The Intergenerational Computing Course: Service-Learning, Gerontechnology Research, and Computer Literacy

Frances Goertzel Gustavson
fgustavson@pace.edu
Information Systems Department

Jean F. Coppola
jcoppola@pace.edu
Technology Systems Department
Seidenberg School of Computer Science and Information Systems
Pace University
Pleasantville, NY 10570, USA

Abstract

Institutions of higher education play a key role in shaping students to become responsible citizens. Service-learning courses engage students not only in the learning process, but in becoming responsible citizens in the community. The growing population of people over 60 years of age is of great concern to the government and local communities. These factors provided us with the opportunity to use service learning courses to further geriatric technology (gerontechnology) research while teaching senior citizens computer literacy in order to improve their quality of life. Because our senior population had physical limitations, the students had to understand how to teach the seniors as well as how to teach computer literacy. In this pilot project, 23 undergraduate students, enrolled in an intergenerational service-learning computing course, received gerontology theory and training in teaching elderly before instructing the seniors. The randomly enrolled students had seven weeks of theory and instruction, including their own computer literacy (although they were already computer users), integrated with didactic geriatric content and role playing. Students taught three different groups comprised of a total of 26 seniors computer use including those residing in a nursing home, senior independent residence, and an assisted-living facility. The pilot included teaching the seniors how to use the internet for searching and email, the goal being ultimately to improve their quality of life emotionally, cognitively, and socially. The course and research continues, with modifications based on the pilot study.

Keywords: aged user, assisted-living, civic engagement, digital divide, elderly, geriatric, gerontechnology, gerotechnology, independent-living, intergenerational computing, Internet, long-term care, nursing home, senior citizen, service-learning, technology

1. INTRODUCTION

This picture was taken during a service-learning course this past spring. There were three teams of university student teachers, corresponding to three locations of seniors: the independent living, assisted living and skilled nursing facilities. The picture was taken at the skilled nursing facility.

The seniors had so much to learn all at once that some mistakes were inevitable; they did things that seemed silly even to themselves a moment later. These things happened because they were concentrating on reaching the keys (some were in wheelchairs, some had limited range of motion), on locating specific keys, especially the non-alphabetic ones, moving and clicking the mouse, finding the mouse pointer on the screen, learning a new language (such as that used by the email system – for example, they had no idea what passwords and id's were for), etc.

Their university student teachers were delighted that they would accept them as teachers despite their youth; the seniors were delighted the young would teach them. It was a huge success.

Typically the seniors had their own copious notes, which their instructors checked for them or provided or helped write, and often repeated the same procedures several times as if they were new. They were thrilled with their own progress, but their teachers had trouble grasping the depth of the service we provided until our overview discussion and "their graduation celebration," when we returned to the Nursing Center to hand out certificates and join their celebration.

The success of this service-learning course, "Intergenerational Computing," resulted from years of experience as well as careful planning by individuals from Pace University, United Hebrew Geriatric Center, New Rochelle, NY, and Westchester County, NY, and of course, the service-learning courses entailed more than the on site component. (In addition to the Intergenerational Computing Course, computer donations had to be installed, involving a different service-learning course, before we could even start using the computers for teaching.)

2. UNDERGRADUATE COURSES NEED JUSTIFICATION

Policies differ, but it's generally true that for a course to be offered, it is expected that it will have an acceptable enrollment, whatever that means for that course at that school. Further, the course will fit into an acceptable plan of study. Finally, there must be faculty able and willing to teach it.

Our current introductory (non-major or major) computing courses are fine, but there is never enough time in one course to teach enough. We need second courses explaining how things work. No one wants to offer such a course for the general population, and that's because there would probably be no interest. Moving with the times, a different second course was developed, "Intergenerational Computing." It represents changing old ideals, at least temporarily, with new, equally valuable ones.

3. THE INTERGENERATIONAL COMPUTING COURSE AS A SERVICE-LEARNING COURSE

Service-learning courses are widely offered and often mandatory, yet students, advisors and faculty are likely to dismiss them as one more graduation requirement. That is unfortunate, because such a course, if executed well, combines knowledge of a discipline, of a population being reached, of the teaching process, and of community outreach. Although it is a difficult course to conceptualize and teach, it can have lifetime benefits. (There are other kinds of service-

learning categories, but these remarks apply to the course being described.)

