

A Scoping Review on Intergenerational Learning in Urban China

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Abstract:

Introduction: The ageing world gives rise to changing family structures, as well as the way different generations interact with each other. While research on intergenerational relationships and intergenerational learning have started as early as in the 1960s and 1970s in North America and Europe, little is known about scholarly discussions in this field in China.

Purpose: This paper presents an overview of the published journal articles in Chinese on the topic of intergenerational learning in urban China, with the goal of identifying the common themes under discussion, the theoretical frameworks adopted in these studies, and empirical research in this field.

Methods: A scoping review was conducted to look for relevant journal papers published in Chinese between the years 2006-2020. We identified 117 journal papers that fit our criteria and a majority of them were found by using the key words *gedai jiaoyu* (education in skip-generation situations).

Conclusion: The overall quality of the published research is poor in that most authors only provided personal observations and opinions. Almost all studies set their focus on grandparenting and emphasis is often placed on how grandparenting affects young children's growth, with little attention given to its influences on grandparents. Research on intergenerational interactions beyond family settings is almost non-existent. A number of recommendations for future studies are offered at the end of the article.

Key words: intergenerational learning, grandparenting, urban China.

Introduction

The world is ageing. In 2020, 13.5% of the world's whole population is aged 60 years and over (United Nations, 2019a). "Between 2015 and 2030, the number of older persons - those aged 60 years or over - in the world is projected to grow

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by 56 per cent, from 901 million to more than 1.4 billion”, and “by 2050, there will be more people aged 60 or over than adolescents and youth aged 10-24 years (2.1 billion vs. 2.0 billion)” (United Nations, 2015). This can also be reflected by the projected increase of the old-age dependency ratio (OADR) in all regions of the world, as “in 2050, the global OADR is projected to increase to 28 older persons for every 100 working-age persons” (United Nations, 2019b). In China, the ageing population is also growing fast. Life expectancy in China is now 76.7 years (Taxtor, 2021), and “the population of people over 60 years old in China is projected to reach 28% by 2040” (World Health Organizations, 2021).

Ageing societies, coupled with urbanization and other social changes, have brought about new challenges to family structures and how people of different age groups interact with each other. Among these challenges, grandparenting has drawn increasing attention, both globally (Buchanan & Rokirch, 2018) and regionally (Hank & Buber, 2009; Ko & Hank, 2014; Pan, Zhang, & Shi, 2020). Beyond grandparenting as a type of family support, research and programs with a focus intergenerational exchanges have emerged as early as in the 1960s and 1970s in North America and Europe in response to the increasing divide between generations, though early efforts were mostly prompted by problems “such as the difficult integration of immigrants, political issues related to inclusion, the new roles to be played by older persons, and the crisis affecting traditional family solidarity models.” (Findsen & Formosa, 2011, p. 172). Over the years, “intergenerational learning” has become a commonly adopted term to emphasize possibilities and efforts that bring younger and older generations together in shared meaningful activities (Findsen & Formosa, 2011), which can often occur in two broad situations: the transmission of knowledge within families, and that beyond family relationships (Franz & Scheunpflug, 2016).

Arksey and O'Malley (2005) suggest that “scoping studies provide a narrative or descriptive account of available research” (p.30) and they point out the four main reasons for conducting a scoping study are “to examine the extent, range and nature of research activity; to determine the value of undertaking a full systematic review; to summarise and disseminate research findings; and to identify research gaps in the existing literature” (p. 21). Current studies (at least those published in English) on grandparenting and intergenerational relationships in general are mostly situated in western contexts. By conducting a scoping review to scan journal articles in Chinese published in China in the past 15 years that touch upon intergenerational learning in the context of urban China, we aim to provide an overview of existing research on this topic and to reveal the main viewpoints and the theoretical and conceptual frameworks adopted by Chinese scholars and practitioners, as well as the types of empirical studies that have been done.

We find it necessary to first clarify a few key words and phrases we use in this article. A number of scholars have pondered about the differences between

“intergenerational” and “multigenerational” as the two most commonly applied terms to refer to interactions, communication and activities that cover different generations. Villar (2007) believes that “intergenerational” involves “members of two or more generations” and implies “increasing interaction, cooperation to achieve common goals, a mutual influence, and the possibility of change (hopefully, a change that entails improvement)” whereas “multigenerational” is used more broadly though it does not necessarily indicate an interaction nor an influence among different generations (pp. 115-116). More recently, Watts (2017) prefers to use “multigenerational” which mirrors how things turn out to be in real life, and she challenges the phrase “intergenerational learning” as she points out that the term generation is itself embedded with dilemmas and complexity, and that “intergenerational learning” is often accompanied by false dichotomies, such as “younger versus older” or “stereotypical case of young people teaching much older people IT skills” (p. 40).

In our scoping review, we hope to focus on meaningful activities as stressed by Findsen and Formosa (2011), rather than demographic or sociological perspectives on grandparenting that have been covered by other studies (Ko & Hank, 2014; Pan et al., 2020).

1 Scoping review

1.1 Defining scope and selecting articles

In our research, we followed a similar five-step process of scoping review described by Arksey and O’Malley (2005): identifying the research questions; identifying relevant studies; study selection; charting the data; and collating, summarising and reporting the results.

Our review is guided by the following questions:

1. How have Chinese scholars approached the topic of intergenerational/multigenerational learning? And what are some of the main findings in current research and discussions on the topic of intergenerational/multigenerational learning in urban contexts?
2. What are the theories that have been employed or developed in discussing intergenerational/multigenerational learning?
3. What empirical studies have been conducted in the area of inter-/multi-generational learning?

