

The Impact of a Gerontology Course and a Service-Learning Program on College Students' Attitudes Toward People With Dementia

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Abstract

We examined the effects of a gerontology course and an intergenerational service-learning project for people with dementia (PWD) on three dimensions of students' attitudes including attitudes toward older people, community service for older people, and working with PWD. Data consisted of a combination of pretest/posttest survey and review of journals that students maintained during the service-learning project. Results indicated that students who completed the gerontology course, and those who completed both the course and the service-learning project, reported significantly more positive attitudes toward older adults, whereas students in the course only had significantly less positive attitudes about working with PWD, and those in the other courses (sociology) showed no change in their attitudes. Students' journals are replete with reports of the satisfaction they derived from their experiences. The findings highlight opportunities and challenges that should be considered in future intergenerational service-learning programs and gerontological education.

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Since Robert Butler first introduced the concept of ageism in 1969, many studies have focused on ageism and its concomitant consequences (Butler, 1989), specifically intergenerational conflict (Knapp & Stubblefield, 2000; Palmore, 1999). In accordance with population aging, the percentage of individuals above age 65 with Alzheimer's disease is projected to rise from the current estimate of 5.1 million to 11 to 16 million by 2050 (Alzheimer's Association, 2010; Hebert, Scherr, Bienias, Bennett, & Evans, 2003). Given that many members of younger cohorts may have negative attitudes not only toward old age but also toward older adults with cognitive impairments such as dementia, ageism toward this subpopulation is a public concern as American society experiences population aging. Intergenerational service learning has the potential to overcome some of the negative consequences of ageism.

Service learning is defined as "a form of experiential education in which students become actively engaged in a community service-project that helps them connect theory to practice" (Natvig, 2007, p. 575). Intergenerational service-learning programs are designed in part to combat younger adults' negative attitudes toward older adults and oftentimes are a required or optional component of gerontological course work. Evaluations of the effects of intergenerational service-learning programs showed mixed results (Blieszner & Artale, 2001; Bringle & Kremer, 1993; Brown & Roodin, 2001; Dorfman, Murty, Ingram, & Evans, 2002; Pillemer & Schultz, 2002). In part, these mixed findings might reflect the great variability across programs in areas such as program design, contents, duration, skills/knowledge and time commitment required, and characteristics of the students and the older participants. In addition, it may also reflect the variability in the communities and the educational institutions where the service-learning program takes place.

On one hand, there is evidence that students who participated in intergenerational service-learning programs demonstrated improved understanding about old age, recognized the importance of community service for older adults, and subsequently lessened their negative attitudes toward older adults (Bringle & Kremer, 1993; Dorfman, Murty, Ingram, Evans, & Power, 2004; Eyler, Giles, Stenson, & Gray, 2001). Students reported greater comfort in being around older people and more appreciation of the interindividual variability among groups of older people (Blieszner & Artale, 2001). In addition, intergenerational service learning is associated with academic benefits such as better comprehension of course content and higher grades in gerontology courses (Eyler et al., 2001; Stukas,

Clary, & Snyder, 1999). Intergenerational service learning was also reported to be helpful in the career decision-making process among college students (Natvig, 2007; Nichols & Monard, 2001).

On the other hand, Blieszner and Artale (2001) did not find beneficial effects of intergenerational service-learning programs on students' attitudes about social responsibility and/or civic engagement. Some students even reported more negative perceptions toward working with older adults or about their own aging (Dorfman et al., 2004). Thus, unsatisfying service-learning experiences with challenging tasks may even increase negative images about older adults and old age (Fruhauf, Jarrott, & Lambert-Shute, 2004; Robinson & Cubit, 2007). For example, unfamiliar and demanding tasks at dementia care settings can leave students with feelings of hesitation and discomfort when interacting with older adults with dementia (Blieszner & Artale, 2001). These mixed findings suggest that the associations between intergenerational service learning, attitudes toward older adults, and old age are complex. Therefore, research should carefully examine specific components of service-learning programs and attitudinal and behavioral outcomes (Cavanaugh, 2001).

Although dozens of studies examined the effects of intergenerational service-learning programs in a wide range of disciplines with diverse participants in recent years, significantly less is known about the effects of intergenerational service learning with persons with dementia (PWD) on students' attitudes toward older adults, dementia, and working with people who have dementia (Mabry, 1998). To date, three studies specifically examined college students' intergenerational service-learning experiences with PWD (Blieszner & Artale, 2001; Fruhauf et al., 2004; Lambert-Shute, Jarrott, & Fruhauf, 2004). These studies examined college students who were enrolled in aging-related courses (e.g., Issues in Aging; Sociology of Aging) that offered an option to participate in intergenerational service learning with PWD. Consistent with evaluations of intergenerational service learning with other populations of older adults, the effects of these programs were mixed. For example, Blieszner and Artale (2001) failed to find significant differences in students' quantitatively assessed attitudes preparticipation and postparticipation, whereas the students' response to open-ended questions clearly showed positive effects including better understanding about the course material, more positive attitudes toward aging, and perceived personal development after the intergenerational service-learning experience. Across the three evaluations, students demonstrated feelings of anxiety, worry, discomfort, and/or insecurity. Blieszner and Artale (2001), Fruhauf et al. (2004), and Lambert-Shute et al. (2004) attribute this in part to most college students' lack of knowledge and experience working with older adults with dementia. Based on their findings, these researchers emphasized that successful intergenerational service-learning programs that include people

with dementia should take into account students' prior experience with individuals who have dementia, incorporate proper training as part of the experience, and provide ongoing guidance/instruction and support to students from experienced staff members.

