

Impact of Intergenerational Service Learning on Students' Stereotypes Toward Older People in an Introductory Agricultural Computing Course

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Abstract

The purpose of this descriptive study was to measure the impact of intergenerational service learning on students enrolled in an introductory course in agricultural applications of microcomputers. Specifically, stereotypes toward older people were measured prior to and at the conclusion of service learning activities (computer instruction) with residents from a local retirement center. Due to various environmental factors, such as media, negative stereotypes regarding older people have evolved, supporting the theory known as Ageism. Intergenerational service learning activities have been found to support positive changes away from those Ageist stereotypes often held by college students. Although negative stereotypes were initially found in the pre-test, favorable changes were found in the post-test Mean scores and composite Mean scores. The largest improvement of students' stereotypes was found in the personality factor of the retirement center residents. An analysis of students' reflections of their intergenerational service learning experiences also supported the changed views toward the personalities of older persons. Recommendations were made for additional use of intergenerational service learning with courses where deemed appropriate and the addition of specific demographic-related questions.

Introduction/Theoretical Framework

“Aging as social experience requires the same political and philosophical attention being given to sexism and racism. When these three *isms* are imposed on women and men in some communities, their impact is devastating.” (Thornton, J.E., 2002).

As America continues to grow and evolve through its relatively infant state, changing demographics based on a post-World War II phenomenon have begun to have multi-faceted impacts, socially and economically. According to the Census Bureau "middle series" projections, the elderly population will more than double between now and the year 2050, to 80 million. By that year, as many as 1 in 5 Americans could be elderly. Most of this growth should occur between 2010 and 2030, when the "baby boom" generation enters their elderly years (U.S. Census Bureau, 1996).

Traditional America remembers the times when the elderly and youth were naturally connected, as families were more geographically centered in location. Children, parents, and grandparents often lived in the same home/farm place or at least the same city. This close mix of different generations allowed students to gain economic, educational, and cultural independence through an exchange of family, religious, and cultural traditions. As the third millennium begins, many families in America have seen times change as the youth and the elderly are being separated by demands of today's fast-paced world and segregation of age groups. Many senior adults live and socialize in communities of the same age group (Brandes & Green, 1999). This phenomenon has resulted in a widened gap between the younger and older generations. A possible result from this separation (and also environmental factors) has been a phenomenon of increased negative stereotypes toward older people among youth as well as college students. Chumbler (1994) found that negative stereotypes toward older people existed among college students in views regarding irritability, health behavior, personality, and activity. Chumbler suggested that such views may “reflect a lack of sensitivity and awareness of older individuals on college campuses.” Considering the wealth of knowledge and experience offered by seniors and the curiosity and creative minds of youth, a wealth of opportunities could be lost through such views (Chen, 1997).

Seeking solutions to reduce a widening gap between the young and old, professionals in gerontology have turned interest to the concept known as Intergenerational Service Learning (ISL). ISL is one tool that offers interaction between two distinct groups with very similar needs. The concept of intergenerational service learning is defined as “the combination of two distinct educational concepts that involve planned ongoing interactions between younger and older adults that are mutually worthwhile to both” (Newman & Smith, 1997). Intergenerational programs can improve the attitudes of elders and youth toward one another as a result of heightened interaction (Chapman & Neal, 1990). Matt Kaplan, Associate Professor of Intergenerational Programs & Aging at The Pennsylvania State University reflected on the merits of ISL, stating that “intergenerational programs have been found to diminish ageist stereotypes ... older persons also benefit from intergenerational

engagement; serving as mentors, they are provided with invaluable opportunities to remain useful and vital and make a positive difference in their communities” (Kaplan, 2001).

Literature regarding the impact of ISL on student stereotypes of older people is limited. Brown and Roodin (2001) found that college students’ views toward older adults improved in terms of reducing traditional cultural stereotypes through ISL activities. Other current studies documenting specific changes in students’ stereotypes from ISL activities were not found.

Service Learning in Colleges

In the past 20 years, service-learning programs have found their way into primary, secondary, and higher education institutions throughout the nation. Much of this increased interest in service-learning may be due to efforts in federal funding. Two primary initiatives have fostered the growth service-learning: 1) federal legislation was passed in 1990 that created a commission to award grants for service-learning programs, and 2) the 1993 National Community Service Trust Act provided funding to states for the purpose of promoting service-learning in schools (National Commission on Service Learning, 2001). Additionally, programs such as Learn and Serve America, Higher Education (LSAHE) documented growth in service learning interest by universities through direct grants and sub-grants. The LSAHE funded approximately 100 higher education institutions and organizations with \$10 million for service learning programming, and through sub-grants, approximately 500 institutions were involved (Gray, Ondaatje, & Zakaras, 1999).

