Technology-Mediated versus Face-to-Face Intergenerational Programming

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ABSTRACT. Elderly computer novices received 1-on-1 e-mail training, which enabled them to communicate electronically with elementary school-aged pen-pals. A traditional intergenerational visiting program was conducted concurrently. Program evaluation revealed that the intergenerational visiting program was rated favorably by 88% of the participating seniors and the intergenerational e-mail program was rated favorably by 57% of the seniors. Yet, only 6 (out of 23) seniors expressed interest in continuing to e-mail their pen-pals beyond the program period. While technology may never take the place of human contact for some seniors, increased computer support as well as arranging for e-mail
pen-pals to meet in person might help boost the popularity of this form of intergenerational communication.

KEYWORDS. E-mail pen-pals, senior-child interaction, nonfamilial

INTRODUCTION

Intergenerational communication between non-family members often takes the form of scheduled visits of school-aged children to a senior facility. This type of interaction is very popular, and the research literature has many descriptions of benefits to both old and young such as positive change in one’s perceptions of the other generation (Carstensen, Mason, & Caldwell, 1982; Newman, Faux, & Larimer, 1997; Aday, Rice, & Evans, 1991; Cummings, Williams, & Ellis, 2002), increased empathy toward seniors (Schwalbach & Kiernan, 2002), increased self-esteem in children (Bocian & Newman, 1989; Proller, 1989), increased prosocial behaviors in children (Lambert, Dellmann-Jenkins, & Fruit, 1990), feeling more in touch with one’s community (Carstensen et al., 1982), and supplying a positive experience for seniors (Kuehne, 1992). Yet, many excellent intergenerational visiting programs survive for only 1 or 2 years because the sponsoring agencies disband, a key individual leaves the program, the initial grant or funding source expires, or the amount of time involved in coordinating and transporting the children to meet with the seniors becomes a burden (Hamilton et al., 1998).

Recognizing the value of intergenerational programming as well as the need for an alternative mode of intergenerational communication between non-family members, we examined the usefulness of an intergenerational program in which both children and elderly persons interacted as e-mail “pen-pals” for a period of 6 months. An e-mail program has the benefits of ongoing communication and connectedness without the time and monetary constraints that typically plague traditional face-to-face intergenerational programs. Prior to undertaking this project, we expected that communicating through e-mail would be attractive to children who, in general, enjoy using computers and are proficient with e-mail, and we were hopeful that the seniors would also react positively to the program. Previous research on computers and healthy, ac-
tive seniors has shown that when older adults gain experience with computer tasks, their attitudes toward computer technology become more positive (Jay & Willis, 1992) and are comparable to those of younger or middle-aged persons (Czaja & Sharit, 1998). However, in a group of frail seniors—77.5% of whom were considered “vulnerable” on the basis of health, poverty level status, and recent (within the previous 5 years) loss of mobility, significant other, and/or income, Billipp (2001) found mixed reactions to computer use. For instance, at the conclusion of the 3-month period of personalized in-home computer training, 87% of the seniors said that they would not choose to have a computer in their houses (Billipp, 2001). While research has indicated that older persons, relative to their younger counterparts, are at a disadvantage when using computers due a variety of experiential, physiological, and cognitive factors (as summarized in Westerman & Davies, 2000), one should not conclude that elderly persons are not able to use computers. Indeed, researchers have found that many frail elderly persons do master how to send e-mail independently when provided with intensive support from tutors as well as continuous practice (van Berlo & van Valen, 1998; Nahm & Resnick, 2001). In order to give every possible advantage to the seniors in our intergenerational e-mail pen-pal program, we modeled our tutorials on the findings of previous research such that we offered ongoing individualized e-mail instruction and ample opportunity for the seniors to practice.

The present study was conducted in order to explore whether or not frail seniors with little or no computer experience are interested in participating in an intergenerational e-mail pen-pal program. In addition, as we were curious as to whether or not face-to-face contact is a necessary component for effective intergenerational programming, we compared outcomes of our intergenerational e-mail program with those of a traditional intergenerational visiting program.