Given the estimated increase in the number of PWD in upcoming decades, it is critical to determine how to promote individuals' understanding of, positive attitudes toward and desire to work with, individuals with dementia. This knowledge has implications that extend beyond intergenerational service learning in postsecondary environments to include lifelong learning (i.e., formal learning or continuous learning mainly for occupational/economic benefits) and life-wide learning (i.e., informal learning; Aspin & Chapman, 2000; Desjardins, 2003; Glastra, Hake, & Schedler, 2004) that is offered in a variety of educational and community settings. Ultimately, this knowledge has the potential to inform intergenerational relationships at home and in the work place and to improve the quality of informal and formal care that individuals with dementia receive (Glastra et al., 2004).

The purpose of this research is to contribute to the existing literature on intergenerational service-learning programs with PWD. We systematically examined the effects of a gerontology course and an intergenerational service-learning art project for people with dementia on students' attitudes toward aging and working with older adults with cognitive impairments. Specifically, we analyzed (a) pretest data from the beginning of the semester to document students' attitudes prior to taking a gerontology course, (b) pretest/posttest data to document changes in students' attitudes over the course of the semester, separately for those who participated in the intergenerational service-learning project and those who did not (a small comparison group of students enrolled in a sociology course that did not emphasize aging), and (c) weekly journals written by the students who participated in the service-learning program to better understand the impact of the program.

Method

This study analyzed the pretest and posttest survey data from students at one university in the Midwest to examine the effects of gerontology education and/or service learning in an intergenerational art program (i.e., Opening Minds through Art [OMA], which is described in the following section) on their three dimensions of attitudes toward PWD, which were derived from an existing attitudinal scale (i.e., Student Assisted Independent Living (SAIL) service-learning evaluation questionnaire, which is described later in this section). In addition, the journals of students who participated in OMA program were analyzed to

explore possible explanations of changes in students' attitudes over the course of the semester.

Service-Learning Program—OMA

OMA program was founded in 2007 based on a growing body of empirical evidence that creative expression improves the physical and psychological well-being of people with dementia (Kinney & Rentz, 2005; Pepin & Kosloski, 2006; Rowe, Fowell, & Montgomery, 2006; Rusted, Sheppard, & Waller, 2006). It is grounded in "person-centered" ethics (Kitwood, 1997, 1998; Post, 1995) and has a specific methodology that ensures failure-free creative experiences. The specific goals of OMA are to (a) promote the social engagement, autonomy, and dignity of PWD by providing creative self-expression opportunities, (b) provide staff and volunteers with opportunities to build close relationships with PWD, (c) show the public the creative self-expression capacities of PWD through exhibitions of their artwork, and (d) contribute to the scholarly literature on dementia care and the arts.

The intergenerational weekly art program is implemented in group sessions at two continuing care retirement communities. As many as a dozen people with dementia do art with the assistance of trained staff members and university student volunteers who work with them on a one-to-one basis. The art-making sessions culminate in a gallery exhibition at the end of each semester. The exhibition celebrates the artists' accomplishments; at the same time, it educates the public about the creative capacities of people with dementia.

Participants

Data for this study came from three groups of undergraduate students who completed presurveys and postsurveys: students enrolled in gerontology courses, students enrolled in either introductory or intermediate sociology courses (none of sociology courses focused on aging), and students enrolled in gerontology courses who also participated in the OMA service-learning program. Two hundred twenty undergraduate students who were enrolled in an introductory gerontology course titled "Aging in American Society" completed the surveys (approximately 180 students were enrolled in six courses each semester). These courses were offered in the spring and fall semesters of 2009 at a state university in the Midwest. The course provides an overview of the aging process and emphasizes typical aspects of aging from a multidisciplinary perspective, the social context of aging, and societal responses to an aging population. We also collected pretest/posttest data from 67 students enrolled in four sociology courses at the same

university in the fall semester of 2009 to serve as a comparison group for the gerontology course data. All of these students were given the option to participate in OMA service-learning program at one of two long-term care facilities. These facilities are continued care retirement communities where dedicated areas/programs are provided for people with dementia. Whereas all student applicants ($n = 33$) were able to participate in OMA program in the spring semester 2009, a selection process was employed due to limited volunteer positions available for the fall semester 2009. OMA staff members read essays submitted by 47 applicants and selected 22 of them based on the criteria including art/music background, relevant volunteer experience, vocational interest, academic interest, experience with PWD, and overall "tone" of the essay. In total, 55 gerontology students participated in the OMA program at these two sites during the study period, 19 of whom completed the presurveys and postsurveys for this study. No students in sociology courses participated in the OMA program in this study, despite an invitation to OMA program in the beginning of semester.

In this study, gerontology students who participated in the service-learning program were mostly female and had more experience volunteering at nursing homes and working with PWD when compared with the other two groups. Sociology students who completed both pretests and posttests had more experience with family members or friends who have dementia than the other two groups. In general, the participants in this study were diverse in terms of academic years and majors. The use of a unique identification code composed of a portion of participants' birth date and phone number allowed us to match pretest and posttest surveys and prevented students from completing more than one survey.