While we set out with the commonly adopted term “intergenerational learning”, we cannot find an equivalent term in Chinese that best translates “intergenerational” in the phrase *intergenerational learning*. The three most similar attributes we choose are *duodai* [多代], *kuadai* [跨代], and *gedai* [隔代]. *Duodai* [多代] is the literal translation of multigenerational; *kuadai* [跨代] implies interactions between different generations; and *gedai* [隔代] can often be used to refer to interactions between grandparents and grandchildren in skip-generation situations. Therefore, we choose *duodai*, *kuadai*, and *gedai* as the

Chinese translation of *multigenerational*, *cross-generational*, and *skip-generation* respectively.

Some scholars (Li, Kaplan, & Thang, 2020) used the term *daiji* [代际] as the translation of *intergenerational*. However, it is more appropriate to translate *daiji* as “between generations”. For example, *daiji guanxi* [代际关系] as “relation between generations”, *daiji chayi* [代际差异] as “differences between generations”, *daiji hudong* [代际互动] as “interactions between generations”. We decide not to treat *daiji* [代际学习] as an equivalent of “intergenerational learning” as it is not a commonly adopted phrase in everyday language in China. Our review focuses on the urban context, acknowledging that skip-generation families or communities in relation to “left-behind children” in rural China has already received much scholarly attention and has been an extensively studied topic. As we set our focus on intergenerational learning as a broad topic, we also decide to leave out contents that focus on grandparenting resulting from family or social problems such as single-parent families.

As we move to the next steps of “identifying relevant studies” and “study selection”, we used two main databases, CNKI (China National Knowledge Infrastructure¹) and Google Scholar, to look for journal articles published in Chinese between the years 2006 and 2020. During our search, we found that CNKI yielded more results than Google Scholar, and that all Google Scholar search results can also be found with CNKI, so we chose CNKI as the main database when searching for relevant articles.

We used the following six phrases as our search terms by combining *duodai* [多代], *kuadai* [跨代], and *gedai* [隔代] as the attributes, in combination with *jiaoyu* [教育] (education) and *xuexi* [学习] (learning).

duodai jiaoyu [多代教育] (multigenerational education)

duodai xuexi [多代学习] (multigenerational learning)

kuadai jiaoyu [跨代教育] (cross-generational education)

kuadai xuexi [跨代学习] (cross-generational learning)

gedai jiaoyu [隔代教育] (education in skip-generation situations)

gedai xuexi [隔代学习] (learning in skip-generation situations)

Similar to the difference between education and learning, in Chinese *jiaoyu* [教育] is used more broadly and is often associated with systematic and formal education (e.g. in school settings) while *xuexi* [学习] is often applied to emphasise process and the active role of learners.

As we scanned through the articles, we found that most papers set the focus on *grandparenting*, and the Chinese term *gedai fuyang* [隔代抚养]

¹ CNKI is a widely used search engine for academic publications in Chinese. It is the largest distributor of academic resources in electronic forms in China and provides access of over 95% published academic resources in Chinese (<https://scholar.cnki.net/home/about>).

(grandparenting) is sometimes used interchangeably with *gedai jiaoyu* [隔代教育]. Therefore, we added *gedai fuyang* [隔代抚养] as the seventh search term. During our first round search, we identified 237 results in total with the seven search phrases, among which the majority of the articles were found by using the search term *gedai jiaoyu* (education in skip-generation situations).

Corresponding to our main goal of reviewing scholarly articles that focus on learning (or interactions at a minimal level) between different generations in urban China, we excluded the following results: 1) publications with a focus on single-parent families and left-behind children in rural areas; 2) publications or cases in Hong Kong or Taiwan or those outside China (since social policies and contexts as well as family structures can be different in these two regions); 3) undergraduate papers, graduate theses, and conference papers (for two reasons: first, we want to focus on journal papers that usually cover similar scopes; second, a quick scan of the conference papers showed that this type of publications lack academic depth and rigour).

By applying the exclusion criteria, we ended up with 153 articles and further deleted nine articles as duplicates from the two search terms (*gedai jiaoyu* and *gedai fuyang*). After three rounds of selection, we settled on 144 articles as we began our review. The search result is elaborated in Table 1.

Table 1

Criteria and results of the first two rounds search with CNKI

<u>Search phrase</u>	<u>1st round (initial results)</u>	<u>Exclusion criteria</u>	<u>2nd round (results after initial filtering)</u>	<u>3rd round (Total number of articles after deleting duplicates)</u>
<i>duodai jiaoyu</i> (multigenerational education)	0	publications with a focus on single- parent families		144
<i>duodai xuexi</i> (multigenerational learning)	0	Publications with a focus on left- behind children in rural area of China		
<i>kuadai jiaoyu</i> (cross-generational education)	0	Publications and cases in Hong Kong/Taiwan/outsi		

<i>kuadai xuexi</i> (cross-generational learning)	1	de China Undergraduate papers or graduate theses	
<i>gedai jiaoyu</i> (education in skip-generation situations)	219	Conference papers	141
<i>gedai xuexi</i> (learning in skip-generation situations)	0		0
<i>gedai fuyang</i> (grandparenting)	17		12

We acknowledge the following limitations as a result of the criteria we adopt when selecting articles. First, we have left out studies and discussions with a focus on intergenerational learning in the Chinese context published in English and other languages. Second, by focusing on urban contexts and by excluding studies that touch upon families with difficult situations, we will not be able to provide a fully comprehensive overview of all types of studies relevant to this topic. However, we believe our selected focus leads us to a reasonable and manageable scope whereas some of the above aspects have already been covered by previous reviews (Li et al., 2020) or can be more thoroughly addressed in future studies.