The authors had personal and research needs which could be met by developing this service-learning course. The first is in the field of computer literacy. Intergenerational Computing could fit many intergenerational pairs, and, within each pairing, many starting points. Second, the number of senior citizens is about to increase rapidly, with calls for service-learning courses to assist with their education in many areas. Third, teaching seniors to use computers opens new worlds of access for them, if the usability obstacles can be overcome as necessary. This research interest will be described in the following section.

4. THE INTERGENERATIONAL COMPUTING COURSE AS GROUNDWORK FOR GERIATRIC TECHNOLOGY (GERONTECHNOLOGY) RESEARCH

In the United States today there are over four million students involved in service-learning projects with growing popularity[1], The recent heightened awareness of the aging population coupled with recent studies of technology benefiting seniors emotionally, cognitively, and socially guided this project to have the intergenerational computing course form the foundation for beginning gerontechnology (gerontology plus technology) research. Thus, this project combined service-learning with research, writing, and teaching.

Pre- and Post Likert-scale surveys were administered to the seniors as well as a student-appropriate instrument to the undergraduates. Senior instruments were developed that focused on computer comfort levels, experience, perception, attitude, family support, and preferred input / output devices and display characteristics. An existing student instrument used with permission focused on computer comfort levels, experience, perception, attitude, family support, and preferred input / output devices and display characteristics. These results were shared with our partners on the project including but not limited to the geriatric center and the county government office of senior programs and services. Copies of the instruments used and our preliminary results are in the Appendix. However, the reader is reminded that this was the pilot section of the course, and two more sections are running this fall.

5. THE INTERGENERATIONAL COMPUTING COURSE

The format chosen for this course, a mixture of classroom and online work, is both a popular format and one which provides an easy mechanism for team interaction and sharing written work as well as online discussion with the entire class between class sessions. The class was scheduled to meet 7 weeks at the university, 5 at the nursing center and then 2 back at the university. That schedule changed with a tour of the nursing center and presentation about the residents given by a senior staff member to the students replacing one of the first 7 weeks and a graduation celebration replacing the last week. We had access to a "PC classroom" whenever we needed one. There were teaching areas at the nursing center, the one at an independent living facility having 5 computers, at the assisted living facility 3 computers, at the skilled nursing facility 3 computers. The initial plan was for seniors to share computers. That way we prepared for a class of 22.

The prerequisite for this course was the first course in computing, or equivalent. There were three textbooks, one for gerontology, one for service-learning, and one for computing. The gerontology text is a classic sociology text containing far more information than necessary, but very solid and readable, and selected portions were assigned. The computing book was more advanced than the ones they used in their earlier courses and was potentially a source of diagrams and definitions for the manuals guides they were to develop. The service-learning text was included in part so they could take notes during the service part of the course, but that proved impractical, even if some of the teaching was done in shifts.

The official syllabus, including the textbooks used, is in the appendix. (This was required so that the course could be offered.) The course must really be designed as two courses, one for the undergraduates and one for the seniors.

The undergraduates must:

Learn to teach neophytes

Learn to teach seniors

Learning to teach neophytes means:

Assume nothing: for example, no one is born knowing what a " mouse" is or how it works, and certainly a login screen is NOT obvious, etc.

Think generically. By now, most application programs use the same menu systems. Learn some, for example "help" and "file." Then try to learn a new program.

Teach in a logical order, not every thing at once.

Learn to teach seniors: SLOW DOWN and empathize, both with neophytes and with elders.

Note for instructors: This course is not a prerequisite for another course; therefore, students must learn, but what they learn is not rigidly defined. The curriculum must be tailored to the needs of the seniors or other generation being served. Teaching the students to reach their students, to be good teachers, is your goal.

Sample Activities for Preparing Students to Teach Seniors: Part of a homework assignment was to learn WordPad and Paint. Of course they were easy but gave everyone confidence the first teaching day. These programs also served to reinforce the fact that menu systems are similar across programs. Finally, using Paint and letter sized paper it is easy to make a greeting card without special software.

We reviewed email and other applications by having teams write instructions or manuals, first for other team mates and then for other teams to follow. There were two sets of teams and manuals, one during the classroom period, and a second at the nursing center. Students were free to use earlier material, but the second set of material had the benefit of classroom discussion, and it had to be in a specific large, bold font. We developed one set of instructions which worked with several popular email systems.