Procedures

After obtaining Institutional Review Board (IRB) approval for data collection, students were asked to voluntarily complete the pretest survey by the researchers during a short, in-class presentation for recruiting OMA volunteers in the second or third week of the semester. At the end of each semester, the researchers revisited the same classes to conduct the posttest survey. In addition to completing the pretest and posttest surveys, all students who participated in OMA were also asked to keep journals that documented their experiences and impressions throughout the service-learning program. Specific journal prompts were given to these students (see the following section for more details).

Data

Assessment of students' attitudes. To assess students' attitudes toward older adults and people with dementia, we used the SAIL service-learning evaluation

questionnaire (Pillemer & Schultz, 2002). The SAIL questionnaire has been used in previous studies that focus on aging-related service-learning programs for undergraduate students (e.g., Dorfman et al., 2004). The questionnaire includes 29 questions that address attitudes toward four dimensions: (a) older adults, (b) community service, (c) older adults with chronic diseases, and (d) working with geriatric patients and individuals with chronic diseases. Each SAIL item is rated on a 4-point Likert-type scale (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, 4 = *strongly agree*). For use in our research, we substituted the term *dementia* for the term *chronic illness* in items that pertain to older adults with chronic diseases. In addition, we collected basic demographic information (e.g., gender, age group) as well as volunteer-related information (e.g., experience working with older adults). Thirteen items were reverse coded before composite scores for each dimension were created, with higher scores indicative of more positive attitudes. In addition, three questions were omitted due to the contents, which were not conceptually compatible with other questions in the same dimension (e.g., “A problem with having a job working with older people who have dementia is that it is hard to make enough money.”). Although Pillemer and Schultz (2002) did not report reliability data for the original items, our preliminary data analysis showed that Cronbach’s alpha ranged from .14 to .63 for pretest and .24 to .68 for posttest.

Given these low reliability coefficients, we undertook subsequent analytic work on the scale. We eliminated one item from each of the four scale dimensions for conceptual reasons (e.g., “Most older people spend too much time prying into the affairs of others.”). Second, exploratory factor analysis using Maximum Likelihood Estimation and Oblique (Promax) rotation, which allows factors to correlate, was conducted on the remaining 25 questions for the pretest data. Data from all students who were in gerontology courses and completed a pretest ($n = 429$) were included in exploratory factor analysis. We used Promax rotation method because our preliminary analysis showed moderate correlations between factors. As a result, three factors were identified (eigenvalue greater than 1.0) and the standardized regression coefficients ranged from .33 to .69. For exploratory factor analysis with Promax rotation method, examining the standardized regression coefficient is more appropriate as it represents the individual and nonredundant contribution of each factor to predict the given items. We used the standardized regression coefficient of .30 as a cutoff line based on a comparable suggested guideline for factor loadings (Costello & Osborne, 2005). The result of this analysis revealed three factors or dimensions of attitudes toward PWD: (a) General attitudes toward older people ($\alpha = .64$), (b) Attitudes toward community service for older people ($\alpha = .69$), and (c) Attitudes toward working with persons with dementia ($\alpha = .66$). Corresponding posttest alphas were .67, .76, and .66, respectively. The questions and standardized regression coefficients are shown in Table 1.

Table 1. The Selected Items From the Student Assisted Independent Living (SAIL) Questionnaire and Standardized Regression Coefficients From the Exploratory Factor Analysis Using Maximum Likelihood Estimation and Oblique (Promax) Rotation ($n = 429$)

Factors	Items	Standardized regression coefficient
Factor 1 (General attitudes toward older people)	Most older people are set in their ways and unable to change. ^a	0.37
	Most older people are not isolated.	0.36
	Older people are apt to complain. ^a	0.45
	Older people can learn new things just as well as younger people can.	0.38
	Older people are often against needed reform in our society because they want to hang on to the past. ^a	0.44
	Most older people are in good health.	0.49
	In most jobs, older people can perform as well as younger people.	0.50
Factor 2 (Attitudes toward community service for older people)	It is the responsibility of the community to take care of older people who cannot take care of themselves.	0.44
	I am not very interested in working on problems in the community. ^a	0.36
	It is important to help older people in general, whether you know them personally or not.	0.52
	It does not make sense to volunteer because you do not get paid for it. ^a	0.46
	Careers in service to older people can be more rewarding than other careers.	0.32
	People who work with older people who have dementia have interesting jobs.	0.49

(continued)

Table 1. (continued)

Factors	Items	Standardized regression coefficient
	Working with older people who have dementia is a very worthwhile occupation.	0.64
	Working with older people who have dementia is a respectable occupation.	0.51
Factor 3 (Attitudes toward working with persons with dementia)	I am good at helping older people.	0.32
	I want to work in a career helping older people.	0.36
	Working with older people who have dementia is depressing. ^a	0.54
	It would be very stressful to work with older people who have dementia. ^a	0.46
	I do not have the ability to work successfully with older people who have dementia. ^a	0.66

Note. Only items with standardized regression coefficient greater than 0.30 were retained. Only students who were in gerontology courses were included. All students who completed the pretest were included in the analysis ($n = 429$).

a. Reverse coded.

Factors 1, 2, and 3 included seven items (ranging from 7 to 28), eight items (ranging from 8 to 32), and five items (ranging from 5 to 20), respectively.