1.2 Charting the data

During the final round, we read through all the articles and recorded our notes on an excel form, as the process of “charting the data” (Arksey & O’Malley, 2005). In their example of a scoping study that reviews published and unpublished studies on “services to support carers for people with mental health problems”, they recorded information that covers seven aspects: 1) authors, year of publication, study location; 2) intervention type, and comparator (if any), duration of the intervention; 3) study populations (carer group and care recipient group); 4) aims of the study; 5) methodology; 6) outcome measures; 7) important results.

Considering our goals and focuses, we created notes for each article that cover the following sections. First, we extracted the basic information of each paper, including article title, publication year, authors, journal name; second, we noted down key quotations and summarised the main arguments, findings and conclusions; third, we added information in relation to our research focus, including the generations featured in the article and their age range (when

available), and the English translations of the key terms (gedai jiaoyu/gedai fuyang) (when English abstract is provided). During this process, we deleted 27 articles that are not within the scope of this review (for example, articles that briefly mentioned gedai jiaoyu but with a focus on other topics such as family education, only-child family, and separation anxiety among kindergarten kids). As a result, our review analysed 117 articles in total.

In addition, as we read through the articles, we classified the articles into three broad categories based on their main contents and research methods: 1) comments; 2) literature review; and 3) empirical studies. A majority of the articles (93 out of 117) can be classified as comments, mainly consisting of the authors' opinions, comments, and suggestions without solid literature review or well-grounded arguments. We only found four literature review articles that map out current research and views from different scholars. Empirical studies only account for approximately 16% (19 out of 117) of all the articles we reviewed, which can be further broken down into four sub-categories: surveys; cases about product/experience design; cases about courses; and cases about events. Table 2 shows the distribution of the articles in each category.

Table 2

Charting the data (categorization of articles)

<u>Article Type</u>	<u>Sub-Category</u>	<u>Number of Articles</u>	<u>Total Number of Articles</u>
Comments	--	93	117
Literature Review	--	5	
Empirical Studies	Surveys	12	
	Cases about product/experience Design	2	
	Cases about courses	3	
	Cases about events	2	

2 Findings

2.1 Overview

Overall, the quality of the published journal articles is quite concerning. It is worth noting that peer review has only started to be adopted among Chinese journals in the past few decades. Fang, Xu, and Lian (2008) indicated that many Chinese publishing houses have been carrying out “three-level review” following the three rounds of review by the editor, the head of the editorial department and finally by the editor-in-chief. They also called attention to specific problems emerging during the peer review process, including the prevalence of single-blind (instead of double blind) review, low efficiency

caused by management systems during transition to digital platforms, selection and matching process of peer experts, and lack of clear and detailed peer-review guidelines.

Since most journals provide no clear indication of their review process, we decide to refer to journal rankings as one reference point. We resorted to two commonly applied journal indexes (often referred to as “core journals” lists): the first is the “Chinese Social Science Citation Index” (including the main list and the extended list) provided by the Institute for Chinese Social Sciences Research and Assessment, Nanjing University; the second is the “Database of Core Journals in Social Sciences” provided by the Institute of Scientific and Technical Information of China. In total, only three papers (Liu, 2017; Mu, 2017; Zhou, 2017) (published in three different journals) can be found in the two databases of core journals.

The quality of the articles can also be reflected by their lengths. We found that the length of the majority of the articles is between one to four pages. Only 12 out of the 117 articles exceed four pages (including one nine-page article and one ten-page article).

2.2 Grandparenting as a form of intergenerational education

How have Chinese scholars approached the topic of inter-/multi-generational learning? And what are some of the main findings in current research and discussions on the topic of inter-/multi-generational learning?

After reading through all the articles, we found that existing journal articles cannot help us to fully address our first research question. Many authors are actually discussing grandparenting that mainly involves childcare and daily interactions between grandparents and their grandchildren, though they tend to use the term *gedai jiaoyu* [隔代教育] (education in skip-generation situations). 32 articles out of the 117 articles provided an English-version abstract, among which over one-third (13 articles) used “intergeneration(al)” (in most cases, “intergenerational education” is used; one author used “intergenerational family education” and one author used “intergenerational interactive product design”); five articles used “generation-skipping education”; five abstracts used similar phrases as grandparenting (including grandparenting, grandparents’ participation in family education, children reared by grandparents, grandparent-grandchild relationships, child rearing by grandparents); three articles adopted other related terms (“trans-generation education”, “transgenerational education”, and “cross-generation education”); and the rest of the six abstracts included inappropriate translations².

² Generation of education, interval generation education (children's upbringing interval education), grandparents education, the education between non-successive generations, family-removed education, grandparents upbringing.

On the whole, we can notice that most Chinese scholars translate *gedai jiaoyu* [隔代教育] into intergenerational education rather than education in skip-generation situations and that almost all articles confined their discussions on interactions between grandparents and grandchildren within the same family. To avoid confusion, we will use intergenerational education hereafter as the English translation of *gedai jiaoyu* [隔代教育], as it is the phrase adopted by most of the authors. Only three articles (Ding, 2019; Li & Jin, 2016; Zhu, 2019) mentioned the potential of intergenerational education beyond the same household. Both Zhu (2019) and Li and Lin (2016) mention that intergenerational education can involve both family-level and social-level activities. In her case study, Ding (2019) reflected on the effectiveness of the intergenerational learning activities that she designed for her class in a primary school, and mentioned that in the future, more efforts can be made to encourage and support mutual learning between pupils and their own grandparents as well as that between pupils and other elderly people.

