Learning Objectives

• Understand the technology user experience of older adults with and without low vision.

• Explore the benefits and challenges of computer tablet technology to enable engagement in occupational participation by older adults with and without low vision.

• Identify and demonstrate ability to teach appropriate computer tablet technology solutions to address ADL, IADL, leisure, and social participation needs of older adults using specific case examples.

Agenda

• Informing: Brief overview of technology and older adults

• Experiencing: Program examples
  • Accessibility features
  • Apps
  • Teaching strategies
  • Case studies

• Imagining: Applying it to your practice

Informing

• Technology and older adults
• Uses
• Benefits
• Challenges

Technology

• Impacts almost all facets of daily life (home, work, and health domains)

• Can enable efficient, effective, and independent performance of daily occupations

• Can enhance social and leisure participation

• Older adults report significantly more “likes” than dislikes” related to technology

(Digital Divide

• Combination of an aging population and an explosion of new technology created a grey digital divide (Gardner, Kamber, & Netherland, 2012)

• Older adult Internet use (Pew Internet Project, 2010)
  • 50%+ of those 65+
  • 30% of those 74+ go online
  • 5% of those 85+ use the Internet

• Tablet technology has potential to decrease the grey digital divide (Werner, Werner, & Oberzaucher, 2012)
Older Adults and Technology Use

If older adults have skills and equipment, they use technology for same reasons as those younger

- Involvement in online social & political activism
- Retrieval of medical & mental health info
- Participate in online shopping, banking, gaming, and learning

(Pew Internet Project, 2010)

Older Adults and Technology Use: Benefits

- **Feeling in control**—for example, can keep up with news and feel “sharper”
- **Important part of daily life**—participants spoke about the many daily uses
- **Keeping the brain active**
- **A way of relating to others**—communication
- **Personal gains from computer use**—confident, satisfied, etc.

(Aguilar, Boerema, & Harrison, 2010)

Older Adults and Technology Use: Challenges

- Lack of knowledge / experience
- Fear of unknown
- Inconvenience (interruption)
- Need support by those technically more experienced
- Complex user interfaces
- Access (acquisition and maintenance costs)

(Gardner, Kamber, & Netherland, 2012; Mitzner et al., 2012)

Older Adults and Tablet Technology: Benefits

- Less technical and “less daunting look”
- Ease of handling of device
- Touch screen interface easy to access / intuitive
- Increased self-efficacy (feeling could learn additional features on own)
- Mainstream
- Can be personalized

(Arroba et al., 2001; Werner et al., 2012)
Older Adult Populations: Need for Technology

- Increased risk of health problems associated with: (Hawkley et al., 2010; Wilson et al., 2007)
  - Social isolation
  - Loneliness
  - Depression

- Increased risk of social isolation and depression with:
  - Older adults with vision loss
  - Older adults with physical challenges
  - Older adults and cognitive challenges

Purpose

AARP Foundation Connecting to Community™ was aimed at preventing social isolation and increasing the social network of older adults by teaching the use of computer tablet technology and Internet connectivity.

Participants

- Senior housing residents
- 50+ years
- Proficient in English
- Benefit from program
- Consent to 26 week program

Participant Demographics

55 Participants

Age

<table>
<thead>
<tr>
<th>Range</th>
<th>63-95 years</th>
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<tbody>
<tr>
<td>Mean</td>
<td>79.6 years</td>
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Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Female</th>
<th>Male</th>
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<tbody>
<tr>
<td>Count</td>
<td>44</td>
<td>11</td>
</tr>
</tbody>
</table>

Phase One

- 10 weeks
- Two training sessions with one open lab
Phase Two

- 10 weeks
- Two training sessions and one open lab

Phase Three

- 4 weeks
- One class/week

Training Strategies

- Written manual with instructions
- Demonstration/return demonstration
- Group instruction (problem solving together)
- Homework!
- Integrate into daily routine
- Start each session with show and tell
- Multicomponent

Homework Examples

- Taking photos to share in class next week
- Collect email addresses of family/friends
- Enter email addresses into contacts
- Send instructors/family email messages
- Reply to messages from instructors
- Integrate tablet into daily routine:
  - Checking email at same time as postal mail
  - Using it as a kitchen timer, medication reminder
  - Using it to check the weather or news

Your Turn

- Small groups of 2-4 (+ at least one device)
- Choose an application on the device
- Teach your partner:
  - What it is
  - Why he/she would find it helpful
  - How to use it
- Discussion:
  - Which teaching strategies did you try?
  - Which ones were most effective? Why?
  - What types of homework could be given to follow up?