**METHODS**

*Participants.* A total of 69 seniors from a suburban federally subsidized apartment building (occupancy = 278) were recruited for this study. We did not assign the seniors to groups, but rather let them choose according to their interests, as we felt we could not ethically deny program membership to any interested senior. Of the 69 seniors, 27 seniors enrolled in both the intergenerational e-mail pen-pal and visiting programs, 11 in the intergenerational e-mail pen-pal program only,
4 in the intergenerational visiting program only, and 27 seniors participated in neither program and served as a control group. Since the visiting program only group consisted of only 4 seniors, this group was excluded from statistical analyses; however, we have presented mean and percentage data from those in the visiting program only group throughout this paper in order to allow for preliminary comparisons with the other 3 groups.

**Procedure.** All residents of the senior apartment building were invited to attend a group meeting in which we described the upcoming intergenerational e-mail and visiting programs, and interested persons were recruited at that time. Seniors were also recruited by word-of-mouth (i.e., snowball referrals). Once a senior provided written informed consent for participation, we collected demographic, health, background data, and psychosocial data as well as information pertaining to computer use during an interview with the senior. Data pertaining to program outcomes were obtained at the termination of the intergenerational programs.

**Initial Assessments**

**Demographics.** We recorded the senior’s date of birth, gender, marital status, level of education, country of origin, and number of years living in the United States.

The mean age for the group of 69 seniors was 83 years, with the mean age ranging from 80 to 86 years across the 4 groups (see Table 1). The majority of the seniors were female, although men made up about half of the participants in the e-mail pen-pal program only and in the visiting program only groups. Significant differences existed between the 4 groups with regard to marital status. Specifically, 55% of the seniors in the e-mail pen-pal program only group were married (or living as married), while only 27% of the control participants, 11% of those in both intergenerational programs, and none of the seniors in the visiting program only group were married ($X^2_{(2)} = 7.95, p = .019$). As is suggested by the data presented in Table 1, a significant relationship existed between gender and marital status for this sample in that 63% of the men were married in comparison to only 38% of the women being married ($X^2_{(1)} = 11.03, p = .001$). Significant differences did not emerge between groups with respect to level of education, with most participants having graduated high school (and some having received higher degrees) (see Table 1). While there were no significant differences between groups with respect to country of origin, seniors in the e-mail pen-pal program
TABLE 1. Demographic, health, background, psychosocial, and computer use data for seniors participating in the intergenerational e-mail pen-pal and visiting programs, the intergenerational e-mail pen-pal program only, the intergenerational visiting program only, and the control group.

<table>
<thead>
<tr>
<th></th>
<th>E-mail pen-pal and visiting programs (n = 27)</th>
<th>E-mail pen-pal program only (n = 11)</th>
<th>Visiting program only (n = 4)</th>
<th>Control group (n = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (mean)</strong></td>
<td>84 years</td>
<td>80 years</td>
<td>86 years</td>
<td>83 years</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>82% female</td>
<td>55% female</td>
<td>50% female</td>
<td>70% female</td>
</tr>
<tr>
<td><strong>Marital status</strong> a (%)</td>
<td>married</td>
<td>married</td>
<td>married</td>
<td>married</td>
</tr>
<tr>
<td><strong>Education</strong> (% high school grad or above)**</td>
<td>85%</td>
<td>90%</td>
<td>50%</td>
<td>85%</td>
</tr>
<tr>
<td><strong>Country of origin</strong> (% born in U.S.)</td>
<td>70%</td>
<td>46%</td>
<td>50%</td>
<td>82%</td>
</tr>
<tr>
<td><strong>Number of years in U.S. b (mean)</strong></td>
<td>78 years*</td>
<td>52 years</td>
<td>65 years</td>
<td>79 years*</td>
</tr>
<tr>
<td><strong>Self-reported health</strong> (% with good to excellent health)**</td>
<td>70%</td>
<td>91%</td>
<td>75%</td>
<td>63%</td>
</tr>
<tr>
<td><strong>Walking aids</strong> (% who use a walking aid)**</td>
<td>26%</td>
<td>18%</td>
<td>50%</td>
<td>41%</td>
</tr>
<tr>
<td><strong>MMSE (mean)</strong></td>
<td>26.0</td>
<td>28.2</td>
<td>23.5</td>
<td>24.8</td>
</tr>
<tr>
<td><strong>Time with grandchildren c</strong> (% who say it is not enough time)**</td>
<td>44%</td>
<td>82%</td>
<td>33%</td>
<td>24%</td>
</tr>
<tr>
<td><strong>Minutes of TV on a weekday d (mean)</strong></td>
<td>113</td>
<td>96</td>
<td>75</td>
<td>176</td>
</tr>
<tr>
<td><strong>Leave building</strong> (% who go out daily)**</td>
<td>82%</td>
<td>73%</td>
<td>50%</td>
<td>67%</td>
</tr>
<tr>
<td><strong>Loneliness</strong> (% sometimes or always lonely)**</td>
<td>63%</td>
<td>27%</td>
<td>100%</td>
<td>56%</td>
</tr>
<tr>
<td><strong>Depressed affect</strong> (% with depressed affect)**</td>
<td>48%</td>
<td>27%</td>
<td>75%</td>
<td>48%</td>
</tr>
<tr>
<td><strong>Connectedness to community</strong> (% who feel connected)**</td>
<td>48%</td>
<td>43%</td>
<td>0%</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Computer experience</strong> (% with experience)**</td>
<td>26%</td>
<td>46%</td>
<td>0%</td>
<td>22%</td>
</tr>
<tr>
<td><strong>e-mail experience</strong> (% who use e-mail)**</td>
<td>11%</td>
<td>27%</td>
<td>0%</td>
<td>11%</td>
</tr>
</tbody>
</table>