Our analysis of the contents further revealed the definition and scope of “intergenerational education” adopted by the scholars, the age groups under discussion, and some of the specific interactions mentioned in the articles. Altogether, we found that 28 articles discussed or quoted definitions of “intergenerational education”. All of these definitions linked “intergenerational education” to grandparenting, either explicitly or implicitly. Some authors use *gedai jiaoyu* as an equivalent of *gedai fuyang* (grandparenting), supplemented by phrases such as childcare, child-rearing, and taking care of children. In addition, most authors indicate that intergenerational education is part of family education, as either substitution or supplementation of parenting. A number of these articles introduced different degrees of grandparents’ participation in childcare and education, roughly between high involvement when parents are mostly absent (in these cases grandchildren live with grandparents) and partial involvement to offer assistance when parents are busy with work. More specifically, Zhu (2013) believes that grandparenting (intergenerational education) can have different layers of meaning, and she summarises that “in a narrow sense, intergenerational education means that grandparents take main responsibility for the caring and educating their grandchildren whereas the parents only temporarily stay with their children on weekends or after being separated from their children for a longer period of time (or parents can even leave everything to the grandparents); in a broad sense, intergenerational education can be divided into the following situations: (1) the child is taken care of by grandparents and parents rarely return home; (2) the child is taken care of by grandparents during the day and by parents during the evening; (3) the child is taken care of by grandparents during week days and by parents during weekends; (4) the child is mainly taken care of by grandparents and parents occasionally show up; (5) the child is taken care of by other friends and or family members” (p. 2).

We have discerned that more attention is paid to children at a younger age. Almost half (57 out of the 117) of the articles focus on grandchildren who are preschoolers; 14 articles set their focus on children in kindergartens or primary schools (among which eight articles touch upon the age group that span across kindergarten and primary schools, and six articles focus specifically on primary school children); only six articles touch upon grandchildren beyond primary school age (among which three focus on middle school students, one across the span from young kids to adults; one from kindergarten to high school, and one on adolescent years); 37 articles discussed grandparenting in general without specifying the age group; and the rest three articles focus primarily on grandparents.

We can conclude that current studies and discussions on the topic of intergenerational education in the Chinese context are often confined to a very narrow scope. This is drastically different from the scope of “intergenerational learning” in European contexts that usually cover both intergenerational interactions within families and “learning processes between different generations in families, communities and workplaces” (Franz & Scheunpflug, 2016, p. 25).

2.3 Viewpoints on grandparenting

While we have not been able to identify any discussions of intergenerational education beyond grandparenting, the 117 articles can still provide a general overview of the main arguments and discussions around intergenerational interactions in the same households.

Almost all the articles that belong to the category of comments follow a similar structure: the author often starts by introducing the context of intergenerational education (or grandparenting) in China, followed by their opinions on its pros and cons (or advantages and challenges). The last part of the article is often dedicated to suggestions of tackling the challenges or improving the current status of grandparenting.

Many authors cited the high percentage of grandparents involved in grandparenting³ and highlighted the trend of increasing levels of engagement of grandparents in taking care of children in China. Apart from left-over children in rural areas due to their parents' migration to big cities for employment, other reasons behind this trend include ageing society, more working mothers, two-child policy, and insufficient numbers of childcare institutions (for early years).

We summarise the mostly commonly mentioned pros and cons of grandparenting below. These views are almost unanimously shared by all the

³ We found a number of sources frequently cited by the authors. However, we were not able to trace the original sources and some of the citations are casual references to magazine articles or online surveys. Therefore, we decided not to include the detailed statistics here.

authors who touched upon this aspect. In terms of the advantages of grandparenting, it was mentioned:

- 1) Grandparents often show more patience when interacting with children since they have more free and leisure time;
- 2) Grandparents have prior experience of child raising and their involvement can help parents to alleviate their pressure (both time-wise and finance-wise);
- 3) Grandparents have strong emotional bonds with their grandchildren and can help tie the whole family together;
- 4) Grandparents often embrace and exhibit some of the positive sides of traditional value and virtue.

Compared with advantages, many authors place more emphasis on the problems and challenges of grandparenting:

- 1) The educational principles and philosophies that most grandparents hold are out-dated and problematic, this can lead to unintended consequences, including
 - a) Grandparents tend to spoil their grandchildren who develop bad habits and become overdependent,
 - b) Grandparenting can hinder children's linguistic and social development (as grandparents have relatively small social circles),
 - c) Grandparenting can inhibit children's creative capacity;
- 2) Grandparenting can cause conflicts in the household and children might be emotionally detached from their parents;
- 3) Grandparents have limited energy due to their old age and their own health situation.

Regarding children's overall cognitive growth, 32 articles mentioned that grandparents tend to prioritise safety while intervening children's development of curiosity and killing their creative potential.

It can also be noted that current discussions on grandparenting pay more attention to its influence on children's growth or family relationships, while few articles (only 12 articles) talk about how grandparenting influences grandparents themselves. Only seven articles touch upon potentially positive impact, mainly how grandparenting can contribute to grandparents' physical and psychological well-being, often by alleviating their sense of loneliness and offering them a sense of achievement. Two articles (Bi & Huang, 2019; Sun, 2017) mentioned negative effects, commenting how grandparenting places pressure on the elderly in terms of their health, financial situations, and social life. Ding (2019) mentioned that her pupils' grandparents learned from their grandchildren how to use smartphones (including WeChat payment, video calls, taxi apps) and desktops (when it comes to online shopping, search engine, reading e-books and watching online TV shows). Only one article (Deng & Sheng, 2019) offers neutral comments on the distinctive needs of the elderly when using intergenerational interactive products (including their capability of using and

adapting to available materials, their distinctive aesthetic preferences, their different creative capabilities when compared to their grandchildren's generation, their attitudes towards technological products, their prior experience and knowledge, their reliance on grandchildren's feedback and how that creates the bond between the two generations). Lu, Song, Liu, Fang, & Zhang (2020) reviewed existing research in the western context that covered both positive and negative effects of grandparenting on both generations. In terms of the grandparents' generation, the author concluded that overall grandparenting can have positive effects: when it comes to physical health, grandparenting offers them more chances to engage in exercises and physical activities, though in some cases (especially when they are involved in intensive care of children under 10 years old) their health condition can be inferior compared to their peers; when it comes to their psychological well-being, grandparents can also benefit from increasing levels of self-efficacy, self-respect and sense of self-worth, though their mental health can be negatively affected when grandparenting causes lower participation in social activities (especially if they are not fully prepared for such transitions).

