Connecting Generations Through Technology:
Evaluating Older Adult & Student Mentor Program Outcomes

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Purpose
◆ Cyber-Seniors®: Connecting Generations is an international, intergenerational program that connects college students and/or high school students with older adults. The program helps older adults learn to use technological devices and programs while providing students valuable skills in teaching and communicating.
◆ Four organizations implemented the program from January-May 2016: (1) Wexford-Missaukee High School (Career Tech Center) in Cadillac, MI; (2) Volunteers for Community Impact (VCI) non-profit organization in Orlando, FL; (3) Boys and Girls Club of Greater Washington Fort Branch, Washington DC; and the (4) Engaging Generations: Cyber-Seniors Program at the University of Rhode Island (URI).
◆ Each organization completed an 8-10 week program during Spring 2016 semester that included a total of 247 older adults and 153 students who provided 1,344 volunteer hours in their communities.

Methods
◆ Student mentors and older adult participants who completed program took pre- and post-surveys (either online or paper copy) that included both close- and open-ended questions.
◆ To gather additional qualitative data, university students also maintained in-depth observation logs of their sessions and completed reflection papers based on their experiences.
◆ Research questions:
 • Were there differences in scores before and after participation in the program for both older adults and young adults? What indicators showed improvements?
 • For which of the experiences (YES scales) did young adults report the highest scores?
 • Do qualitative findings support any of the quantitative outcomes?

Data Collection & Analysis
◆ All quantitative data was gathered/entered into Survey Monkey and then converted into SPSS Statistical Software files for analysis.
◆ Qualitative data was entered into NVivo qualitative software for analysis.

Older Adult Characteristics
◆ Average age: 74.3 years, Range: 51-88 years
◆ 81% Female, 19% Male
◆ 82.2% retired or disabled, 14.3% employed, 3.6% looking for work
◆ 53.4% have less than $30k income, 46.5% $40k-$100k+

Student Characteristics
◆ Average age: 20.79 years, Range: 12-42
◆ 68.4% Female, 31.6% Male
◆ Average number of program hours: 10.7, Range: 2.0-32.5

Table 1. Older Adult Pre/Post Scores

Who?	Question	Pre-Test Mean	Post-Test Mean	Paired Samples t test	Effect size (Cohen's d)	% showing improvements
All	Lubben Social Network Scale (LSNS-6)[1] N=46	16.77	16.94	t=-0.34, p=.73	-.05	45.45%
LSNS<avg	Lubben Social Network Scale (LSNS-6)[1] N=18	10.94	12.78	t=2.23, p<.05	-.53	61.11%
All	Social Engagement (SE) Measure[2] N=34	5.82	8.47	t=-.185, p=.86	-.03	47.06%
SE<avg	Social Engagement Measure N=16	6.01	7.13	t=-2.15, p<05	-.57	43.75%
All	I'm not good with technological devices[4] N=45	2.93	2.36	t=3.67, p<.01	.53	48.89%
All	I use technological devices many ways in my life*** N=46	2.72	3.07	t=-2.07, p<.05	-.31	43.47%
All	I like working with technological devices N=39	2.92	3.10	t=-1.23, p=.23	-.20	33.33%
All	Working with a technological device makes me very nervous N=45	2.42	2.22	t=1.46, p=.15	.22	28.89%

[1] From Lubben et al., (2006); [2] Derived from Glass, DeLeon, Bassuk, & Berkman (2006); [3] Burckhard & Anderson (2003); [4] 10 Likert scale questions about computer attitudes from Loyd & Gressard (1984) & Farkas & Murthy (2015), other variables included: Technological devices do not scare me at all., I like working with technological devices, Working with a technological devices makes me nervous. Answer Choices: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

Table 2. Student Pre/Post Scores

Question	Pre-Test Mean	Post-Test Mean	Wilcoxon Signed Ranks Test	Effect Size (Cohen's d)	% showing improvements
Attitudes Towards Aging Scale[1] N=40	27.97	29.09	Z=-2.35, p<.05		60%
Fear of Older People Measure[2] N=40	20.93	21.40	Z=-1.56, p=.12		47.5%
New General Self-Efficacy Scale (NGSE) [3] N=35	33.38	34.04	Z=-0.89, p=.38		51.4%

[1] From the Psychological Growth subscale of the Laidlaw et al. (2007) Attitudes Toward Ageing Scale (modified for younger adults); [2] Subscale from the Anxiety about Aging scale developed by Lasher & Faulkender (1993); [3] Developed by Chen, Gully & Eden (2001);

Table 3. Student Mentor Experiences

Youth Experience Survey (YES) Scales (N=56-58)	Scores range from 1-4 Mean (SD)	% showing scores of 3-4 on the scale
Effort	3.26 (0.64)	73.2%
Problem Solving	3.18 (0.76)	64.3%
Leadership and Responsibility	3.11 (0.78)	67.9%
Time Management	3.10 (0.72)	73.2%
Group Process Skills	3.04 (0.73)	66.1%
Feedback	3.02 (0.87)	64.9%
Goal Setting	3.01 (0.73)	64.3%
Identity Reflection	2.99 (0.74)	66.1%
Identify Exploration	2.97 (0.70)	62.5%
Cognitive Skills	2.94 (0.76)	56.1%

Other scales (with lower scores) include: emotional regulation, physical skills, diverse peer relationships, prosocial norms, integration with family, stress, negative peer influences

Qualitative Participant Outcomes
For Older Adults:
Built More Confidence with Technology
• "It has built my confidence and knowledge of certain applications I was not familiar with." *Older Adult Participant from Boys & Girls Club*
• "Having patient, kind, knowledgeable teaching has enabled me to not be depressed with these expensive devices I purchased and used nominally. Now I feel uplifted about technology rather than depressed. It has opened up a new world for me." *Older Adult Participant from URI*
Enhanced Connections to Community & Student Mentor
• "I had a very great girl that taught me how to navigate Facebook and set up a page for an organization I belong to." *Older Adult Participant from Wexford-Missaukee Career Technical Center*
• "Discovering wider connections with the public… and meeting my cyber buddy." *Older Adult Participant URI*
For Students:
Gained Professional Skills (e.g., patience, problem-solving, communication)
• "Patience, patience, patience, and I need to learn how to better describe things that have become so second nature to me." *Student from the VCI program*
Reduction in Aging Stereotypes
• "Cyber Seniors redefined the negative perceptions forced upon me about the elder community." *URI Pharmacy student*

Future Research
• Implement a quasi-experimental approach in which data is gathered from non-participants to compare to current participants
• Infuse training for students to help older adults learn to use various apps & programs related to health (e.g., tracking health data, using health portals, tracking medication use)