As a result of the increased interest in service-learning, a plethora of research has been developed in many of the areas it affects. Service-learning provides researchers opportunities to investigate such areas as career development, personal/interpersonal development of students, social outcomes, and community relationships (Eyler, Giles, Stenson, & Gray, 2001). However, educators are often concerned about the impact of service-learning on academic achievement. Few studies exist that focus on the academic aspect of service-learning, as opposed to other studies that center on social/community oriented issues. Various studies found that academic achievement of students was higher than student counterparts when involved in service learning (Balazadeh, 1996; Gelmon, Holland, & Shinnamon, 1998).

However, integration of service-learning activities in academic core courses has not occurred as often (Antonio, Astin, & Cress, 2000; Gray, et al., 1998; Sagaria & Burrows, 1995). The use of service-learning in applying experiential applications to skill development courses (such as computer courses) in academic core programs would seemingly be practical as well as valuable to long-term retention.

The Theory of Ageism

Ageism is a theory driven by negative bias or stereotypic attitude toward aging and aged. Traxler (1980) postulated four primary factors that contribute toward the negative views of

aging. Woolf (2003) added support to Traxler's views on Ageism, using an array of related literature:

1. Fear of death in Western society – death is not viewed as a part of the course of life and it is considered to be synonymous with old age;
2. Emphasis on the youth culture in American society – media places a high value on youth, physical beauty, and sexuality and often ignores or negatively portrays older people;
3. Emphasis placed on productivity by American culture – economically the middle-aged are portrayed as carrying the burden and the young are seen to have economic potential, thus the view that older adults are financial liabilities, and
4. The manner of original research on aging – many of the gerontological studies were originally performed at long-term care institutions where institutionalized aging persons (5% of older population) were easier to access for study, thus creating a biased research base that did not consider the healthier population of older citizens.

The Theory of Reasoned Action

The theoretical model for this study consisted primarily of the perceptions of undergraduate students toward older people. The theoretical basis of this study is found in the Theory of Reasoned Action (Ajzen & Fishbein, 1980; Fishbein, 1967; Fishbein & Ajzen, 1975) which later expanded into the theory of planned behavior (Ajzen, 1988, 1991). The theory of planned behavior appends that human action is directed by three kinds of considerations: behavioral beliefs, normative beliefs and control beliefs. A combination of these three beliefs is thought to lead toward the formation of a behavioral intention. Greenwald (1989) supported this theory, reporting that individuals with positive attitudes toward a subject or situation tend to evaluate them positively.

In consideration of the theories of Ageism and Reasoned Action, one may purport that if stereotypes toward older persons exist, negative attitudes could translate into less favorable intentions in the workplace and in general society of the future. Realizing the rapidly approaching change of a large segment of our population, the baby-boomers, toward "senior status" implies a great need to avoid possible Ageist mindsets among college graduates. Additionally, as this large segment of population moves toward retirement, their presence as school volunteers, FFA Alumni, and as resource persons will create the need for agricultural educators to have an appreciation with unbiased beliefs for senior citizens.

Purpose/Research Questions

The primary purpose of the study was to measure the impact of intergenerational service-learning on the attitudes toward older people by students enrolled in an introductory course in agricultural applications of microcomputers. The study was organized around the following objectives:

1. Describe the demographic characteristics of students enrolled in the introductory agricultural computing course;
2. Describe students' stereotypes toward older people;
3. Describe students' stereotypes toward older people following intergenerational service learning activities;
4. Identify changes, if any, in students' stereotypes toward older people following intergenerational service learning activities; and
5. Discuss student perceptions toward older people as based on service learning reflections.

Methods/Procedures

To assess the impact of intergenerational service learning on students' perceptions toward older people, a descriptive research design was used. The population of the study consisted of 15 undergraduate students enrolled in a freshman-level introductory microcomputer applications in agriculture course at a College of Agriculture at a Land Grant University in the Southeast. Although 15 students were enrolled in the course, useable data were collected from 14 of the students due to the illness of one student during administration of the posttest. Considering the nature of the population of this study, the findings can only be generalized back to those students involved. The course provides an overview in such areas as microcomputer hardware and software including all aspects of the Microsoft Office package, use of Windows, Internet applications, and basic Web page development.