aNot married includes widowed, divorced, separated, and never married; \( \chi^2 (2) = 7.95, p = .019 \)

b\(F(2,59) = 6.82, p = .002\); *group is significantly different from e-mail pen-pal only group (Scheffe test, p < .05)

cTime spent includes both visits and telephone calls; \( \chi^2 (2) = 10.48, p = .005 \)

d\(F(2,62) = 3.77, p = .029 \)

Note: Data from the visiting program only group were not included in the statistical analyses due to the small n.
only group had lived in the United States for significantly fewer years (mean = 52 years) than had those who participated in only the visiting program (mean = 65 years), those in both the e-mail and visiting programs (mean = 78 years) and those in the control group (mean = 79 years) \( (F_{(2,59)} = 6.82, p = .002; \text{Scheffe test < .05}) \).

**Health information.** This category included measurements of self-reported health, use of walking aids, and cognitive status. Health was tapped using the global self-rated health item from the SF-36 (Samani, Willett, & Ware, 1988). Seniors supplied information as to whether or not they used walking aids (including a cane, walker, or motorized scooter) while in the apartment building. Cognitive status was assessed via the Mini-Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975), which was administered by a research assistant trained in standardized administration and scoring procedures. Low scores on the MMSE are suggestive of cognitive impairment and scores above 24 indicate adequate cognitive functioning.

There were no differences between groups with regard to the 3 indicators of health (see Table 1). The majority of seniors in all 4 groups reported their health as “good” to “excellent.” As to the use of walking aids while in the apartment building, this percentage ranged from 18% to 50% across the 4 groups. The mean score on the Mini-Mental State Examination (MMSE; Folstein et al., 1975) was 26 (out of 30) for the total group of 69 participants, and for the individual groups was 28.2 for those in the e-mail pen-pal program only group, 26.0 for those in both the e-mail pen-pal and visiting programs, 24.8 for the control subjects, and 23.5 for those in the visiting program only.

**Background data.** We asked participants how they felt about the amount of time they spent (either in person or by telephone) with their grandchildren (grandnieces or grandnephews and great-grandchildren were also included). We also recorded the number of minutes of television watched on an average weekday, and whether or not the seniors tended to go out of the apartment building on a daily basis.

As many as 82% of the seniors in the e-mail pen-pal program only group felt that they did not spend enough time with their grandchildren while this proportion was significantly lower for those in both the e-mail pen-pal and visiting programs (44%), the visiting program only (33%), and the control group (24%) \( \left( \chi^2_{(2)} = 10.48, p = .005 \right) \) (see Table 1). A significant difference was seen between groups with respect to the number of minutes that seniors spent watching television on a typical weekday, with those in the control group watching the most television
Overall, more than half of the participants tended to go out from the apartment building on a daily basis.

