DESIGN OF INTERACTIVE COMPUTATIONAL MEDIA

THE CHALLENGES OF CREATING SOLUTIONS FOR THE AGING POPULATION

Guest Lecture by
Anne Remmel, B. Sc., M. Ed.,

January 12, 1998

INTRODUCTION

- Why the aging population is important
- Aging baby-boomers (born 1947-1966)
- In 1996, there were 9.8 million 35 year olds, almost 33% of the total popuation.
- Canada's baby boom was the loudest of Western nations-not only did Canadian women average 4 children each, but significant immigration
- when 1/3 of the population talks about a product-we notice
- Planning and products powerfully driven by demographics
- During the 1990s, the front end of the baby boom will cause the 45-54 age category to explode by 50% while the back end, aged 35 to 44 will increase by 20 % . (David Foot Boom Echo and Bust)

- The boomers will be the largest cohort of seniors
- in Canada-powerful shifts-look at low-fat foods, golf vs. tennis, Martini clubs vs. cheap-wines, safety features in cars, downtown condos, cruises, oldies radio stations, etc.

WHAT DO WE KNOW ABOUT AGING?

- popular myths, stereotypes and Ageism
- images from own families
- beliefs and values drawn from different cultures, e.g. Chinese and monster homes
- first-hand experience

MY EXPERIENCE/ BACKGROUND

- Baycrest Centre for Geriatric Care -
- 4 years/Director Education and Organizational Development
- Developed Seniors Computer Club
- worked with introducing technology to seniors
- developed self study center
- graduate degree in Adult Education
- undergraduate in occupational therapy

- doctoral studies in innovation and technology
- interest in how you introduce technology-the people side of the equation, technology adoption,
- creativity, innovation and leadership

FIELDS OF RESEARCH IN AGING

(reference list)

1.Psychology
-focus on memory and neurological changes
-Rotman Research Institute
-normal memory research
-depression and aging

2. Sociology of aging (Gerontology)
-group behaviors
-cultural differences
-aging workforce
-families with aging members

3. Geriatric Medicine

-study of diseases in aging
-complexities and multiplier effects
-medical, social and psychological factors combined
-disease processes -impact on function
e.g. Altzheimers, Parkinson's Osteoarthritis, heart disease,
-consider impact on daily functioning

4. Family Therapy

-impact of aging on families
-multi-generational therapy issues
-acceptance of elderly within families
-children who have moved away-lonliness
-conflicts, isolation

5. Adult Education

-adult learners and life-long learning
-self-directed learning
-maturation processes and learning
-how adults learn different from children-bring own experience, relate to past knowledge
-environment of learning NB
-Kolb and Fry, Learning Styles- some like to start with experimentation, some like concepts first, some like reflection first, some like action first-

6. Biological/physiological

-the process of cell-level aging
-chemical changes e.g. estrogen production
-changes in brain function

Adoption of Technology

1. What do we know about how people adopt new technology?
2. How do we know what will be useful for the user?
3. How does aging impact adoption of software/hardware?
4. How do we have to anticipate/accommodate the aging population’s special needs and requirements?

NEEDS ASSESSMENT

1. Do not assume that “aging population” is a homogeneous group
2. Conduct your own needs assessment-ask the client directly
3. On-line computer clubs e.g. Seniors Computer Information Project
   http:www.mbnet.mb.ca/crm/
-Older Adults and Learning Technologies in partnership with University of Regina

4. Interview directly e.g. Baycrest Seniors Club-conducted mini-needs analysis found “social needs” most important

SOME CONSIDERATIONS FOR DESIGN PROBLEM DEVELOPMENT

1. Physical challenges of the elderly: dexterity, vision, hearing, tremors, reach, strength, reaction time, etc.

e.g. seniors club-mouse moves too fast, icons too small, sounds distorted, multiple stimuli confusing

2. Psychological challenges: do not want to appear foolish; how to relate to past experience, how to make meaningful

3. Learning styles how to accommodate different learning styles, how to reach all types of

learners, how to build in memory supports etc.

4. Social factors: many seniors are isolated, housebound, e.g. e-mail a natural tool for keeping in touch, use the social leverage to learn new tasks-family contact a strong motivation

5. Motivations: many seniors limited by mobility computers become important ways to stay connected to the world, learning motivation e.g.hobbies, collections, keeping the brain stimulated key to healthy aging

6. Memory challenge: loss of memory, greater need for cues and reminders, repetitive learning patterns, hooks to past experiences

EXAMPLES FROM THE LITERATURE

1. Robotic technologies: systems that can sense ,think and act (Englehardt, Gougler)

2. Care for care-givers-support for decision-making in Alzheimer care (Brennan, Moore, Smythe)

3. Movement disorders, with advanced age mouse use becomes difficult-assistive computer interfacing techniques become critical (Riviere, Thankor)

4. Memory prosthesis-significant increase in compliance in taking medications(Milch, Evans, Hillebrand)

5. Use of mouse to strengthen grasp

6. Computer games to assess attitudes, responses, motivation of chronic schizophrenics

CONCLUSION

1.ask the user, test with the user, include the user in design