Open-ended comments from students' journals. As previously indicated, in addition to completing the pretest and posttest attitudinal surveys, students who participated in OMA were required to submit at least six journal entries over the course of the semester, for which they received one service-learning credit hour. Seventeen students who did OMA for one credit hour of independent study wrote six journal entries per semester and the other 38 students who did OMA as volunteers wrote three journal entries per semester. Typed journal entries were submitted prior to the next week's OMA session. All students were required to keep a journal after their first OMA session; the prompt to which they responded was "After the first social visit, please write your impressions about your first day of volunteering in a dementia unit. Write about how the interaction with the elder with dementia made you feel. Give examples and explain why it made you feel that way." Similarly, after their last OMA visit, all students were required to journal

a response to the prompt "After the last visit, please write what you have learned from volunteering with OMA. What were the best parts? What were the most challenging parts? How can we improve the program? How can we better support you and other students like you in this kind of learning experience?" Illustrative additional prompts include "After the 2nd or 3rd visit, please describe your interaction with the elder that you assisted. Was there anything that you said or did that made him/her react or respond expressively (either positively or negatively)? Was there anything that s/he said or did that made you feel/react strongly (either positively or negatively)? Please describe these interactions with as much detail as you can" and "After the 8th or 9th visit, please describe how you feel about your relationships with the elders now and compare it with how you felt after your first visit. Describe any changes in how you feel and try to analyze what may have caused these changes." For the purposes of this research, preliminary findings from an ongoing analysis that employs grounded theory are used to supplement the findings that derive from the pretest and posttest attitudinal survey data.

Findings

Table 2 presents the demographic characteristics for the three groups of participants: students who were in introductory gerontology course and participated in OMA service-learning program (gerontology students with service learning; $n = 19$), those who were in introductory gerontology courses but did not participate in OMA service-learning program (gerontology students without service learning; $n = 201$), and those who were in introductory sociology courses but did not participate in OMA service learning (sociology students; $n = 67$).

Pretest/Posttest Survey Data

Pretest/posttest attitudes were examined using the Statistical Analysis System (SAS) software 9.2 (SAS Institute Inc., 2002). One-way analyses of variance (ANOVA) with post hoc comparisons of Tukey's Honestly Significant Difference (HSD) test were used to compare the change scores (pretest score – posttest score; Ott & Longnecker, 2001) of three groups by course and service-learning status (i.e., gerontology students without service learning, gerontology students with service learning, and sociology students) for the three attitudinal domains (i.e., attitudes toward older people in general, those toward working with PWD, and attitudes toward community service for older people).

Results indicated significant differences between three groups in their change scores for attitudes toward older people (i.e., Factor 1; $F(2, 284) = 14.04; p < .001$) and a trend for attitudes toward working with PWD (i.e., Factor 3; $F(2, 273) = 2.57$,

Table 2. Demographic Characteristics for the Undergraduate Students Who Completed the Presurvey and Postsurvey by Course and Service Learning Participation

	Gerontology students without OMA service learning (% , n = 201)	Gerontology students with OMA service learning (% , n = 19)	Sociology students without OMA service learning (% , n = 67)	Total (% , n = 287)
Age group (15- to 29-year old)	99.5	100	100	99.6
Gender (Female)	69.8	84.2	79.1	72.5
Experience interacting with family members or friends who have dementia (Yes)	26.3	36.8	50.8	33.0
Volunteer/work experience at nursing homes or intergenerational programs (Yes)	41.2	63.2	43.1	43.0
Volunteer/work experience with dementia patient (Yes)	13.7	47.4	10.8	15.1

Note. OMA = Opening Minds through Art. Only students who completed both pretest and posttest were included.

$p = .078 < .1$); there was no difference between pretest and posttest for attitudes toward community service for older people (i.e., Factor 2). Post hoc comparisons (Tukey’s HSD test) indicated that the mean change scores for attitudes toward older people reported by gerontology students without service learning ($M = 2.01$, $SD = 2.96$) and gerontology students with service learning ($M = 1.89$, $SD = 2.35$) were significantly greater than those reported by sociology students ($M = -0.03$, $SD = 2.14$). Furthermore, the mean change scores for attitudes toward working with people with dementia reported by gerontology students without service learning ($M = -0.33$, $SD = 2.12$) significantly decreased (i.e., became more negative), whereas those reported by gerontology students with service learning ($M = 0.78$,

$SD = 2.44$) and by sociology students ($M = -0.02$, $SD = 1.97$) were not statistically significant between the pretests and posttests.

An advantage of using ANOVA to analyze change scores is that it minimizes Type 1 error rate with multiple comparisons (Caladarci, Cobb, Minium, & Clarke, 2004). However, analysis of change scores obscures differences between the groups in the actual magnitude of scores. Figures 1 to 3 graphically depict these differences.

Student Journal Data

Analysis of students' journal entries was guided by the constant comparative method (Glaser & Strauss, 1967), which is a "concept-indicator model" (Strauss, 1987). In this method, descriptions of actions and events are considered to be indicators of concepts that the researchers identify with increasing certainty as the analysis unfolds. Creswell (2002) describes the process of "generating and correcting categories by comparing incidents in the data to other incidents, incidents to categories, and categories to other categories" (p. 451). In our research, students' journals were read (and reread repeatedly) by one investigator to identify indicators. Using NVivo 8 (QSR International Inc., 2008), indicators were then compared with other indicators and refined. Subsequently, indicators were grouped into codes, from which categories emerged (Glaser, 1978). A second investigator independently coded the journals (achieving 93.0% agreement with the first investigator) and discussed with the first investigator revisions of the categories. Revisions included combining two categories (i.e., knowledge and skills). Table 3 documents how these categories "map onto" the factor analytically-derived domains of the SAIL instrument. As can be seen in the table, despite a fair degree of overlap, the fit between the SAIL domains and the journals is imperfect. This reflects the fact that the dimensions of the SAIL instrument did not drive the qualitative analysis of the students' journals.