**Psychosocial data.** This category included items pertaining to loneliness, depressed affect, and whether or not the participant felt connected to the community. Loneliness was tapped using an item from the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980), Are you lonely?, which was rated as 1 (never), 2 (sometimes), or 3 (always). The 4-item Geriatric Depression Scale (GDS4) (D’Ath, Katona, Mullan, Evans, & Katona, 1994) was administered by a research assistant. If a participant gave a response suggestive of depressed affect to any of the 4 items, this person was coded as positive for depressed affect. Finally, participants were asked how strongly they agreed or disagreed with this statement: I feel that I am connected to my community.

While statistical analysis did not reveal significant differences between groups with respect to our measurement of loneliness, the lowest percentage of loneliness was found in the e-mail pen-pal program only group (27%), and the highest, in the visiting program only group (100%) (see Table 1). As had been seen with the loneliness data, the same trend toward differences between groups emerged in the assessment of depressed affect in that the occurrence of depressed affect was least in those seniors in the e-mail program only group (27%) and greatest for those in the visiting program only group (75%). As to connectedness to one’s community, none of those in the visiting program only group agreed with the statement that they were connected to the community while little variability was seen across the other 3 groups (48% of those in the e-mail pen-pal and visiting programs, 43% of those in the e-mail pen-pal program, and 44% of the control participants agreed or strongly agreed that they were connected to their community, see Table 1).

**Computer use.** Participants were asked how often they used a computer for any purpose and how often they used e-mail. Both items were rated on a 7-point scale, ranging from 1 (never) to 7 (several times a day). For those seniors who were currently using e-mail, we asked them to name their relationships with the person(s) with whom they communicated.

Those in the e-mail pen-pal program only group had comparatively more experience with computers as well as e-mail than did those in the other 3 groups, although differences between groups were not significant (see Table 1). Nine of the 69 seniors were currently using e-mail. Specifically—of those in the e-mail pen-pal program only group, 2 se-
niors e-mailed their grandchildren and 1 senior e-mailed friends; of those in the e-mail pen-pal and visiting programs, 2 seniors e-mailed friends and family (excluding grandchildren) and 1 senior e-mail relatives; and, of those in the control group, 3 seniors e-mailed friends and family (including grandchildren).

**Outcome Measures**

*Program evaluation.* Following the completion of both intergenerational programs, participants rated the extent to which they had enjoyed each program [each item rated as: 1 (no), 2 (some of the time), 3 (most of the time), 4 (all of the time)]. Participants were also asked these 3 open-ended questions about each program: What did you like best about the program? What did you dislike about the program? If you could, what would you change about the program? For those who participated in both intergenerational programs, we also asked if they had a preference for one program over the other or if they had liked the programs equally.

The program evaluation phase was completed for 3 of the 4 seniors in the visiting program only group (75%), for 3 of the 11 persons in the e-mail pen-pal program only group (27%), for 20 of the 27 seniors who participated in both the visiting and e-mail pen-pal programs (74%), and for 13 of the 27 control participants (48%). Reasons for not completing the program evaluation phase included failing health and death, unwillingness to complete the questionnaire, loss of interest in the intergenerational programming, and for the e-mail pen-pal program only group, a language barrier (i.e., four seniors in the e-mail pen-pal program only group spoke little English, and the Russian-English translators who had been available during the first 3 months of the project were no longer available at its completion).

*Interest in e-mail.* At the termination of the e-mail pen-pal program, we asked participating seniors if they would like to continue e-mailing or to start e-mailing any person(s). Whenever we received an affirmative response, we recorded the relationships of these persons to the seniors (e.g., pen-pal, relative, friend).

*Description of intergenerational programs.* Both intergenerational programs were conducted concurrently. These programs were scheduled to coincide with the elementary school’s 9-month calendar such that the visiting program began in October and ended in May and the e-mail pen-pal program ran from December through May. The e-mail
The pen-pal program had a later start date as it took time to set up the computer center for the seniors.

**Intergenerational E-Mail Pen-Pal Program**

Each senior was assigned an elementary school-aged e-mail pen-pal (range: 2nd to 5th grade). Pen-pal dyads did not know each other prior to the e-mail communication.