Instrumentation

The instrument, Chumbler's (1994) *Stereotypes Toward Older People Scale (STOPS)*, was chosen to assess students' attitudes toward older people. Chumbler developed the instrument to assess college-age students' positive and negative stereotypes toward older persons. In developing the STOPS, Chumbler used a content analysis on the ten most previously used stereotypes toward older people instruments. Following assessments using an exploratory factor analysis, 14 of 28 items remained. The seven points on the scale are as follows: 1=Never; 2=Rarely; 3=Occasionally; 4=Some of the Time; 5=Most of the Time; 6=Almost Always, and 7=Always. Based on findings from the exploratory factor analysis and an eventual confirmatory analysis, Chumbler found four major factors that accounted for 49.5% of the variance. The four factors were: health behavior; activity; irritability, and personality (See Table 1 for subscale groupings). Reliability for the overall STOPS via the Cronbach alpha procedure was .82 (Chumbler, 1994).

The pretests and posttests were administered during the first and final session of the course, respectively. Reliability analysis on the pre and post tests using the Cronbach alpha procedure reported an alpha of .78 and .71 respectively. Attrition occurred as one student did not take the posttest due to illness. At the beginning of the semester, the students were given an orientation on the concept of service learning and instructed to maintain a reflection diary during their activities to document their growth in the process. The service learning activities were conducted with a group of residents from a local retirement center located within five

miles of the university. After ten weeks of class instruction, the students began to meet with 12 residents of the retirement center (the residents were transported to a computer lab on campus for each meeting). During the initial visit, the students were assigned to work with a specific participant and the students individually polled them on specific computer skills they desired to learn. During each of the six sessions, students had designed specific lessons for the participants which typically lasted between 1.5 – 2 hours. Lessons ranged from introductory concepts of Microsoft Windows to instruction on graphics and scanning pictures to development of Web pages.

Analysis of Data

The data was coded and analyzed using SPSS 11.0 for Windows. Means and Standard Deviations were used to analyze the data.

Results/Findings

Objective 1. Describe the demographic characteristics of students enrolled in the introductory agricultural computing course.

As previously mentioned, useable data were collected from 14 of the students due to the illness of one student during administration of the posttest. Seven students were males (50%) and seven (50%) were females. One (7%) student was Black and thirteen were White (93%). Class ranks consisted of 10 freshmen (71%) and 4 sophomores (29%). Most of the students were enrolled in Agricultural Education 9 (65%); 2 in Agricultural Mechanics and Business (14%); 1 student was in Animal and Veterinary Sciences (7%), 1 in Packaging Science (7%), and 1 was undeclared (7%).

Objective 2. Describe students' stereotypes toward older people.

Findings from the pre-test STOPS administered prior to working with the older people (65 years of age and older) indicated that all four of the factor areas had high composite mean scores, ranging from 12.43 to 19.21 with a range of 3-21 and 4-28 for 3 and 4 statement factors respectively. The lowest composite mean score, 12.43, was labeled by Chumbler as "irritability." Mean scores of the four irritability statements ranged from M=2.92 to M=3.14, representing the Rarely and Occasionally scale categories. The statements (STOPS items) represented by the irritability factor include: get upset easily; talk to themselves; intolerant, and grouchy. The highest composite mean score, 19.21 represents a factor labeled by Chumbler as "personality." In Chumbler's study of 292 college students, a similar composite mean score of 19.20 was found for his "personality" factor. Mean scores of the four personality statements ranged from M=3.78 to M=5.64, representing the scale categories Occasionally, Some of the Time, and Most of the Time. The statements (STOPS items) represented by the personality factor include the following: meddlesome, set in their ways, old-fashioned, and think about the good old days.

The remaining factors had similar composite mean scores of 13.21 and 13.50, representing Chumblers labels of “health behavior” and “activity,” respectively. Both factors were comprised of three statements. The three statements regarding “activity,” had mean scores in the Some of the Time scale-category, ranging from 4.07 to 4.85. The three statements (STOPS items) were phrased with positive wording that included physically active, optimistic, and productive.

Objective 3. Describe students’ stereotypes toward older people following intergenerational service learning activities.