We identified 58 articles that involve explicit proposals to address the current challenges of grandparenting, suggesting efforts that can be made on a family-level, on an institutional level (e.g. kindergartens and primary schools), and on a social level (including communities and governments). 42 articles mentioned that within the household, parents need to take more initiatives to communicate and coordinate with grandparents so that they can best complement each other. More importantly, parents need to take a leading role when it comes to parenting and family education. In parallel to parents' efforts, grandparents can also take more actions to learn more about updated approaches and principles when it comes to educating children. 29 articles emphasised that educational institutions can play a key role. Most of the suggestions centered around activities, events and lectures that these institutions can run to educate grandparents, or to create opportunities and spaces to facilitate better intergenerational interactions. Nine out of the 29 articles focused on the responsibility of the educational institutions to pay special attention to children in skip-generation families. 17 articles discussed efforts that can be made by the government or other public organisations, ranging from general suggestions along the lines of making new policies (for example, support collaborations between different types of social organisations, setting up relevant regulations, offering financial support, providing longer parental leave) that support grandparenting at a more general level to more specific proposals that cover space (e.g. creating more public spaces for children or that help facilitate interactions between different generations), activities (e.g. designing activities and events to help grandparents and children to interact with each other or for parents and grandparents to learn from each other) and contents (offering lectures, publications, programs, online

content and consulting services that offers guidance and support around parenting, grandparenting and family education).

2.4 Theoretical and conceptual frameworks

What are the theories that have been employed or developed in discussing inter-/multi-generational learning?

As previously mentioned, the overall quality of the selected articles is relatively low, and given the short length of the articles, few authors have fully developed their arguments or supported their views with solid theoretical foundations. Kuehne and Melville (2014), in their scoping review of theories applied in intergenerational program research, coded the use of theory into four types: 1) theory within the article’s literature review to provide background information to or rationale for the study and, possibly, the methodology of the study; 2) theory used in the discussion section to explain or support the program and/or study results; 3) theory used to inform program development; 4) the article suggests that theory is being used (but in fact, the article presents only a. grounded theory methods to analyse data; b. concepts/models (as theories); or c. purely theoretical discussion).

We only found 14 articles that applied theories and conceptual frameworks, which are incorporated in four different ways: 1) as background information or part of the context; 2) mentioned in the section that offers comments/suggestions; 3) as part of the literature review; 4) as part of the methodology or research approach. The details are provided in Table 3.

Table 3

The Use of Theories and Conceptual Frameworks

<u>Article</u>	<u>Cited Theory/ Conceptual Framework/ Authors</u>	<u>Background information/ part of the context</u>	<u>Mentioned in the section that offers comments/ suggestions</u>	<u>Part of the literature review</u>	<u>Part of the methodology/ research approach</u>
Li, 2019	Symbiotic Theory	Y	Y		
Li & Jin, 2016	Symbiotic Theory		Y		
Wang, 2012	Symbiotic Theory		Y	Y	
Deng & Sheng, 2019	Peer Assisted Learning; Jean Piaget’s Theory of Cognitive Development	Y			
Hu & Chen,	Service Design	Y	Y	Y	Y

2019					
Zhao & Chen, 2017	Participatory Curriculum Development (Rogers Alan, and Elsa Roberts Auerbach)	Y		Y	Y
Wu, 2015	Basil Bernstein's Theory of Language Codes (differentiation between elaborated language codes and restricted language codes)		Y	Y	
Yang, 2013	Erik Erickson's Stages of Psychosocial Development; Robert J. Havighurst's Six Developmental Stages	Y			
Yang & Xia	Jean Piaget's Theory of Cognitive Development; John Dewey (education is life itself); Vasyl Sukhomlynsky (children should start reading as early as possible); Lev Vygotsky's Zone of Proximal Development	Y	Y		
Wang, 2012	Erik Erickson's Stages of Psychosocial Development			Y	
Xie, 2008	Functionalism (Sociology): Herbert Spencer, Emile Durkheim, Bronislaw Malinowski, A.R. Radcliffe-Brown, Talcott Parsons,	Y		Y	

Lu et al., 2020	Robert K. Merton Biological Evolution Theory; Social Exchange Theory; Family System Theory; Bourdieu's Social Reproduction Theory; Role Strain and Role Enhancement Theory	Y
Zhang, 2020	Social Work Service	Y
Ai, 2020	Social Work Service	Y

The theories that the authors chose vary greatly, among which educational and psychological theories are more frequently adopted, especially when it comes to discussions of children's learning (including more specific scenarios such as reading). In some articles, theories in the area of sociology and biology are borrowed to explain the rationale of grandparenting and the role it might and should play in families.

In most cases, the authors only briefly mentioned an author's name and the relevant theories or concepts as part of background information or to support the comments and suggestions section. Five articles included theory as part of the literature review, and two articles (Hu & Chen, 2019; Zhao & Chen, 2017) applied theories as both conceptual and methodological frameworks.

3 Empirical studies

What empirical studies have been conducted in the area of inter-/multi-generational learning?

We found 19 articles (see Table 2) that included empirical aspects, among which 12 articles reported results from surveys as summarised in Table 4 (Articles no.069 and no. 073 discuss the same survey).