At no cost to the seniors, we set up a computer center on the ground floor of their apartment building (complete with free tech support), and offered 1-on-1 e-mail tutorial sessions. A sign-up sheet was provided so that seniors could schedule a tutorial session at their convenience. We offered daytime as well as evening hours and also a choice of 5 tutors—1 research assistant, 2 senior volunteers, and 2 high school student volunteers. Sessions typically lasted from 45 minutes to 1 hour. In addition, the computer center remained open 24 hours a day, allowing the seniors the opportunity to practice whenever they wished.

The level of need for e-mail assistance varied among the seniors. While some seniors chose to sit at the computer and type their e-mails, others preferred to dictate their e-mail to a tutor and then to push the send button upon completion. The seniors were provided with a large print written protocol for sending e-mail which started with how to turn on the computer, how to get connected to the Internet, how to send an e-mail, and how to turn off the computer (as well as everything in between). The seniors were also provided with a list of writing prompts that included items such as: Write about yourself (your name, where you were born, former occupation); Write about what life was like without television, VCRs, and computers; and, write about current events.

**Intergenerational Visiting Program**

Seniors participated in structured activities with a group of 20 elementary school children (from grades 2-5) who visited monthly for a total of 8 visits. Every month, we put a reminder flyer in each senior’s mailbox 2 days before a visit, and reminded each senior by phone on the day before a visit. Each visit lasted approximately 90 minutes. Activities included a talent show, playing board games (e.g., checkers), group sing-alongs, solving a crossword puzzle (the clues were based on things that the seniors and children had done on the previous visit), 1-on-1 interviews of the seniors by the children, and always juice and cookies (which were very well received). With the exception of introducing a
senior and child who were both fluent in Spanish (the child spoke little English), we did not pair up specific seniors with children as we found it impossible to predict which senior-child dyads would hit it off and did not want to force friendships.

Data analysis. Data were entered separately onto a computer by 2 different persons, and then checked and corrected for data entry errors. Differences between the 4 groups were examined using chi-squares and analyses of variance. All analyses were performed via SPSS 11.0.

RESULTS

Data analysis revealed that 88% of those who responded to our exit questionnaire had enjoyed the intergenerational visiting program most or all of the time, and 57% had enjoyed the intergenerational e-mail pen-pal program most or all of the time (see Table 2). As to there being a preference for one program over the other, we found that 2 seniors preferred the intergenerational e-mail pen-pal program to the visiting program, 6 seniors preferred the intergenerational visiting program to the e-mail pen-pal program, and 11 seniors liked the programs equally. Findings specific to the two programs are described below.

Intergenerational E-Mail Pen-Pal Program

Over the course of the 6-month program, the seniors sent a total of 131 e-mails to their pen-pals and received 110 e-mails from the chi-

<table>
<thead>
<tr>
<th>TABLE 2. Counts and percentages of seniors’ responses to: Did you enjoy participating in the intergenerational e-mail pen-pal program? The intergenerational visiting program?</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail pen-pal program (n = 24)</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Some of the time</td>
</tr>
<tr>
<td>Most of the time</td>
</tr>
<tr>
<td>All of the time</td>
</tr>
</tbody>
</table>

a Some seniors participated in both programs.
b The senior who said “No” to enjoying the visiting program attended 5 of the 8 visits.
An example of e-mail correspondence between an intergenerational pen-pal dyad is provided in the Appendix.

At the termination of the e-mail pen-pal program, thirteen seniors responded to the open-ended question, What did you like best about the e-mail pen-pal program? The response given most often (n = 8) was communicating with/getting to know a child. The seniors were very enthusiastic about how much they had enjoyed the questions and answers that were part of their e-mail correspondence with the children. Other responses to the open-ended questions included: the challenge of learning something new, the convenience (the computers and tutors were all on the ground floor of the apartment building), and “I just liked it.”

Fifteen participants responded to our open-ended question, What did you dislike about the intergenerational e-mail pen-pal program. Seven reported no dislikes, 3 reported problems with learning to use a computer, one senior had “no need for it,” one felt that the computer’s response time was too slow, one was frustrated because she had wanted to meet her pen-pal in person, one senior referred to the program as a “big, fat nothing,” and one senior asked us, “What should I write to a 10 year old?”