Understanding the Seniors we Were to Teach: Many of our students are the first in the family to attend college, and some said their elders laughed at the idea that any seniors would even want to go near computers. Discussions continued throughout the classes, and they understood that their students would have different *physical* abilities etc. but were older than they were, and that's why. Their educational backgrounds would also vary, most would be computer neophytes, but there would be no but there would be *no mental impairment*.

Role playing is useful for generating empathy, and it's easy to do in some in classes. The computers and their monitors were under the desks so the faculty member brought some children's building toys and a game which stood up vertically and had one student (the unimpaired teacher) directing the action of another (the designated senior). The "senior" was temporarily quite impaired: eye glasses smeared in areas with toothpaste, hands made clumsy by wrapping them with shower caps, and jackets buttoned backwards to impede motion. The "Seniors" worked hard to follow directions in a timely manner. The "teachers" caught themselves becoming impatient. The "seniors" were not only slow, but they forgot how to do things they had just done; they were concentrating on the physical task*, not its use as a tool*.

These students were about to teach a computer literacy course. To be well done, such a course has to separate the teaching of application concepts from learning to use them from learning to use the computer at all. It all sounds so simple, now, but many of these students were surprised to learn that we weren't going to start our community outreach the second week of class.

Visiting the nursing center provided the students and the seniors an opportunity to view each other and look forward to the class, allaying some nervousness. The center provided a lovely reception and tour, complete with welcoming speeches and publicity. *More important, a senior staff member gave a good introduction to the backgrounds of many of the residents, and the visit was motivational as well as comforting.*

Teaching: **University students now formed three teams, one for each location, and the faculty designated a leader, troubleshooter and documentation coordinator for**, especially in the areas of solving problems using the tools at hand to accomplish what they needed to do – that is, to break problems into tasks and application programs into functions.

The seniors became comfortable enough with the computing environment to ask questions without being embarrassed; some could function independently. We later learned that some of the seniors had computers (assisted living) and some of the families said they would buy them (independent living).

Every "hands on" computer course requires that computers be available with help and technical support available between classes. We hoped seniors would assist each other, and some not only helped classmates but also taught others not in the class (it was oversubscribed). In the nursing home, where staff involvement with residents was routine, staff help and support was invaluable. The teams met, none were comfortable deciding their team's curriculum so the faculty member volunteered, and the students officially became teachers. We met next at the nursing center. Using our online discussion, we agreed to learn games in case they were also useful for learning mouse skills.

Troubleshooting: Having two seniors work at one computer (as the nursing center requested) proved impossible because of space limitations as well as the seniors' reluctance to work with peers. We brought in our own laptops to provide some additional computers, but they were not usable for most of the seniors. Most of the nursing home's computers were connected to the Internet, but the laptops weren't.

Seniors took turns using the computers but wanted to talk with the students or leave when it wasn't their turns, instead of listening to them talk about the computers, even with easily visible diagrams.

Hence we made plans, revisions and more plans, and new computers kept arriving.

Some of our revisions were due to requests from the class, such as a group wanting to learn how to start and turn off their computers and see what the backs looked like. When I put that on the daily schedule, another area's teachers realized that was impossible for their students and sent their troubleshooter to find me. *This may be reading like a diary, but we were on a large campus, I was moving from group to group, the nursing center coordinator wanted handouts for the residents (big bold font), and the teachers wanted to do their job well; it's clearly a solvable problem.*

The problems that arose and were solved weren't surprising, but still existed. There were three teams, geographically separate, each with students going at individual speeds, and getting into computer problems that sometimes defied the university students' abilities to help. (For example, at one point passwords could be reset by mistake and then no one knew what they were.) One by one, these problems were solved. Sometimes a student was ill and could not come to teach and was missed. Sometimes a computer broke. Between classes seniors might not find help (but often they did).