Table 4

Articles that report survey results

<u>Article</u>	<u>Survey Date</u>	<u>Targeted Group</u>	<u>Survey Scale (number of effective surveys) and Respondents</u>	<u>Survey Focus</u>	<u>Conclusion</u>
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Chen & Gao, 2019	NA	Students in primary schools (Year 1-4); *average age of their grandparents: 66.5	197 pairs of parents and grandparents	Demographic information, educational approaches and philosophy, perception of generation gap and actions taken	Grandparents and parents have different views and expectations when it comes to educating children. When disagreement occurs, they adopt a variety of approaches (including communicating and compromising with each other, seeking help from friends or online resources, and listening to parents' ideas) though in most cases the disputes are not settled as each insists on their own opinions.
Zhang & Liu, 2017	NA	Not mentioned (the article implies preschool kids)	93 parents and 91 grandparents	Demographic and grandparenting information, general views on early childhood family education, parents view on grandparenting, grandparents' view on children's psychological development	Grandparents' educational level is often lower than that of parents. Parents trust grandparenting but have different opinions on how to educate children and worry that grandparenting can affect parent-child relationship. Over half of the children under the care of grandparents are not as outgoing as those taken care by parents and tend to be less independent. 76.9% of the grandparents would stop children from engaging in exploratory activities. 60% of the grandparents believe language development is essential to children's

					growth, but have no idea of how they can offer help.
Liu, Xu, Guo, & Liu, 2016	NA	Kindergarten children (3-6 years old) in two kindergartens in Chuzhou, Anhui province	187 parents	Children's social development scale	Children in skip-generation family exhibit lower levels of social development than those taken care by parents (though no obvious disparity is found); grandparenting can lead to children's overdependence they tend to spoil children
Huang & Chi, 2016	2015	Not mentioned	1946 online respondents (without age focus)	Views and knowledge on grandparenting	85.2% of the respondents believe grandparenting is very common; 76.7% trace the reason to parents' employment; 42.5% of the respondents hope that regulations can be made to offer longer parental leave.
Luo, 2015; Luo & Wan, 2014 (reported on the same survey)	2013	Middle school students in four middle schools located in two cities in Henan and Guang province respectively	166 groups of students and their parents and grandparents	The survey is designed based on 12 semi-structured focus group discussions organised by head teachers with parents and grandparents respectively. Survey included Likert scale of the following aspects: family relationships, family educational	Grandparenting play a key and effective role in children's education. Overall, children are closer to their parents than grandparents; parents and grandparents share similar educational philosophy; parents score higher than grandparents in educational philosophy, contents and methods.
		*grandparents' age range between 53-92 (mostly between 63-74)			

				philosophy, contents and methods	
Abulizi, 2016	NA	Kindergarten kids in five kindergartens in the city of Urumqi, Xinjiang province	500 grandparents	Information around grandparenting, grandparents' willingness to be involved in grandparenting, their education level and children's development	Overall, children spend more time with grandparents than with their parents, and grandparents love to take care of their grandchildren. Grandparents usually have low educational levels. Children tend to be spoiled so they tend to be more self- centered, exhibiting emotional instability, poor communication skills, aggressive behaviours and overdependence.
Zhu, Wang, & Zhang, 2013	NA	Two primary schools (Year 4-6) in Chuzhou, Anhui Province (one in rural area, and one in urban area)	266 pairs of children and their grandparents	Learning motivation diagnostic test (MAAT) scale	Grandparenting is more commonly found in rural areas. Overall children in skip- generation families show lower motivation in learning. Children's levels of learning motivation are higher in urban areas than in rural areas; grandparents' trust, encouragement, and care contribute positively to children's motivation in learning while their negligence, control, and over- constraint contribute negatively to children's motivation in learning.
Li, 2006	2003- 2004	Middle schools,	11 959 parents	Demographic information,	Grandparenting is not too common among

		primary schools, and kindergartens in Shanghai		children's physical and psychological development (Likert scale), family education philosophy and actions	families with children in kindergartens, primary schools and middle schools (less than 10% and decreases as children grow up); compared to parents, grandparents hold traditional values and pay more attention to children's social opportunities; children taken care by grandparents tend to exhibit three main characters: they work harder; they are not afraid of difficulties, and they are more aggressive.
Zhao, Lin, Zhu, & Guo, 2020	NA	Five kindergartens in Ningbo, Zhejiang province	443 parents	Evaluating children's mental health status after kindergartens delayed opening due to Covid	Children's mental health status is not optimistic, especially when they are confined in households for long periods; children in households with grandparenting tend to develop higher social adaptation when returning to kindergartens.
Kong & Zhang, 2020	NA	8 kindergartens in rural areas and 6 kindergartens in urban areas in Guangyuan, Sichuan province	1205 parents	Current status of family education	98% of the children live with grandparents. Grandparents have lower educational levels and low income and often embrace outdated educational philosophy (either believing in physical discipline or tending to over spoil the children)

Cao & Ding, 2015	May-Aug 2013	Kindergartens in Liu'an city, Anhui province	1003 parents (or main caregiver)	The Conners Comprehensive Behaviour Rating Scale (CBRS), demographic information and family education	Grandparenting only account for 29.41% among all respondents (considerably lower than other areas in China); boys who are 3-6 years olds show higher rate of behaviour problems in skip-generation households and girls who are 6 years old show higher rate of behaviour problems in skip-generation households (the author interpreted this as a result of preference for male children). Grandparents often tend to prioritise childcare over education and neglect children's mental health and personality development.
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It can be noted that six out of these ten surveys covered general information around grandparenting and their views on educating children, often in comparison with parents' views and children's behaviours. Three surveys have more specific focuses, mainly to evaluate how children might be affected by grandparenting, including one on social development, one on learning motivation and one on children's re-adaptation to kindergarten after quarantine/lockdown at home during the Covid-19 pandemic. One of the surveys (2020) sent out to parents has a broader focus on the status of family education. Among the ten surveys, only five included grandparents' direct responses (together with parents or children's answers themselves or both), and the others were mainly directed towards parents, so we can tell that the results from these four surveys can only partially reflect the roles and influences of grandparenting. It is inappropriate to compare these surveys as they were each designed with different purposes, and were sent to different areas in China spanning across different years targeting different age groups. We can only draw the conclusion that, generally speaking, most authors tend to focus on the differences between parents and grandparents when it comes to bringing up children and how these

differences affect children's growth and development (both physically and mentally).