Training Tips

- Demonstrate on your own device if possible
- Allow client to operate their own device
  - Exception: Download/set-up of an app
- Instruct family not to use client’s device
  - Setting changes
  - Rearranged icons
  - Additional unwanted apps
Helpful Accessories

- Protective case
- Stylus
- External keyboard
- External stand
- Method for carrying it

Case Study: Ruth

- Widowed
- Children & family live at a distance
- Previous computer use limited to email only
- Interest in learning tablet use for social and leisure participation
- 92 years old
- Hard of hearing; chronic back pain
- Uses rolling walker for ambulation

Tablet Technology

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Supplements current social and leisure participation&lt;br&gt;  - Strengthens relationships&lt;br&gt;  - Expands network&lt;br&gt;  - Expands methods of leisure participation&lt;br&gt;  - Decreased perceived loneliness&lt;br&gt;  - One way to stay relevant</td>
<td>- Tap technology&lt;br&gt;  - Upgrades and updates&lt;br&gt;  - Tech support&lt;br&gt;  - Internet access&lt;br&gt;  - Design features not always intuitive for an older adult population</td>
</tr>
</tbody>
</table>

Application to OT

<table>
<thead>
<tr>
<th>New Tablet User</th>
<th>Existing Tablet User</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Enhanced communication&lt;br&gt;  - Social and leisure participation&lt;br&gt;  - Integrating new device into existing habit and routine&lt;br&gt;  - Occupational justice</td>
<td>- Continue using tablet as part of daily routine despite changes in health status&lt;br&gt;  - Management of health conditions&lt;br&gt;  - Medication reminders&lt;br&gt;  - Monitoring vitals&lt;br&gt;  - Communication with health care team</td>
</tr>
</tbody>
</table>

iPad Training Program

- Training Development
  - AARP Foundation (older adults)
  - Oklahoma School for the Blind’s iPad Accessibility Training Programs (Blindness)
- Assessment
  - Determination of individual goals
- Weekly Plan (10 week program)
  - Develop training manual
- Homework
  - Follow-up - “essential for learning”

Experiencing

- Program description
- Applications used
- Teaching strategies
- Case study and program outcome
- Application to occupational therapy
Purpose

The purpose of the program was to begin to bridge the technology gap by evaluating the effectiveness of small group instruction in the use of a tablet computer to enhance the performance of daily occupations by older adults with low vision.

Participants

- 65 years of age or older
- Speak & understand English
- Low vision
- No significant cognitive impairment
- Willingness to explore new technology
- Access to iPad and Wi-Fi

Participant Demographics

<table>
<thead>
<tr>
<th>Ocular Condition</th>
<th>Age</th>
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<tbody>
<tr>
<td>AMD</td>
<td></td>
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<tr>
<td>Corneal Transplant</td>
<td></td>
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<tr>
<td>Optic Neuritis</td>
<td></td>
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<tr>
<td>Retinitis Pigmentosa</td>
<td></td>
</tr>
<tr>
<td>n=1</td>
<td></td>
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<td>n=1</td>
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<td>n=2</td>
<td></td>
</tr>
<tr>
<td>n=1</td>
<td></td>
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</tbody>
</table>

Training Strategies

- Used AARP study as a guide
  - Written manual with instructions
    - Accessible format (18+ font)
- Homework!
  - Including reminder Videos
- Integration into daily routine
  - Included as part of homework

Training Tips

- Review previous weeks’ materials and homework before moving on to new material
- Allow clients to operate their own device
  - Exception: Download/set-up of an app
- Provide ample homework in order to practice new skills
  - Provide follow up during the week/check-ins

Lesson Plan Week 7

- Discussion on how they include the iPad in their daily lives
  - *ask if anyone was interested in stylus’s – so we can help them with resources to get one
- Review of last week’s homework/troubleshooting
  - Start off having them show us opening the app store
- Continuation of Apps Lesson
  - Divide into groups
  - Other group – continue with apps
    - Pandora (L,L,C)
    - HeyTell (L,L,C)
    - CamFind (L,L,C)
    - Facetime/Skype (L,L)
    - Color & Money ID (all)
Homework Examples

- Taking photos to share in class next week
- Recording messages/music to share in class
- Collect email addresses of family/friends
- Enter email addresses into contacts
- Send instructors/family email messages or videos
- Reply to messages from instructors
- Integrate tablet into daily routine:
  - Checking email at same time as postal mail
  - Using it as a kitchen timer, medication reminder
  - Using it to check the weather or news

Accessibility Features for Visual Impairment

- Built-in accessibility
  - Contrast/Brightness
  - Text Size
  - Bold Text
  - Keyboard
  - Siri
- Custom Accessibility Features
  - Zoom, Large Text, Voice Over
- Apps

