impacting the prejudice against older adults. Furthermore, as they were put together as a group to collaborate with each other, the students began to get to know the older adults and discovered they were in fact not uneducated, stubborn, and boring, thus breaking down their stereotypes of the 'typical older adult.'

Following the OQII model, colleagues from the Libraries, Common Core office, and Sau Po Centre on Ageing were important figures to facilitate the four elements in the consolidation stage (Figure 1). This support ensured a smooth transition to adjusting the work styles of the other age group, particularly in ensuring a culturally-appropriate intergroup collaboration process. For example, they coordinated within the group so that each student participated actively throughout the project. This was important because secondary school students were often left out of the conversation as older adults and university students were relatively more dominant in managing the projects. Furthermore, it was likely that Chinese older adults assume the leadership role in the group for cultural reasons, and it was important that the facilitators intervene to always maintain equal group status between older and younger participants to ensure intergroup collaboration and collective goal establishment. The support from facilitators eventually allowed for an effective cross-age group work to take place.

The achievements of the IPCP should encourage faculties to explore the possibility of integrating the ageing component into the curriculum or at least on the campus. Indeed, incorporating ageing-related content into formal curriculum can enable university students to acquire relevant knowledge to meet older adults' needs among a wide range of disciplines. For example, The University of Hong Kong implemented the Geron-Infusion Education: Campus Ageing Mix Project for University Students (GIE: CAMPUS) programme (Wong et al., 2022) where a series of intergenerational teaching activities were incorporated into various formal curricula in the University. The IPCP has reported encouraging results that a theoretically-guided teaching plan may yield desirable educational and social outcomes. Future studies should consider following the OQII model to ensure the validity of the findings which would also allow for cross-study comparisons. Furthermore, it would have been a more comprehensive project if the IPCP was designed to benefit both generations rather than targeting only the student group. Such an intervention would have implications on intergenerational and cross-generational relationship building and thereby solidarity. Future studies should also attempt to achieve this.

The IPCP was not without its limitations. The small sample size has compromised the external validity of the findings, not to mention that the recruited students in the IPCP may well be more receptive to new ideas and less ageist. Even though other intergenerational programmes adopting the OQII model (e.g., Cheung et al., 2021; Sun et al., 2021) have shown desirable outcomes among larger samples, it should be noted that the execution processes of these programmes were vastly different, with different educational and social objectives and outcomes. Second, the IPCP did not measure the frequency of group meetings as each group took the initiative to work on their projects in a semester. This was undesirable as it would have been important insights to evaluate how the frequency of intergroup collaboration would have played out in terms of attitudinal and behavioral change. Third, because the IPCP was an integrated effort by various academic disciplines in the University, with a number of research questions of interest, ageing was only one aspect of the programme. Methodologically, assessing attitude change toward older adults using a single measure is undesirable (Rupp et al., 2005). Additional quantitative measures of ageism and knowledge on ageing should be explored in future studies. The IPCP also did not explore attitude changes among older participants, but it should be noted that ageism is stereotyping of the age group, which can be held against any age group and is not limited to the older adults.

Disclosure statement

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