Apart from surveys, we identified seven studies that cover cases in relation to grandparenting. Zhuo (2019) and Ding (2019) both cover the authors' reflection on the events they designed and hosted in their own primary schools to foster interactions between the pupils and their grandparents. Ding (2019) was teaching a class of 45 students among whom 16 students were raised by grandparents. The teacher organised a festival event during which she invited 12 grandparents (all grandmothers) to the school. She also designed activities to involve the grandparents during winter holidays with the aim to promote mutual learning between the two generations. Zhuo (2019) was teaching a class of 53 pupils (77% of the pupils are mostly taken care by grandparents and 85% of the pupils live with their grandparents) argued that traditional festivals (including the double ninth festival, winter solstice and spring festival) can be an opportunity to bring the two generations together, and she described the activities she designed for students to get to know their grandparents, and for the two generations to participate and collaborate in one activity (e.g. handcraft, cooking) and to learn from each other during the Spring Festival. While the two articles only covered the authors' own experience within one class, both articles offer detailed information of the activity design and the authors' reflections on what worked well and the lessons they learned.

The three articles, Yu and Liu (2009), Zhao and Chen (2017), and Zhu (2019) all introduced courses developed by universities and institutions in Shanghai to educate grandparents on childcare and family education, which is a common approach advocated by many scholars to address the current challenges of grandparenting: educating grandparents on the topic of grandparenting through the form of courses. From the authors' descriptions, we can tell that these courses are often taught in lecture style and usually only involve grandparents. Yu and Liu (2009) introduced one of the courses that the Shanghai University for the Elderly started to offer in Mar 2007, claiming to be the first of this kind in Shanghai. Since then, it was offered four times (each class recruited 10 students) to senior citizens by 2009 when the article was published. Both 102 and 311 are studies conducted by researchers at the Institute of Vocational and Adult Education, East China Normal University (in Shanghai). Zhao and Chen (2017) discussed how to use the participatory curriculum development approach to develop a course focusing on grandparenting that involves multiple stakeholders, including senior students, scholars, and principals of universities for the elderly (no further details of the course content were provided). Zhu (2019) provided details on how the teaching team developed the course Evidence-based Parenting and Intergenerational Learning, including the preparation stage (course description and curricula design), implementation and evaluation of the course, and reflections and thoughts on future developments.

The course (aimed at serving 20-30 senior citizens each time) was designed to offer advice to grandparents who took care of younger preschool children. Lastly, two articles (Deng & Shen, 2019; Hu & Chen, 2019) demonstrated how design can play a role in intergenerational relationships (primarily focusing on preschool children and their grandparents). Deng and Shen (2019) adopted the perspective of mutual learning and analysed the specific needs of both generations as they interact with each other, namely physical exercises, cognitive development, emotional engagement and social development. The article briefly reviewed four design cases to illustrate how and why these designs can be intergenerationally friendly: 1) D. Ship, a public fitness equipment (designed by Huishan MA, Jiangnan university) that features coordination. Grandparents can initiate the movement of the ships by pulling the puller to exercise the upper body while children can have fun enjoying the movement of the ship. The design requires the engagement and coordination of both generations; 2) Lattjo (developed by IKEA) as a role play storytelling game that encourages family members of different ages to bring their own props and players can use the provided stories or develop their own stories. It is designed with an aim to strengthen the emotional bond between family members; 3) Five-minute finger exercise (in the form of a guidebook) as an educational game that allows grandparents to keep fit as they play games with their grandchildren with fingers (including singer songs and telling stories with fingers); 4) Grandparent-grandchild activity set (no details given) designed to improve communication between the two generations. It is a task-based card set that encourages participants to document the results as they complete each task. Hu and Chen (2019) reviewed the case of a community bookstore with the lens of service design in the context of intergenerational education. The research group started to explore the needs of elderly people and children by conducting observations and interviews in three bookstores in the city of Guangzhou, followed by in-depth interviews with 11 families living in the same neighborhood. Sketches of the floor plan design of an intergenerationally-friendly bookstore are provided at the end of the article.

In summary, current studies with empirical elements are still scarce in the field of intergenerational learning. A majority of these empirical studies are surveys (self-reported questionnaires) with a focus on demographic information and quantitative measurement. Activities and designs centering on intergenerational interactions only started to emerge as the four articles in these two sub-groups were all published in 2019.

4 Discussion

While we are not able to achieve our original goal of mapping out research published in Chinese on the topic of intergenerational learning in the context of urban China, our search terms led us to the identification of 117 journal articles with a focus on grandparenting in the context of family education. We have not

found any studies that cover the interactions between older and younger generations outside the same household, and only three authors mentioned and acknowledged the potential of further research in this aspect. We echo Li et al.'s (2020) comment that current research in the field of intergenerational relationship is only in its infancy stage and that intergenerational interactions and exchanges are "still commonly perceived within the family realm" (p. 10). Li et al.'s (2020) recent study using a web search method has shown that intergenerational programs often place more emphasis on the older generation. In comparison, our research has revealed that most discussions on grandparenting focus on cases with younger children (often in the preschool period), indicating an emphasis on childcare. While both the advantages and challenges (or problems) of grandparenting have been covered, less attention has been given to how this might influence grandparents themselves, not to mention mutual benefits that might arise during the interactions between the two generations.