Analysis of students' journals revealed that OMA participants experienced a transformation from being fearful and anxious about their abilities to work with people with dementia to establishing relationships with them. Students clearly stated at the beginning of their participation that they were worried and sometimes even a little bit scared: "I became worried after the training session. I wasn't necessarily scared, but more worried that I would do something wrong." "My first impressions in the dementia unit were uncomfortable and even a little frightening." "I approached my first visit to [name of facility] with much anxiety."

However, at the end of their 6-week participation, students articulated that they felt much more comfortable not only with their own abilities but also with the perceived relationship they established as illustrated here: "There might be

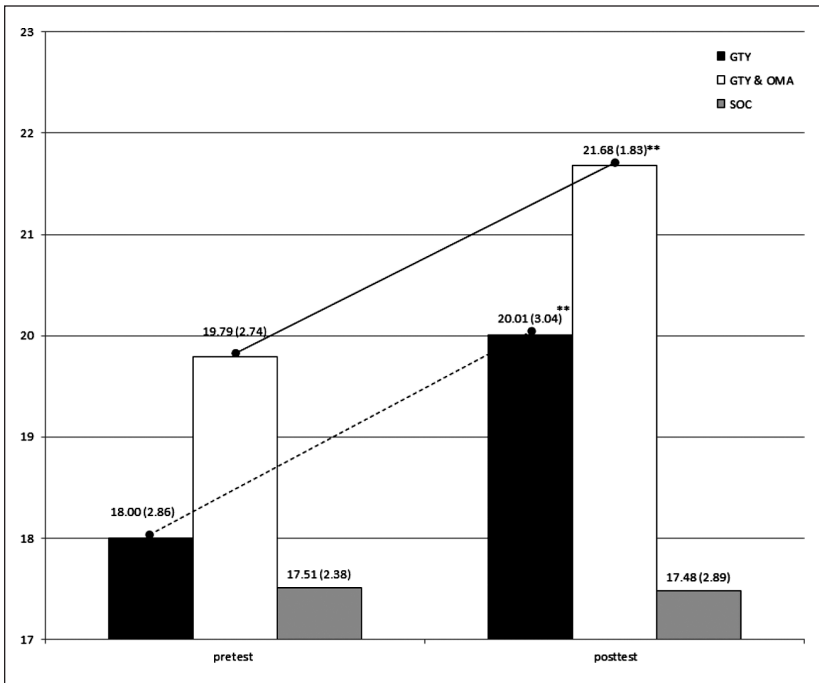


Figure 1. The mean scores (standard deviations) and changes between pretest and posttest for the attitudes toward older people by course and service-learning status
 Note. GTY = gerontology student without service learning; GTY & OMA = gerontology students with service learning; SOC = sociology students. The lines are shown only for the statistically significant differences indicated by ANOVA and the Tukey’s Honestly Significant Difference (HSD) tests. The y-axis (pretest and posttest score) was truncated to clearly demonstrate the change patterns. The lengths of bars are not comparable because the metrics (maximum scores) and truncations vary across Figure 1, Figure 2, and Figure 3.
 * $p < .1$. ** $p < .05$.

some vague familiarity with our relationship;” “I later started working with Hanna and have absolutely loved her and our friendship we have developed;” “Although I wasn’t thinking anything about it when I did it, this past Friday I hugged Kate goodbye.”

Although themes in students’ journals were not driven by SAIL dimensions, below are illustrations of students’ comments from their journals that reflect the three factors comprising the SAIL scale. With respect to general attitudes toward older people, one student wrote “The elderly are such a unique and interesting

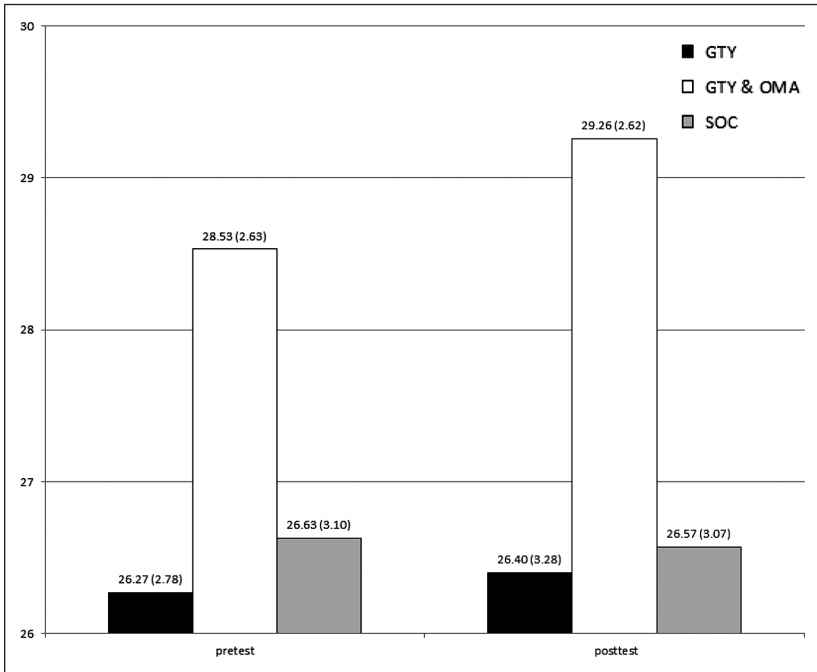


Figure 2. The mean scores (standard deviations) and changes between pretest and posttest for the attitudes toward community service for older people by course and service-learning status