Back to classroom, team presentations of experiences: The students who worked at the independent living facility could see the most progress, but all felt somewhat frustrated because they wanted more time for teaching. In the future, there will be more time for two reasons. The first is that we have scheduled 7 teaching sessions instead of 5. The second is that we have received a grant from IBM for "Assistive Technology" which is designed to make the computer more accessible for the seniors. It will mean they do not have to rely on the mouse and should also help those with vision impairment. Thus more time will be spent learning to use the computer and less learning to manage peripheral devices. (However, when the students heard what the staff members said about the positive impact the course made and excitement and pride the seniors expressed, they realized how much more they had accomplished than they realized.)

Graduation at Nursing Center: When it was the faculty member's turn to speak, she joked that her students, the seniors' teachers, did the impossible, and each of their students learned to use the mouse. The CEO of the nursing home said she didn't give her students enough credit.

The seniors will keep working with computers, with staff, family, friends and volunteers helping them.

Student Assessment: Course grades included grades based on formal papers, class participation, online discussions (class and team) and manuals (class teams and teaching teams). The paper topics were "Techniques of teaching, techniques of teaching elders (seniors), and techniques of teaching your individual elders, to use the computer" and "The impact of the Intergenerational Computing Course on Successful Aging."

Intergenerational Computing – Sharing Computer Literacy. There's nothing like teaching something to learn it. Students greatly enhanced their computing knowledge.

6. THE FIRST COURSE IN COMPUTING – WHAT SHOULD IT CONTAIN?

Although this question has always been with us, its answers keep changing (or, do they?). There are literacy, fluency, and using tools approaches at the surface, and theoretical approaches at and below the surface.

Should the first course be required for majors? Don't we want it to attract majors? Don't majors need this knowledge? Don't students change their minds? Etc.

No matter who is taking the course, it's necessary to separate any required teaching about the applications from the computing concepts. The question "Is your output correct?" has always been with us. It might have first been asked about output from machine code or an assembler and now from a spreadsheet processor or web page, but it hasn't changed

The Intergenerational Computing Course is a Second Course in computing

As part of the Intergenerational Computing Course (a second course in computing) we had to plan the nursing center course (a first course in computing). Of course, we knew their goals, which were to use email and the Internet and be able to locate useful web sites and thereby organizations for assistance and interest. Since we had only the handicapped settings available through the operating system, the most students accomplished was mouse skills and simple programs, using a browser, simple email and simple searching.

With assistive technology, we hope more will accomplish the above skills, and some will learn to locate useful and enjoyable web sites and make better use of mail and searching.

Could a first introduction to computing still have future positive or negative lasting results for students? For seniors who have overcome anxiety to try, probably, yes.

1 Can a Car Get a Virus?

At first strong feelings about course content came from wanting students in the first course, no matter what their background and interest, to be shown that they could do something using a computer, even if that something was small. Computers weren't something that others could use to "boss them around."

More recently, they were related to approach, not content. Teach anything, but teach underlying concepts. We learn to drive automobiles, not specific models. Each new version of an application should not mean a new course to take.

Now even different manufacturers use similar interfaces, and it's time to think about getting back to basics. Why? A very serious student, earnestly answering the question "Can a car get a virus?" answered "Yes, if you loan it to someone and she has one and it gets on the car keys." This answer showed that she had read the assignment; the text warned students not to loan their computers to friends who might spread viruses to them accidentally. Another serious student talked about virus tainted gasoline being pumped into a car and infecting the engine. She included the link to a very serious article (which, of course, was a spoof).

7. REVISITING THE DIGITAL DIVIDE, AT LEAST TWO TINY PIECES OF IT

The assistive technology which will lessen the usability problems of the seniors at this nursing center will also help others made clumsy by illness. Our much more limited experience with this second group (living alone) indicates the need for similar help when first learning. For example, when

helping a person with tremors do his banking online (he can't write), it seemed at first that his problems were due to usability, and in fact some were. Some problems, however, were to due to the well known lack of perfection of user interfaces. He had misinterpreted some of the instructions.

The above example illustrates another population that could benefit from an "Intergenerational Computing" course. The students in this example could obtain customer support once their usability issues were solved, and they were comfortable and confident enough to make the necessary phone calls.

A second population is high school dropouts, and designing a service-learning course to help them is only an idea so far, in part because the technology required by the idea doesn't exist. We know that video games are popular, cell phones are gaining more features rapidly, small computers can be used as cell phones, and these small computers can be used for playing games. We also know that a high school education is important for obtaining employment.