In our review, we have found that the overall quality of the published journal articles is concerning and a majority of the articles we identified are written in the style of comments supported only with personal observations and suggestions without systematic review, theoretical framework or rigorous empirical research. Only 14 articles touched upon theories or conceptual frameworks, though on most occasions the authors only briefly mentioned or quoted them as background information, or to support their own comments and suggestions. We found 19 articles that include empirical elements among which 12 are quantitative surveys. The surveys were conducted in different years with different scales, targeted at different age groups in different regions in China. What we can tell from survey studies is that scholars are most interested in the differences between styles of parenting and grandparenting and how they might influence children's growth. The rest of the seven articles that include empirical elements introduce courses targeting grandparents, events with an aim to foster interactions between primary school pupils and their grandparents, and product and experience design that focus on intergenerational interactions.

We identified six articles in which the authors reflected on the landscape of current research on the topic of intergenerational education and offered suggestions on future directions. Four articles (Chen, Zhang, & Chen, 2014; Huang & Chen, 2007; Jian, Peng, Wei, & Zhi, 2013; Mao & Zhang, 2018) mentioned lack of empirical research that focus on the Chinese context, and two articles (Duan & Li, 2012, Huang & Chen, 2007) suggested that more research needs to be done to investigate the impact on grandparents. Three authors (Huang & Chen, 2007; Lu et al., 2020; Mao & Zhang, 2018) stressed the importance of focusing on the heterogeneous nature of intergenerational education. Among the six articles, two of which (Huang & Chen, 2007; Lu et al., 2020) talked about the distinction between urban and rural contexts. Meanwhile, Lu et al. (2020) call for more research that takes into consideration the possible

differences when it comes to social classes, ethnic groups, levels of grandparents' involvement, age groups of grandchildren, families with both parents and single parent, single-child families and multiple-children families. Chen et al. (2014) more specifically advocate for more studies with a focus on 4-2-1 families (four grandparents, two parents, and only one child) with younger parents (who were born after the 1980s).

Based on our findings and our awareness of the limitation of the scope of the current review, we have a number of recommendations for future research directions in the field of intergenerational learning in the Chinese context. First, it is essential to define and clarify the key terms we use and what they actually mean, especially when it comes to the Chinese version of intergenerational/cross-generational/multi-generational. Since the Chinese language does not provide exact translations, making clear distinctions and identifying the nuanced differences between the different terms can be the first step. We also agree with Watts (2017) that as we explore intergenerational learning, we need to rethink "what we mean by education and learning" (p. 49).

Second, we strongly advocate for strengthening the rigor of research in this field by embedding theoretical frameworks throughout the studies. We agree with Kuehne and Melville's (2014) argument that researchers can make more contributions in terms of exploring "the value and composition of a uniquely intergenerational theory" (p. 337) as well as Fitzpatrick's (2019) suggestion of framing and establishing intergenerational learning as a distinctive pedagogical approach supported by more empirical research. In addition, we propose that research on intergenerational learning in the Chinese context might need to adjust and cater to its distinctive social, historical, and cultural contexts.

Third, in terms of empirical research, researchers can create more value by conducting and documenting well designed study with diversified methods instead of only sharing anecdotal stories (Jarrott, 2011; Li et al., 2020) or hosting one-off events. To achieve this, we believe it would be helpful to begin with "participant- centred education in small groups" in a non-formal learning environment, guided by a carefully designed process of planning, implementation and evaluation (Simándi, 2018). We also share the views held by other scholars (Bernhold & Giles, 2017; Li et al., 2020; Watts, 2017) that research into intergenerational relations and interactions can diversify their research methods. Ward (1999), for example, contends that in the field of intergenerational research we need to apply more qualitative research, and in particular ethnographic approaches rooted in anthropology. Elsewhere, Bernhold and Giles (2017) call for more studies that adopt longitudinal methodologies. Biesta et al. (2011) demonstrates the potential of applying narrative methods (combination of life-history and interpretative lifecourse research) when exploring interrelationships between learning, identity and agency in the lifecourse.

In the past few decades, Chinese society has undergone dramatic social changes, which have been and will be reflected in the life experiences of the past two to three generations, leading to greater disparity across the generations when studies are conducted at different life stages. Apart from developing theories of intergenerational learning, it would also be of great value to capture and track intergenerational interactions from the present moments onwards. Since existing programs are not well-documented and are often conducted as one-off events (Li et al., 2020), the most pressing task might be to carry out more action research and design research in this field to first create opportunities for possible intergenerational interactions and learning beyond the household contexts in this contemporary world when different generations have been increasingly segregated institutionally and spatially (Gratton & Scott, 2017; Vanderback & Worth, 2015).

Conclusions

As Gratton and Scott (2017) noted, longer life brings new possibilities that demand a reconceptualization of a three stage life composed of education, career, and retirement. When living a multi-stage life, they suggest that we will experience increasingly “age-agnostic” life stages and witness major changes in inter-generational dynamics. These new changes in the twenty-first century, coupled with other social changes as well as the family structure, traditional values and the unique socio-cultural context and policy in China, pose great challenges to research on intergenerational learning. That being said, these challenges bring new opportunities for studies in this broad field, calling for further scrutiny into specific contexts and topics when it comes to theoretical building and empirical research.

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