Note. GTY = gerontology student without service learning; GTY & OMA = gerontology students with service learning; SOC = sociology students. The lines are shown only for the statistically significant differences indicated by ANOVA and the Tukey's Honestly Significant Difference (HSD) tests. The y-axis (pretest and posttest score) was truncated to clearly demonstrate the change patterns. The lengths of bars are not comparable because the metrics (maximum scores) and truncations vary across Figure 1, Figure 2, and Figure 3.

* $p < .1$. ** $p < .05$.

part of our society. Every single one of the people I have talked to has made me laugh.” Another stated “They each have their own story to tell and are just waiting to be heard.” Elaborating on this idea, one student reported “Through my experiences at OMA, I realized that everyone has potential no matter what their limitations or age. These characteristics are no barrier and at OMA, everyone is equal and can have fun!” Yet another student revealed “I have also learned more about myself as a person in regards to how I feel toward others who are quite different from me and that I can accept them for who they are.”

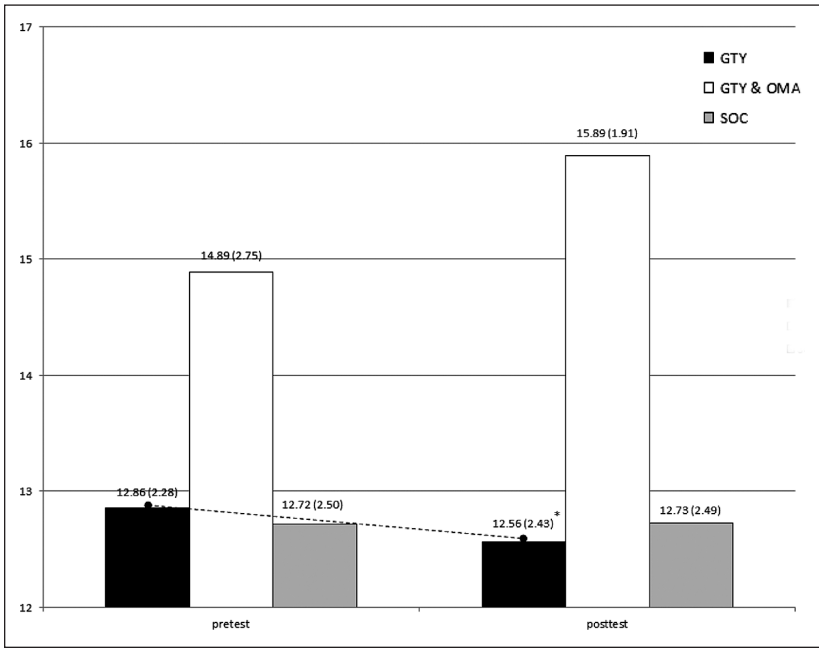


Figure 3. The mean scores (standard deviations) and changes between pretest and posttest for the attitudes toward working with persons with dementia by course and service-learning status

Note. GTY = gerontology student without service learning; GTY & OMA = gerontology students with service learning; SOC = sociology students. The lines are shown only for the statistically significant differences indicated by ANOVA and the Tukey’s Honestly Significant Difference (HSD) tests. The y-axis (pretest and posttest score) was truncated to clearly demonstrate the change patterns. The lengths of bars are not comparable because the metrics (maximum scores) and truncations vary across Figure 1, Figure 2, and Figure 3.

* $p < .1$. ** $p < .05$.

In their journals, students documented their attitudes toward community service for older adults. One student indicated “I see just from OMA how my time spent doing something for someone else can be rewarding without monetary gain, is fulfilling.” A second student wrote “OMA has given me the invaluable opportunity to help spark creativity in these elders and it’s very gratifying. At the end of the day, I feel that I’ve given back to my community.” Echoing these sentiments, one student reported “The OMA experience has been a humbling, eye-opening adventure, and has sparked my interest to pursue further volunteer work” and another student claimed “I find great power in service.”

Table 3. Relationship Between SAIL Domains and Coding Categories From OMA Students' Journals

SAIL domain	Journal category	Journal subcategory
1. General attitude toward older people	A. Description of PWD	A1. Positive descriptions: Friendly, happy, beautiful, autonomous, role model A2. Neutral descriptions of behaviors A3. Negative descriptions: Upset, infant-like
2. Attitude toward community service	B. Motivation (reasons for participating in service learning)	B1. Giving back to society
3. Attitude toward working with PWD	C. Attitude changes toward PWD	C1. Attitudes before doing OMA: Condescension, nervousness, fear of interacting with PWD C2. Respect for PWD C3. Empathize with PWD C4. Patience when working with PWD C5. Increased confidence and competence when interacting with PWD
	D. Knowledge and skills learned	D1. Interaction/communication skills with PWD D2. Knowledge about PWD D3. Knowledge about OMA methodology
	E. Rewards gained from service learning	E1. Enhanced learning and career development E2. Feeling rewarded for providing PWD with positive experiences E3. Friendship/kinship that developed with one's partner who have dementia E4. Self-development, including reflections on own aging E5. Good experience in general terms
	F. Issues and challenges faced when working with PWD	F1. Autonomy-support dilemma: Uncertainty about when and how much to assist F2. Unpredictable behaviors of PWD F3. Difficulty engaging PWD F4. Self-critique regarding actions taken or not taken

Note. SAIL = Student Assisted Independent Living Questionnaire; PWD = persons with dementia; OMA = Opening Minds through Art.