When we asked the seniors what we could do to improve the e-mail pen-pal program, we received the following suggestions: extend the program to include e-mailing grandchildren; let the pen-pals meet in person at least one time prior to initiating e-mail communication; and, provide basic computer instruction.

Special relationships were formed as a result of the intergenerational e-mail pen-pal program. In one instance, a 9-year-old girl and her senior e-mail pen-pal had exchanged several e-mails and were starting to build a relationship, when the senior was suddenly hospitalized due to a fall and subsequent broken hip. When the senior was well enough to be transferred to a rehabilitative facility, the child insisted on going to visit her. Had it not been for the e-mail pen-pal program, it is doubtful that these two would have ever met face-to-face. In another case, one pair of pen-pals had so much fun corresponding through their e-mails that the child decided to join the visiting program so that the two could continue their relationship in person. Unfortunately, one week prior to the child’s first visit with the group, the woman was injured in a fall and underwent arm surgery. She was in so much pain that she found it difficult to go out from her apartment. However, meeting her pen-pal was so important to this woman that she pulled herself together, attended the visit, and was thrilled to meet her pen-pal in person.
At the conclusion of the e-mail pen-pal program, we asked the seniors if they would like to continue the e-mail communication with their pen-pals. Of the 23 who responded to this question, 6 (26%) said that they would like to keep in touch with their pen-pals while 17 (74%) were not interested. It is noteworthy that the 6 seniors who wished to continue e-mailing their pen-pals had actually spent time with their pen-pals during the intergenerational visiting program. Yet, spending time is clearly not the only factor that determines whether a senior will want to maintain an intergenerational e-mail relationship as there were 4 seniors who met their pen-pals during the intergenerational visiting program and were not interested in continuing to e-mail them at the end of the program.

In addition to the 6 seniors who were interested in continuing to e-mail their pen-pals beyond the termination of the e-mail pen-pal program, another 9 said that there was a person(s) (other than a pen-pal) to whom they were interested in e-mailing, yielding a total of 15 seniors who were interested in continuing to send and receive e-mails. Three seniors named only one person, while the remaining 12 seniors named multiple persons. Specifically, 40% of these seniors (6/15) wished to continue e-mailing their pen-pals, 67% (10/15) wanted to e-mail their grandchildren, 60% (9/15) wanted to e-mail their children, 67% (10/15) expressed interest in e-mailing other relatives (excluding children and grandchildren), and 33% (5/15) wanted to e-mail friends. Clearly, these seniors had enjoyed e-mail as a mode of communication and had generalized its use beyond the intergenerational e-mail pen-pal program.

Intergenerational Visiting Program

While all those enrolled in the visiting program attended at least one visit, 2 seniors attended all 8 visits and another 3 seniors attended 7 of the visits. An additional 21 seniors, who chose not to be enrolled in either program or as control participants, attended some of the visits. Of these, 15 attended 1 visit, three seniors attended 2 visits, and one senior attended 4 of the 8 visits.

At the exit interview, we asked this open-ended question, What did you like best about the intergenerational visiting program? We obtained responses from 21 seniors, all of whom gave answers that pertained to the children rather than to features relating to programming (e.g., convenience of the meeting place). Nine seniors simply enjoyed being with the children, three liked to observe the comfortable interaction between the children and seniors, and another 2 seniors noted how smart the
children are. Other responses given were: the age of the children, playing games with the children, when the children smiled, noticing differences from when the senior was a child, anticipating the children’s visits, and one senior liked that she got to see her e-mail pen-pal in person.

When asked what they had disliked about the intergenerational visiting program, 15 seniors said that they had liked everything about the program, one reported difficulties due to poor eyesight, one felt nervous around the children and had trouble hearing, and one senior felt there was not enough time to speak with the children (although the visits lasted 90 minutes).

As to changes for the visiting program, suggestions from the seniors were: introduce phrases in languages other than English (since many of the seniors and children were originally from non-English speaking countries), meet more often than once a month, and arrange for the e-mail pen-pals to come to the visits.

