Evidence Based Library and Information Practice

Evidence Summary

Collaborative Learning is an Effective Method for Improving the E-health Literacy of Older Adults in the Community

A Review of:
Xie, B. (2011). Older adults, e-health literacy, and collaborative learning: An experimental study. *Journal of the American Society for Information Science and Technology, 62*(5), 933-946. doi: 10.1002/asi.21507

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Abstract

Objective – To determine whether collaborative learning strategies in an informal class setting can improve electronic health literacy skills of older adults.

Design – Pre- and post-test instruments used to measure effects of an educational intervention.

Setting – Small group classes offered at two branches of a large, publicly funded, urban public library in Maryland.

Subjects – A total of 111 adults aged 52 to 91, mean age 70.4 (SD 8.0), completed the study. The majority of participants were from minority populations (66% African American, 3% Latino, 3% Asian). Thirty three percent of participants reported an annual household income below $20,000. Eight percent were non-native English speakers. The majority of participants had low-level or no computer/Internet experience prior to the study.

Methods – Collaborative learning strategies were used in small group hands-on computer classes to deliver a standardized curriculum (*Helping Older Adults Search for Health Information Online: A Toolkit for Trainers* from the National Institute on Aging). Strategies employed were: explicit statement of group/participatory nature of class, periodic peer shared reflection times during class,

active encouragement of discussion between peers, hands-on work with partners, group discussion of real-life questions from participants, and structured shared reflection time at the close of each session. Participants were recruited through local advertisements. No incentive other than the free classes was offered. Groups met for two hours, twice a week for four weeks. Assessment was via pre and post-tests. General computing knowledge/skills were measured using objective tests of abilities. Questions from several established scales were adapted for additional assessment. E-health literacy was measured using questions of perceived skill and comfort in finding health information online; perceived usefulness of the Internet for help making health decisions; and perceived importance of the Internet for obtaining health information. Subjects were also asked to report on changes to their health behaviour/decision-making post intervention, and learning effort expended during the study. Additional questions measured psychological adjustment to later life, attitudes toward computers, attitude toward the aging experience, and attitude toward the collaborative learning method and the class.

Main Results – A dependent *t*-test analysis indicated strong significant gains post-test in computing/Internet knowledge and skills, and in e-health literacy efficacy (perceived skills/comfort with using the Internet for health information and decision-making). Pre-test results showed participants to be low on these measures, leaving much room for improvement. Perception of the usefulness and importance of the Internet for health decision-making also showed strong gains.

Significant positive changes were also found in these areas of attitude: reduction of computer anxiety, attitude toward physical changes associated with aging, and improvement in attitude toward the collaborative learning method.

A majority of participants indicated altering health-related behaviours as a result of the class, including changing the way they think about diet or exercise, changing the way they cope with a condition, and changing their approach to maintaining health.

The results showed no significant change in self-esteem, self-efficacy, and psychological attitudes toward aging. Computer interest and efficacy also showed no significant change, perhaps because participants already measured high in these prior to the intervention.

The amount of time participants spent preparing for class correlated significantly to e-health literacy efficacy and perceived importance of Internet health information, but not to other outcome measures.

Group composition (gender, peer familiarity, prior computer experience) did not affect outcomes; however composition was uneven, as groups were small and variable in size, and 71% of participants were female.

Conclusion – The study supports the use of a collaborative learning approach to effectively deliver e-health literacy instruction to older adults in a community setting.

Commentary

The author has made a valuable contribution to the literature on methods for educating older adults for improved e-health literacy. Briefly, e-health literacy refers to the effective retrieval and appropriate application of electronically delivered health information for personal use. The introduction and literature review give a concise summary of the research on collaborative learning techniques. The author highlights significant gaps in the literature, particularly in regards to collaborative learning efficacy with older adult populations outside a formal educational setting. This study begins to address that gap by testing the efficacy of incorporating collaborative learning techniques into public library classes for older adults.

Methodological limitations (which the author notes) include the lack of randomization in subject selection and lack of a control group. Additional weaknesses are that 4.8% of participants admitted to the study were younger than the "60 and above" age specified in the study plan, and the study had a drop-out rate of 35%, though the author notes that the demographics of the group as a whole remained fairly consistent.

Statistical analysis using a dependent *t*-test is appropriate for a study without a control group. The improvements in both general computer literacy and e-health literacy measures as a result of the intervention were quite strong. Participant self-reports of the impact on their health related behaviours and decision-making are also compelling. Noting the low amount of preparation outside of class, the author speculates that participants may have had limited access to computers outside of class time, and recommends provision of extra-curricular access for future interventions.

This study has particularly valuable implications for outreach librarians and public health educators. The author provides a useful introduction to the collaborative learning method, with which educators of adult populations may not be familiar. It is notable that the standardized *Toolkit for Trainers* from the National Institute on Aging, while using other active learning techniques, incorporates very little true collaborative learning as detailed in this article.

Busy practitioners may undertake educational efforts without any rigorous assessment and with impact taken largely on faith. This study supports the value of providing and funding such efforts, particularly for low-income and minority older adults, groups especially at risk of having low health literacy.