Many of the students' journals contained reflections on their attitudes toward working with PWD. Illustrative examples from different students include "I have learned that dementia is not the end of someone's life rather it is just a start of new experiences and challenges that people have to contend with," "OMA has transformed my view of how we treat people with dementia and other cognitive disabilities—it has made me realize that we have the ability to empower people to create, in the most amazing ways." Additional comments include "I now understand that they are still people, and they should still be treated with respect and should not be depersonalized due this disease," "Everyone that volunteers clearly wants to be there and no one treats it like a hassle or requirement. I think that is a big part of what makes OMA so successful. The residents are not a burden to these volunteers, and I think the fact that they are treated like friends and equals rather than burdens is a success in itself" and "Before OMA, I talked to them like children. Now, I know the most important thing is to make them feel important and show that their life still means something to someone."

Multiple students indicated that participating in OMA enhanced their experiences in the gerontology course in which they were enrolled. Illustrative quotes include "Because of OMA, gerontology has become more of a 'want-to-learn' rather than a 'have-to-learn' class," "What OMA teaches me helps me better understand everything I learn in the classroom" and "I think this service-learning experience has enhanced what I am learning in class." In addition, some students' journal contained interesting self-development insights; for example, "Overall, this experience has taught me a lot about being patient and encouraging . . ." "I learned to appreciate what I have, and to slow down. These people have made every Friday memorable and I truly enjoy coming here," "Dedicating time outside of academics to help someone else definitely lets me know the right perspective in my own life (things are much bigger than myself and sometimes I need to deny myself for someone else)."

Although the students' journal entries were overwhelmingly positive, some students reported issues and challenges when working with their partners with dementia. One student commented on PWD's losses "She seemed very distraught over her declining health, eyesight, etc., and was constantly bringing it up." Another student was unsure what to do when her partner was upset. She wrote "Personally, I was unprepared when I saw [my partner] freaking out about the light shining in her eyes. Even when she was moved, she was still very agitated and frustrated with everyone and everything. Nothing anyone could say could calm her down." Yet another student expressed difficulty in accepting fluctuation of her partner's mood from week to week: "My third visit I was with her again, but she was having a really bad day and seemed really confused and negative, which was difficult for me, since I had had such a wonderful time with her the

previous week.” Several students wrote about the difficulty in deciding the balance between assisting their partners and providing them with opportunities to be independent and autonomous: “I didn’t know whether to help her or just let her do it and ignore how it [the art work] ended up.” Working with people with dementia has its rewards and challenges. The illustrative quotes above show the types of challenges that some students experienced in their service-learning experience.

Discussion and Implications

Our results contribute to a growing literature on the impact of intergenerational service learning in general and service learning that involves individuals with dementia in particular. Palmore (1999) and Butler (1989) indicate that one main cause of ageism is lack of knowledge about older people and aging, and Hanks and Icenogle (2001) and Sherman (2004) suggest that ageism and negative attitudes toward older people are prevalent among undergraduate students. The finding that students enrolled in an introductory gerontology course (as well as those who were enrolled in the course and participated in service learning) demonstrated significantly more positive attitudes toward older people at the end of the semester, whereas there was no change in attitudes among students who completed an introductory or intermediate sociology course confirms Angiullo, Whitbourne, and Powers’ (1996) claim that aging education can be effective in improving college students’ attitudes toward older adults.

Interestingly, over the course of the semester, the attitudes of the students enrolled in the gerontology course became more negative about working with PWD. As almost three fourths (70.5%) of these students had little personal experience with individuals with dementia, it is possible that the information about dementia that was presented in the gerontology courses gave students a negative impression of this disease. For example, course content that emphasizes cognitive deterioration, the lack of a cure, and the stresses and burden associated with caring for an individual with dementia might understandably result in more negative attitudes. This highlights the importance of including potential positive aspects associated with dementia (e.g., the rewarding aspects of working with people with dementia and emerging job opportunities as the population ages; Ferri et al., 2005) in course content if one of the course goals is to foster more positive attitudes about certain aspects of aging.

Previous research indicates potentially negative impacts of service learning on students’ attitudes (e.g., Robinson & Cubit, 2007) and that initial exposure to individuals with dementia negatively impacts students’ attitudes about dementia (e.g., Fruhauf et al., 2004). In contrast to these findings, among gerontology students who were enrolled in the course and participated in the OMA service-learning

program, attitudes toward working with people with dementia did not change over the course of the semester (nor was there a change for the sociology students, as would be expected). On initial consideration, some might view this as a “negative” result, in that one would hope that service learning would result in more positive attitudes about working with the target population, in this case, older adults with dementia. However, such a conclusion is probably hasty, especially in light of the earlier findings. Working with individuals with dementia is not necessarily easy, as evidenced by students’ journal entries. Nonetheless, students’ journals are replete with reports of their successes and the great satisfaction they derived from their interactions with their partner with dementia. In short, the OMA service-learning experience provided the students with meaningful learning opportunities to raise their awareness of working with PWD while maintaining their relatively positive “baseline” attitudes.