The best part for us was watching as special senior-child relationships developed over the months. For instance, there was a child who spoke little English at the onset of the intergenerational visiting program as her family had recently moved to the United States from South America. She was having difficulty at school due to both the language barrier and cultural differences. We approached a senior who is fluent in Spanish and had lived in South America for many years, and he agreed to come to the visits and to sit with this child. We are happy to report that the two became close friends. In another case, a senior became so attached to a child that she met at the intergenerational visits that she requested him as an e-mail pen-pal, and we gladly complied. She frequently e-mailed this child in between the monthly visits.

**DISCUSSION**

Both intergenerational programs were enjoyed by more than half of the seniors. A larger percentage of seniors enjoyed the intergenerational visiting program, presumably because they preferred meeting the children in person rather than as an unknown on the Internet. However, this does not mean that the e-mail pen-pal program was a failure. We found that 57% of the seniors enjoyed the intergenerational e-mail pen-pal program most or all of the time. Moreover, 11 out of 19 seniors liked it equally well to the intergenerational visiting program, and another 2 seniors preferred it to the visiting program. Taken together, these findings
suggest that an e-mail pen-pal program is a viable form of intergenerational communication.

At the onset of this project, we found that a specific group of seniors was interested in participating exclusively in our intergenerational e-mail pen-pal program. Specifically, these seniors were more likely to have had some experience with computers and e-mail, were comparatively healthier, more educated, and had lived comparatively fewer years in the United States (4 of the 11 seniors could read and write simple English but were not able to speak the language fluently). Also, they felt that they had too little communication with their grandchildren. The salience of this subgroup is supported by results of an earlier study that found that the seniors in a Internet training program who chose to use e-mail (in comparison to those who tended to limit their Internet experience to the World Wide Web) had previous computer experience, more education, and self-reported health of good or excellent (White et al., 2002). Not only were we able to discern a profile to describe the type of senior who was drawn to our intergenerational e-mail pen-pal program, we also saw that a different profile emerged for those seniors who chose to participate in only the visiting program. In this case, the seniors tended to be frailer, with respect to physical and emotional functioning (see Table 1).

We are aware that our allowing self-selection of seniors into programs rather than using randomized group assignment introduced bias into the subject selection process. However, we felt that this was necessary as we wished to be sensitive to the preferences of the seniors. Had we not permitted seniors to select the programs in which they wished to participate, we would have missed clues about the type of senior who is drawn to intergenerational programming that includes a technology piece but does not include a face-to-face component versus the type of person who seeks in-person contact. We propose that intergenerational researchers must sometimes move outside of the rigid guidelines for quantitative research design in order to really understand the underlying processes influencing their programming.

In order to improve our intergenerational e-mail pen-pal program, we asked the seniors for their suggestions. The two suggestions given most often by seniors were: provide basic computer instruction; and, let the pen-pals meet at least one time prior to starting their e-mail correspondence. As to the first suggestion, since we tailored each session to each senior’s needs, basic computer training was included in the tutorial sessions whenever requested. However, this was not enough for some of the highly motivated seniors who we referred to a computer class at a
nearby senior center. For the majority of seniors, however, we were hesitant to institute basic computer instruction as part of the tutorial sessions for they seemed challenged enough by just the task of e-mailing. Further discussion with seniors revealed that some had been frustrated with the amount of time spent connecting to the Internet (we used dial-up with Erol’s) and with the number of pop-up advertisements that they needed to navigate through to get to their e-mail mailboxes (we used Yahoo for e-mailing). Long waits led them to think they had done something wrong or the computer was broken, and having a screen cluttered with advertisements made it difficult for the seniors, many of whom have decreasing visual functioning, to find the icon that they wanted to click on. While more expensive, the use of a cable Internet service as well as pop-up blocking software would make e-mailing much faster and less cluttered for the seniors involved in future intergenerational e-mail pen-pal programs.