As things are now, perhaps our target population would use cell phones to play video games, but we'll assume they would probably not consider enrolling in high school graduate equivalent courses online or at a local school. There needs to be software, *teaching* software, hidden in video games, software that's as "cool" as the games. Then the service-learning students can work to obtain donations for such cell phones and cell phone service, and match each phone with a person (through an agency).

8. REFERENCES

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APPENDIX 1. INTERGENERATIONAL COMPUTING, COURSE DESCRIPTION FOR APPROVAL PROCESS

CIS102x Intergenerational Computing – 3 credits Web-Assisted

Prerequisite: CIS101

Course Description: This course is designed to teach students the fundamentals of the PC and digital media technologies as well as the social and sociological aspects of the aging process. Students will work in teams visiting elderly seniors in adult day care centers and senior community centers to teach them to utilize digital media devices, web browsers, and email. This will provide students with an in-depth understanding and respect of both senior citizens and intergenerational computing

Course Learning Objectives:

1. To introduce the student to the fundamentals of the aging process and technology's sociological impact.
2. To provide the student with a basic understanding of the concepts of digital media and uses.
3. To familiarize the student with intergenerational computing.
4. To familiarize the student with selection of appropriate hardware and software for elderly seniors in community based organizations and study the affects of the choices on users.
5. To understand basic PC troubleshooting essentials to assist elderly seniors using browsers and email.
6. To develop critical thinking, problem solving, and team-work skills that will enable them to adapt to different situations and systems.
7. To learn how to interact with the elderly seniors having varying degrees of self-confidence about learning modern technology.
8. To identify web sites that are designed to assist the elderly senior population in improving their own healthcare and teach them to access and make use of them.

Textbooks/Resources:

Technology in Action, 2/e 2006 Evans, Martin, Poatsy, Pearson Prentice Hall, ISBN# 0131489046

Later Life: The Realities of Aging, 6/e 2006 Harold G. Cox , Pearson Prentice Hall, ISBN#0131951580 (or e-textbook ISBN# 0131951602)

Digital devices (manuals, white papers for the various devices)

Scholarly papers available through the ACM Database online (Pace University Library), including:

- "Service Learning Models Connecting Computer Science to the Community,"

Carol Traynor and Maril McKenna, inroads – *The SIGCSE Bulletin*, Vol. 35, Number 4, Dec. 2003, pp. 43-46

- "A Study of Web Usability for Older Adults Seeking Online Health Resources," Shirley Ann Becker, *ACM Transactions on Computer-Human Interaction*, Vol. 11, No. 4, Dec. 2004, pp.. 387-406

Assessment:
20% Exams
40% Class Participation and Intergenerational Teaching
10% Assignments
10% Blog (Discussion Board)
20% Teaching Evaluation Presentation and Paper

Student Responsibilities:
The current statement on student responsibilities can be found at
http://csis.pace.edu/csis/data/Responsibilities.doc.
Attendance is required.

Teaching Evaluation Presentation Requirements:
The group must consist of 3 people (minimum 2 upon approval). Each teaching team will present a thoughtful evaluation of their experiences. This will include approaches which did not succeed, modifications made, and resultant successes or suggestions for equipment designs or social approaches which would succeed. If there were no failures, the discussions should focus on the social skills and equipment used which enabled the seniors to work comfortably in their environment. How did you overcome any timidity? Did the computers "talk" to their users? Each presentation should lead to a group discussion.

Web-Assisted
Before the students have started working with their senior groups, the Web-Assisted portion of the course will be used to discuss the assigned readings. In addition, students will search the web and library databases for additional literature about aging, web site usability and accessibility, and websites which assist the elderly in determining their own healthcare options. Students will find links, share them with the class, and discuss them in terms of their appropriateness both in terms of content and usability for the target population. After the teaching has begun, the Web-Assisted portion of the course will provide a continuous source of support.

Expected Outcomes
At the end of the course the students will be comfortable working with a variety of senior groups, having shared their experiences with the other groups in the class both for helping to solve problems as they arise and to understand problem solutions as they occur. Students will also receive a deeper understanding of the very technology they are teaching. We all know using and teaching require different levels of understanding! Student

success at the end of the course will be demonstrated by their understanding of the technology they are teaching, (handheld, the computer, browser, internet, senior-useful links), understanding what is useful to their target audience, feeling comfortable with their audience and relating well to them, and either succeeding in teaching them or in identifying the problems that need to be solved. (We anticipate that the first few time we run this course there will be some equipment issues we need to resolve. Hopefully, the resolution will occur during the course.)