One possible explanation for the discrepancy in the current findings and those reported by Fruhauf et al. (2004) and Robinson and Cubit (2007) might have to do with the actual service-learning opportunity in which students were engaged. OMA, in which the students in the current research participated, is a highly structured service-learning program. OMA provides formal training to students, who receive ongoing supervision and support by experienced staff members; three OMA staff members are always present alongside the students at their service-learning sites, tasks are assigned according to students’ abilities, and ongoing adjustments are made to the program based on systematic evaluations from relevant personnel, all of which are desirable components of service-learning programs (Cavanaugh, 2001; Long, Larsen, Hussey, & Travis, 2001; Whitbourne, Collins, & Skultety, 2001). It is possible that other service-learning programs lack these features and/or do not have the resources (e.g., financial, personnel/supervisory) required to optimally deliver a service-learning program (O’Quin, Bulot, & Johnson, 2005).

Clearly, our research is not without limitations. First, we were only able to evaluate one service-learning opportunity that is offered at one Midwestern university. Obviously, our findings cannot necessarily generalize to other service-learning opportunities at either that institution or other colleges and universities. Also, the results, particularly for the students who participated in the service-learning program, should be treated with cautions due to the small sample size. Nonetheless, the findings from this study are useful for those who design future service-learning offerings because they reflect “real-world” challenges (e.g., the difficulty of providing a well-designed service-learning program with constant supervision/support to a large number of students). Indeed, the main reason for the relatively low response rate among students who participated in the service-learning program reflects the logistics of the pretest and posttest data collection

strategy rather than refusal to participate in the study. Second, because this service-learning opportunity was not required as part of the introductory gerontology course requirements, there is a selection bias (as evidenced in the pretest comparisons) such that the gerontology students who participated in the service-learning opportunity had significantly more positive attitudes about older adults in general, community service toward older adults, and working with people with dementia prior to participating in service learning.

As described in the Method section, contributing to this bias is that, for one of the semesters sampled in this research (fall 2009), interested students were selected to participate in the service-learning program based on an application essay they wrote. Thus, it could be argued that our findings are based on students who are predisposed to participate in, enjoy, and benefit from service learning. Third, despite longstanding interest in attitudes about older adults, relatively few scales with well-documented reliability and validity have been developed to assess changes in attitudes toward older adults over time. We chose the SAIL instrument based on face validity (extensive data on its psychometric properties were not available) and made minor changes in wording so that the items reflected the target population in which we were interested. The result was an instrument that demonstrated acceptable but not stellar psychometric properties.

Despite the limitations associated with our research, several recommendations derive from the findings. As indicated by Knapp and Stubblefield (2000), evaluating the effects of gerontological education and intergenerational service learning on students' knowledge and/or attitudes toward older adults is an ambitious undertaking. Our findings highlight the complexity of the outcomes associated with intergenerational service learning and reinforce recommendations by other researchers (e.g., Blieszner & Artale, 2001; Karasik, Maddox, & Wallingford, 2004; Long et al., 2001; Mabry, 1998) to employ pretest/posttest designs that include multiple assessments, both quantitative and qualitative. This is especially important when measuring attitudes about aging, which have proven to be complex and difficult to measure quantitatively throughout the history of social gerontology. As evidenced by our research, qualitative data from students' journals richly supplement the qualitative questionnaire data. In addition, future research should systematically examine characteristics of students, gerontological curriculum, and the actual intergenerational service-learning opportunity to gain an understanding of how these components interact to influence students' attitudes. It is also important that researchers assess both the intended and unintended consequences of intergenerational service-learning programs.

Furthermore, and especially in light of population aging, these findings have implications that extend beyond postsecondary environments to include structured intergenerational programming that occurs in multiple venues in the broader community. Haber (2007) indicates that education per se is usually insufficient to

make impacts on learning and attitudes of adults. Nonetheless, in the context of lifelong and life-wide learning, adults often lack not only opportunities but also varieties of education/learning (Aspin & Chapman, 2000; Settersten, 2003). Our findings lend support to claims by others (Blieszner & Artale, 2001; Fruhauf et al., 2004) that, to promote positive attitudes, gerontological education should combine traditional classroom instruction and relevant hands-on experience that includes preparation training, longer program periods, constant supervision by trained staff, and ongoing systematic evaluation, despite the associated resource issues. Such efforts may prove especially beneficial for members of the adult population who do/did not have access to higher education in gerontology yet who work with older adults and, therefore, whose positive attitudes are particularly important (Desjardins, 2003; Hyman & Wright, 1979; Marken, Moxley, & Fraley, 2010; Pascarella & Terenzini, 1991).

In summary, well-designed intergenerational opportunities that involve people with dementia are appropriate for people of all ages as each of us will, at some point during our life, interact with older adults with dementia in professional and/or personal contexts (Haber, 2009; Lehning, Scharlach, & Dal Santo, 2010; Marken et al., 2010). Taken together, recommendations from this research should contribute to a comprehensive understanding of how to design effective service-learning opportunities that combat ageism and encourage upcoming generations of all ages to embrace the opportunities to work and live with older adults, especially those with dementia. Finally, service-learning programs such as OMA should be replicated and systematically evaluated, not only in other higher educational institutions but also in community adult education programs to gain insights about their applicability for diverse populations and settings.

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