The second suggestion by the seniors concerned meeting the pen-pals in person. This seems to be a good idea as previous studies of intergenerational pen-pals who communicated through the regular United States mail service reported positive outcomes when the pen-pals met in person. Bales, Eklund, and Siffin (2000) found that an 8-week period of intergenerational pen-pal letter writing followed by 4 hour-long face-to-face intergenerational meetings with structured activities served to promote positive attitudes about the seniors and to foster relationships between generations. In addition, Kiernan and Mosher-Ashley (2002) have reported about a letter exchange program that began as simple correspondence between generations and over the course of 8 years, has expanded to include face-to-face structured activities such as the children visiting the senior center, the seniors visiting the classroom, and an intergenerational holiday concert. An intriguing idea for future study would be a combination intergenerational visiting/e-mail pen-pal program in which seniors and children first develop a relationship in person during scheduled visits, and then decide if they want to extend this relationship to include e-mail correspondence. While we found that the 6 seniors in our study who had wanted to continue e-mailing had all met their pen-pals in person, we also found that face-to-face contact alone is not sufficient as an additional 4 seniors who had met their pen-pals in person were not interested in continuing to e-mail. These findings lead us to suggest that meeting several times in person is not adequate for ensuring an enjoyable e-mail pen-pal experience, while meeting and developing a mutually satisfying relationship may be the necessary components. Clearly, this is a topic for future research.
The potential of intergenerational e-mailing extends beyond the pen-pal program presented here. Contact through e-mail could be used for a variety of intergenerational programming including outreach for seniors who are uncomfortable with face-to-face programs due to a language barrier, mentoring of at-risk children, and of course, helping seniors keep in touch with their grandchildren. A senior participant from the present study remarked that e-mailing was the best way for her to communicate with her grandchildren as they were always busy with homework and chores. Moreover, future intergenerational programs could move from e-mail pen-pal programs to supervised intergenerational chat rooms. Results from a study of Internet training for seniors living in sheltered housing in the Netherlands revealed that the seniors were not very interested in e-mail but were very eager to be involved in ongoing chat groups with people they did not know (van Berlo & van Valen, 1998).

In summary, while e-mail communication is clearly different from the traditional intergenerational programming, this type of intergenerational contact is enjoyable to elderly persons, filling a need for a distinct subset of seniors. Based on the suggestions of the seniors in the present study, we are now in a good position to develop intergenerational Internet programming that will appeal to a larger number of seniors.

REFERENCES


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APPENDIX

Example of e-mail correspondence between an intergenerational pen-pal dyad.

Dear Amy (child):
I am your pen-pal. I moved from New York to Rockville 3 years ago. How long have you lived in Rockville and how long have you been going to your school?

Do you like your teacher? Do you like school? I only remember when I went to Kindergarten and my teacher lived in my apartment. So I was the teacher’s pet. She taught me how to knit. Then we took a picture with our teacher.

When I was 16 my mother left me in Europe to go to America. Then she sent papers for me to come to America with her. I went with my uncle on a boat. When I came off the boat I lost my shoe. I ran to my mother and lost my shoe because I was so excited to see her. I had not seen her for 4 or 5 years.

I look forward to hearing from you.

Good Luck,
Bessie (senior)

Dear Bessie,
I am 9 years old. I am in the third grade. I actually live in Chevy Chase. I love my school and my teacher. It was my birthday yesterday. I got a flute! To me it would be very exciting if I hadn’t seen my mom in 4 or 5 years and then I finally saw her. I look forward to hearing from you again!

Love,
Amy

Dear Amy,
I am very glad for you that you got a flute. I have been here 3 years already. I am very happy because my son takes me places. He takes me to doctors. He took me from Queens to here because I was all alone after my husband died. I had 4 rooms. What did I need with 4 rooms? When they took me here, they lost some stuff from my place. But what can I do? My daughter lives in Seattle.

It took a long time for my mother to bring me to this country. I lived with my uncles and I gave up that she would ever bring me. But my mother didn’t give up.

When my son went to college, he got an A on an essay he had written about a story I had told him. I have stories to tell. I’ll keep them for the next time.

I hope to hear from you soon,
Bessie

Dear Bessie,
I think it’s very good that your son does those things for you. He sounds like a good boy. Now I want to tell you something about my flute. Yesterday I would have had my 5th flute lesson but I got a big headache so I didn’t go. But I am feeling much better now. My family is thinking about going to Paramus, New Jersey for Spring Break since my mom’s family lives there. But we might not because my dad is very busy with work.

Love,
Amy

[Note: Some details have been changed to protect confidentiality.]
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