Topics

Course objectives
The aging process
Older adults and useful Internet sites – the broad goal of self education, locating sites for older adults
Older adults and (often fear of) technology
Course process (We will teach our older adults to be comfortable with familiar feeling, hand- held digital devices and then move them to the computer after we have "chased away" their fear of technology
Digital media and its uses
Understanding the parts of computers
Browsers
Using the Internet to locate sites for seniors
Online health resources for older adults
Web usability for older adults
Basic PC troubleshooting – what to do when the browser "freezes," the site doesn't respond, the email attachment won't open, virus protection
Working as a team, sharing with and learning from other teams, and group "brainstorming"
Intergenerational teamwork and teaching

Appendix 2. Table of Majors of Pace Students

Marketing	**4**
Nursing	**2**
CRJ	**1**
Physics	**2**
Math	**1**
IS	**2**
FIN	**2**
Bus Mgt	**3**
Acc	**2**

Undergraduate majors represented the business, liberal arts, nursing and computing schools of Pace University; the fifth school, education, has its own service learning course in this "area of knowledge." The students were quite frank about the reasons they chose this course – it fit into their schedules and filled a requirement being a common answer. The majors turned out not to be relevant; one of the most empathetic students was a finance major. What was helpful was the fact that most of the students were very comfortable using the computer.

Appendix 3. Revised Student Pre/Post Survey

The survey used in the pilot was very similar to this but the post survey was distributed before any discussion of the effects of the student/senior experience was held with the students, that is, before the students realized how much they had accomplished. The students did realize the seniors were content, 5 weeks were too few, and we needed a better mouse, but none of us expected to hear the expressions of pride and excitement reported by the staff. When we analyzed the survey results, we found that the averages of each answer did not change. After we met with the staff to plan the graduation celebration and learned of the excitement, the students completed their papers. Before, they knew they were appreciated and made friends and felt good. Now they felt wonderful.

The changes made to this survey made it clearer and easier to tally. The survey used before had been used at other schools and validated, but in a different context.

Dear College Student:

We are conducting a research study to understand your interest and perception in working with an aging senior (60+) population. This survey is being distributed to college students enrolled at Pace University and Westchester Community College. It should take approximately 15 minutes to complete. Your participation is completely voluntary. You may skip any questions you prefer not to answer. If you decide not to complete the survey there will be no penalty. Participation will not impact services you receive at the colleges. Data gathered will only be used in the aggregate. All the information gathered will be kept confidential.

One of the benefits of the survey will be to help the colleges understand the students' interest in the field of aging. By participating in this study, you are helping to contribute to the social work knowledge base, as well as helping in program development. The students who come after you will benefit from your input.

Your completion and return of this survey indicates you are giving informed consent to be part of this study. If you have some concerns about participation you can discuss them with Dr. Jean Coppola at (914) 773-3755 or Dr. Frances Gustavson at (914) 773-3706.

Thank you for your help.
Sincerely,

Jean F. Coppola *Frances G. Gustavson*

Jean F. Coppola, Ph.D.
Pace University

Frances G. Gustavson, Ph.D.
Pace University

This first part of the survey seeks demographic information. Please check the appropriate boxes in answer to the question.

What is your gender? ☐ Male ☐ Female

What is your current age? _____

What is your race?
☐ African American/Black(non-Hispanic)
☐ Hispanic
☐ Asian
☐ White/Caucasian (non-Hispanic)
☐ Other (please Specify) _____

What is your religious affiliation?
☐ Protestant
☐ Catholic
☐ Muslim
☐ Jewish
☐ Do Not have a religious affiliation
☐ Other (please specify) _____

What year are you presently in?
☐ Freshman
☐ Sophomore
☐ Junior
☐ Senior

What is your major? _____

How interested in working with seniors (60+)?
☐ Very Interested
☐ Interested
☐ Somewhat Interested
☐ Not Interested

How many courses have you taken related to seniors (60+)? _____

Why did you take this course?
☐ Fulfill Civic Engagement/Service Learning (AOK1) requirement
☐ Fulfill Major requirement
☐ Elective Requirement
☐ Other (please specify)

Have you previously worked (jobs or internships) with seniors (60+)?
☐ Yes
☐ No

Have you had any volunteer experience working with seniors (60+)
☐ Yes
☐ No

Have you ever lived with a senior (60+)?
☐ Yes
☐ No

The second part of the survey seeks insight into your interest in working with the senior (60+) population. Please check your rating to the questions below.