Mean scores of all of the statements following intergenerational service learning activities revealed “favorable” changes in students’ post-test scores. The lowest composite mean score, 10.21, was represented by Chumbler’s “irritability” factor. Mean scores of the four irritability statements (STOPS items) ranged from 2.21 to 2.85 (Rarely scale category) which included: intolerant; get upset easily; grouchy, and talk to themselves. The highest composite mean score, 14.78, was represented by Chumbler’s “activity” factor. Mean scores of the four activity statements (STOPS items) ranged from 4.35 to 5.28 (Some of the Time and Most of the Time categories) which included: physically active, optimistic, and productive. Three of the four highest means of the post-test were represented in the activity factor.

Objective 4. Identify changes, if any, in students’ stereotypes toward older people following intergenerational service learning activities.

The composite score reflecting the least change following the intergenerational service learning activities was the health behavior with a change of -1.57. However, any change reflected by a negative number in the personality, irritability, and health behavior factors is a favorable increase. Due to the nature of the statements in the activity factor, a positive number increase will reflect favorable changes in students’ stereotypes of older people. The increase for the activity factor was +1.28.

The greatest change in mean scores between the pre-test and post-test was reflected by the personality factor. The mean score change for the STOPS statement item “set in their ways” was -1.78. In addition, the STOPS statement item “old-fashioned” had a change of -1.57. The composite score change for the personality factor reflected a change of -4.57.

Table 1.

Pre/Post Test/Composite Mean Scores, Standard Deviations and Mean Score Changes of Students' Perceptions of Older People as Grouped by Chumbler's Factors

Item #/ Factor	Statement Old people...	Pre-test		Post-test		Change
		Mean	SD	Mean	SD	
1 (p)	are set in their ways	4.85	1.61	3.07	.99	-1.78
2 (p)	are meddlesome	3.78	1.36	3.07	.82	-.71
3 (p)	are old-fashioned	4.92	1.63	3.35	1.33	-1.57
4 (p)	think about the good old days	5.64	1.15	5.14	.77	-.50
	Composite score*	19.21	4.48	14.64	2.31	-4.57
7 (i)	are grouchy (cranky)	3.21	.69	2.57	.64	-.64
8 (i)	talk to themselves	3.14	1.09	2.85	1.16	-.29
9 (i)	get upset easily	2.92	1.07	2.57	.85	-.35
14 (i)	are intolerant	3.14	1.02	2.21	.89	-.93
	Composite score*	12.43	2.28	10.21	2.58	-2.22
6 (a)	are physically active	4.07	1.14	4.35	1.08	+.28
10 (a)	are productive	4.85	1.16	5.28	.72	+.43
11 (a)	are optimistic	4.57	1.01	5.14	.94	+.57
	Composite score**	13.50	2.56	14.78	2.19	+1.28
5 (h)	never fully recover from illness	3.71	.91	3.28	.91	-.43
12 (h)	walk slowly	5.00	1.51	4.42	.64	-.58
13 (h)	have health problems	4.50	1.16	3.92	.73	-.58
	Composite score***	13.21	2.42	11.64	1.74	-1.57

Mean score based on a scale of 1-7; Scale: 1=Never, 2=Rarely, 3=Occasionally, 4=Some of the time, 5=Most of the time, 6=Almost always, 7=Always

Factors – p=Personality; h=Health Behavior; a=Activity, and i=Irritability.

* = Four-item subscale; range = 4-28 (higher number indicates more negative stereotype toward older people).

** = Three-item subscale; range = 3-21 (higher number indicates more negative stereotype toward older people).

*** = Three-item subscale; range = 3-21 (higher number indicates **less** negative stereotype toward older people).

Objective 5. Discuss student perceptions toward older people as based on service learning reflections.

Students' reflections of their experiences were posted to a discussion board immediately following their interaction with the participants each week. Supporting the findings of changes in stereotypes regarding personalities, a common thread was found in many of the students' comments. In order to preserve anonymity of the students' comments

and the participants, all discussions referencing the participant have been changed to “my person.”

Many of the students’ comments centered around what they taught the participants, since they posted their reflections each week immediately following their activities. However, comments related to age concepts were generally found to be related to the participants’ personalities and also regarding potential for learning from their many past experiences. The students expressed surprise that the participants had pleasant demeanor and that they shared commonalities. A sampling of the comments supporting this include:

“What I got the most from working with this group is to not write off all older people as being grouchy and not willing to learn from the younger.”