Contrast

Settings:
- General
- Accessibility
- Invert Colors

Text Size

Accessibility features: Siri

Press and hold the Home button

“2 Dings”
Accessibility Feature: Zoom

- **Zoom**
  - Drag three fingers to zoom
  - Double-tap to zoom in and out

- **Follow Focus**
- **Zoom Keyboard**
- **Show Controller**

Accessibility Feature: Window Zoom

- **Zoom Region**
- **MAXIMUM ZOOM LEVEL**
- **8x**

Accessibility Feature: Larger Text

- **Larger Accessibility Sizes**
- **Set Larger Text**
  - Drag the slider below

Apps

- **Magnification**
  - Increase size of material, each has slightly different features (e.g. light, contrast)
  - Vision assist
  - Easy Reader Pro
  - ZoomReader
  - Magnify
  - Camera Zoom- Makeup

“Hello, Nashville City. Nashville city, hot spots and things to do. Welcome to Nashville!”

Jennifer
### General Apps

<table>
<thead>
<tr>
<th></th>
<th>iOS</th>
<th>Android</th>
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<tbody>
<tr>
<td>Audio Books</td>
<td>Audible</td>
<td>Audible</td>
</tr>
<tr>
<td>Memory Aids</td>
<td>AlarmReminders + Timers</td>
<td>Fillbox Alert</td>
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<tr>
<td>Navigation Aids</td>
<td>BlindSquare</td>
<td>WalkyTalky</td>
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<tr>
<td>Money Management</td>
<td>LookTel Money Reader</td>
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<tr>
<td>Speech to Text</td>
<td>AccessNote</td>
<td>ShoutOUT</td>
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<td>Text to Speech</td>
<td>SayText</td>
<td>Classic Text to Speech Engine</td>
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<td>Color Identification</td>
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<td>Object Identification</td>
<td>TalkingTag</td>
<td>TalkingTag</td>
</tr>
<tr>
<td>Shopping information</td>
<td>All Access Talking Menus &amp; More</td>
<td>All Access Talking Menus &amp; More</td>
</tr>
</tbody>
</table>

### Case Study: Linda

- Linda is a 69 y/o retired registered nurse
- New to the iPad; has used traditional low vision devices in the past
- Legally blind (Glaucoma, Corneal transplant OS, enucleation OD)
- COPM: putting on make-up (1/1); sending emails (1/1)
- SRVFP: difficulties in reading, writing, locating clothing
- Interested in learning how to use the iPad for make-up, emails, leisure & social participation

### New thing I learned

- how to use folders to help organize my mail. It is the best. I love it.
- how to navigate the iPad.
- how to use all the apps on the iPad for many new experiences.
- how to use email.

### Memory from Class

- the yummy homemade cake we shared at our party for the last day of class and how great this experience was.
- it was okay if I did not always finish all of my homework.
- sneaking Lois and Evelyn onto the trains. We felt like teenagers.
- the great teachers and fun we had getting to class each week.

### New App

- tried out the new app Spotify during my time in class to play some great music.
- liked using the camera app to take wonderful photos. It lights up my life.
- liked using the email for sharing photos and keeping in touch with friends and family.
- liked the photo app to create memories.

### Tablet Technology

#### Benefits

- Supplements current social and leisure participation
  - Improves access
- Decreased perceived loneliness
- Helps with remaining current
- One device with multiple purposes
- ADL and IADL applications

#### Challenges

- Tap technology
- Upgrades and updates
- Tech support
- Internet access
- Design features not always intuitive for an older adult population

### Application to OT

#### New Tablet User

- Enhanced communication
- Social and leisure participation
- Integrating new device into existing habit and routine
- Occupational justice

#### Existing Tablet User

- Continue using tablet as part of daily routine despite changes in health status
- Management of health conditions
  - Medication reminders
  - Monitoring vitals
  - Communication with health care team
- Adapt to changing needs

### Imagining

- Application to practice
- Application to BASC
Imagine

1. How can you use an app discussed today to facilitate your client’s occupational performance?
2. You’ve been given a grant for three iPads to use in your current practice. How will you use them?
3. How can tablet technology enhance program outcomes in your practice setting?
4. How can tablet technology be used to meet society’s occupational needs?

Board or Specialty Certification

- Formal Learning
- Program Development
- Program/Service Evaluation
- Client-Based Case Study
- Holistic Practice Case Study
- Advocating for Change
- Professional Development Plan

Resources and References

Tablets: Great resource
Android & IOS

- [http://www.youtube.com/watch?v=5KnVBYDwKkQ&feature=youtu.be](http://www.youtube.com/watch?v=5KnVBYDwKkQ&feature=youtu.be)
- [http://www.youtube.com/watch?v=GV_iLcfzuEg](http://www.youtube.com/watch?v=GV_iLcfzuEg)

Contact Information

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- Sue Berger  sueb@bu.edu

References

References (cont.)


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