Statement	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
1. Older people deserve the same rights and freedom as others.	☐	☐	☐	☐
2. It is best that old people live where they won't be bothered.	☐	☐	☐	☐
3. The company of most old people is quite enjoyable.	☐	☐	☐	☐
4. It is sad to hear about the plight of the old in our society these days.	☐	☐	☐	☐
5. Old people should be encouraged to speak out politically.	☐	☐	☐	☐
6. Most old people are interesting, individualistic people.	☐	☐	☐	☐
7. I personally would not want to spend much time with an old person.	☐	☐	☐	☐
8. Most old people should not be allowed to renew their driver's licenses.	☐	☐	☐	☐
9. Old people can be very creative.	☐	☐	☐	☐
10. I would prefer not to live with an old person.	☐	☐	☐	☐

	Interest				No Interest
11. How would you rate your interest in advocacy for aging?	5	4	3	2	1
12. Please rate your knowledge about a senior (60+) person's					
a. Health (physical and mental)	5	4	3	2	1
b. Social well-being	5	4	3	2	1
c. Economic Security (financial)	5	4	3	2	1
13. How likely would you be to?					
a. Discuss aging issues with your classmates?	5	4	3	2	1
b. Encourage others to become involved in aging issues?	5	4	3	2	1
c. Work with other college students to form an aging committee?	5	4	3	2	1
d. Meet with your local congress person about aging issues?	5	4	3	2	1
e. Go to Albany to discuss aging issues in New York State?	5	4	3	2	1
f. Go to Washington, D.C. to discuss aging issues in New York State?	5	4	3	2	1
14. How interested are you in community-service learning experiences with seniors?	5	4	3	2	1

15. Please select the aging issues are you particularly interested in.

- ☐ End of Life Care
- ☐ Health/Disease Prevention
- ☐ Role in Society
- ☐ Social Changes in Aging
- ☐ Financial
- ☐ Sensory Function
- ☐ Assistive Devices and Technologies
- ☐ Cognitive Functioning (Memory, learning)
- ☐ Resources and support systems

Please check the appropriate boxes in answer to the question.	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. I want to learn how to use the computer.	☐	☐	☐	☐	☐
2. I feel comfortable using a computer.	☐	☐	☐	☐	☐
3. I prefer college students teaching me computers instead older adults.	☐	☐	☐	☐	☐
4. If I had the opportunity to choose between using a mouse or a touching the screen, I would choose a mouse.	☐	☐	☐	☐	☐
5. I am comfortable with the font size on the computer monitor screen.	☐	☐	☐	☐	☐
6. I prefer working in groups instead of one-on-one.	☐	☐	☐	☐	☐
7. Through the use of a computer I will gain valuable information.	☐	☐	☐	☐	☐
8. I expect to learn a new way to communicate (email).	☐	☐	☐	☐	☐
9. Using a computer makes me tense and is an unpleasant experience.	☐	☐	☐	☐	☐

10. expect to feel happy to come to	☐	☐	☐	☐	☐
Feel free to add comments and anecdotes below and on the back of this form. ***Thank you!***					
opportu-nity, I would pre-fer to give voice commands to the computer instead of using the mouse.	☐	☐	☐	☐	☐
14. Given the opportu-nity, I would pre-fer to give voice commands to the computer instead of using the keyboard.	☐	☐	☐	☐	☐
15. I feel the Internet web pages are too cluttered to read easily.	☐	☐	☐	☐	☐

APPENDIX 4. PRE-TEST FOR SENIORS

The pilot version of this test was very similar. We're still learning the best questions to ask, and haven't been able to locate an appropriate survey. The format used for seniors is 14 point bold Verdana font, filled out with help from students as part of meeting each other. This survey is being developed as part of the gerontechnology research (see panel reference).

Finally, apologies for the formatting mess at the end.