“Working with my person I have learned how not to judge people before you really know who they are. I have learned not to classify people and just put them into groups without giving them a chance.”

“It was really exciting to see and to meet someone of such a different background and realize that we have some common interest.”

“My feelings...that old people (other than my grandparents that I grew up around) aren't as scary as I thought.”

Another common theme that was found in assessing students’ reflections was related to the potential to learn from the participants. A sampling of the comments lends support to this concept:

“My person has a rich history from his travels and experience. I enjoy talking to the elderly and hearing their stories. Overall, my first impression of my person was that I will enjoy working with him and learning from him as well.”

“A lot can be learned from older people but we hardly ever take the time to listen. Through this project, we are being forced to listen (in a good way) to the people who have been on this earth longer than we have.”

“I found out how much the older people know and how much I can learn from them. My person has traveled all over the world. She really wants to learn from us and is really interested in sharing with us and is interested in our lives and what we have to teach her.”

“I really learned a lot from my person. At first I thought she was going to be one of those "cranky" old ladies, but she really turned out to be very interesting.”

In support of the findings from the quantitative data in this study, a theme of comments surrounding the concept of “personality” seemed to prevail in the students’

discussion/reflections regarding aging. Many students expressed initial apprehensions to work with the participants. However, during the course of the meetings, change in students views toward the participants quickly occurred. The students expressed mutual feelings of accomplishment as they had the opportunity to share their computer knowledge in turn for the wisdom and life experiences of the participants.

Conclusions/Recommendations/Implications

Results from the pre-test indicated students' initial perceptions toward older people were in the negative categories of Chumbler's STOPS instrument. This supports Chumbler's previous study that had similar composite Mean scores. One example of similarity is in the personality composite score between this (M=19.21) and Chumbler's study (M=19.20) which differed by .01. The personality factor was comprised of four statements; three of the statements had mean scores in the either Some/Most of the Time categories. The statements for personality with high mean scores included "Old People": are set in their ways; are old fashioned, and think about the good old days. Most of these are commonly portrayed personality characteristics within the media. The data supporting the high mean scores of the personality factor could be linked to one concept in Traxler's Ageism theory linking the emphasis placed on youth culture in American society. The theory elaborates that emphasis on youth culture stems toward media bias against older people. These findings might lead one to question the origin of students' initial stereotypes toward older people and how much environmental elements such as media affect the views of personalities of older persons.

Although initial stereotypes toward older people were negative, favorable improvements following ISL activities occurred across all four of Chumbler's factors (Personality, Activity, Irritability, and Health Behavior). This finding supports Brown and Roodins' (2001) recommendations that ISL can positively impact students' stereotypes toward older people. The largest change in students' stereotypes, Personality, was also supported by student reflections regarding their experiences with the participants from the retirement center. The comments from students consistently demonstrated an early bias regarding the general "personality" of older persons; however, the paradigm in this area quickly shifted. Of the four factors specified by Chumbler, it would reason the Personality factor changed the most as students had ample opportunities to observe personalities of the participants, but the change is less obvious with Activity, Irritability, and Health Behavior factors.

The general implications of this study are that students enrolled in this course possessed somewhat negative stereotypes toward older people. However, with the opportunity to interact with older persons (beyond grandparents), the changes in students' views were immense when considering the few contact hours. In addition, although many students at first seemed apprehensive, the overall view of the ISL activities was very favorable. Considering the potential for future agricultural educators and agricultural business employees to interact closely with older people (as FFA volunteers, colleagues, resource persons) the need for exposure to reduce stereotypes is very important. Teacher

Educators and other university faculty must realize the value of this growing population of baby boomers and seek to encourage student interaction with them when possible.

Based on supporting literature and the findings of this study, it is recommended that college/university faculty (including Agricultural Education) teaching courses with service learning components consider the benefits created through intergenerational activities. Such activities provide opportunities for Land Grant Universities to extend its outreach activities as faculty can share their research through students.

It is recommended that additional studies should be conducted using Chumbler's STOPS instrument with large populations. At this point, no other studies beyond this and Chumbler's have been cited in using the STOPS instrument. Use of the STOPS with large introductory freshman classes would provide valuable baseline data that would reflect an array of demographic data as well as determining if trends differ among colleges/majors.

A final recommendation is that all studies using the STOPS include specific questions related to students' prior contact with older people. Such data will help researchers determine if findings from the STOPS were influenced by different environmental factors (extraneous variables).

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