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Communication in Context: Research Opportunity Program Course - Report Series # 8

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Report Series - # 8

Communication in Context: Research Opportunity Program Course

Project Team

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About SERC (Sheridan Elder Research Centre)

Through applied research the Sheridan Elder Research Centre (SERC) will identify, develop, test and support implementation of innovative strategies that improve the quality of life for older adults and their families.

1. Wherever possible, older adults participate in the identification of research questions and contribute to the development of research projects at SERC.
2. We conduct applied research from a psychosocial perspective which builds on the strengths of older adults.
3. Our research is intended to directly benefit older adults and their families in their everyday lives. The process of knowledge translation takes our research findings from lab to life.
4. SERC affiliated researchers disseminate research findings to a range of stakeholders through the SERC Research Report Series, research forums, educational events and other means.
5. A multigenerational approach is implicit, and frequently explicit, in our research.
6. To the extent possible our research is linked to and complements academic programs at the Sheridan College Institute of Technology and Advanced Learning.

EXAMPLES OF SERC RESEARCH

The Built Environment	Information & Communication Technology (ICT)	Human Communication	Public Policy	Other research interests
- Indoor/Outdoor Design - Graphic Design	- Accessible computing - Age appropriate games	- Hearing/low vision - Vision - Language	- Elder Abuse - Ageism	- Self image/self esteem - Care-giver support

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1. Purpose

1.1 Research Opportunity Program Course

Alena Sandhu and Danielle Minghella worked on a Research Opportunity Program course that is available to students in their second year. The objective of these courses is to expose students to undergraduate research at an earlier stage in their academic experience.

The ROP courses are organized differently than regular academic courses. The individual ROP courses differ depending on the nature of the professor's research project.

In general, the courses are more individualized, allowing the students to work closely with their professors. The setting does not take place in regular classrooms but in laboratories, research facilities, naturalistic settings, etc.

Different professors proposed topics and students applied to the research projects they were interested in being a part of. The most qualified students were selected to assist the professors on their research.

The students were either required to work together with another student or on their own. The students have the unique opportunity to gain research experience, and meet with experts in the field of their interest. This enables them to decide whether or not they intend to pursue future endeavors within the particular field.

The project Danielle and Alena were assisting on will be in progress for many years and is still in its early stages of development. The project concerns communication and development and aging, particularly the effects of sensory and cognitive declines in aging adults.

This project was supervised by Professor Kathy Pichora-Fuller, who is a faculty member of the department of Psychology at the University of Toronto-Mississauga campus.

1.2 Background

This project focuses on how context can be structured to help older communicators in the early stages of dementia. Hearing and vision loss in aging, as well as changes in cognition, can challenge communication. The use of supportive context can offset difficulties to some extent.

This study examines how different contexts facilitate or disrupt communication of older adults in the early stages of dementia.

Sensorimotor abilities, such as, vision, hearing, taste and smell, in most cases, decline in late adulthood (Papalia, Sterns, Feldman, & Camp, 2002). However, there is much individual variation. Sensorimotor abilities tend to be the outcome of a complex series

of processes involving the nervous system. These abilities are affected by developmental changes and it may take longer for the brain to assess a situation (Papalia et al., 2002). Various hearing and vision disorders can impair communication. For instance, tinnitus, a persistent ringing/buzzing in the ears and presbycusis, which is gradual hearing loss, will have a significant effect on communication (Papalia et al., 2002).

Dealing with hearing loss is important in order to offset difficulties regarding communication. Hearing aids, which amplify sounds, can be helpful, however, most wearers complain that they are hard to adjust to, since background noise is amplified, as well as sounds the wearer wants to hear (Papalia et al., 2002).

FM devices, which are used in the study, have the feature that allows the wearer to choose exactly what he/she desires to hear and ignore the irrelevant sounds. The use of FM devices can compensate for the communication difficulties to some extent.

1.3 Objectives

The objectives of the study:

- a) How communication changes with age;
- b) How dementia effects communication;
- c) Observational research methods using audio-visual digital recording technology;
- d) Development and use of outcome measures to evaluate interventions to improve the communication context; and
- e) Ethics requirements for human research.

The objective of the study was to further our understanding of how communication changes with age and how the confusion, forgetfulness and personality changes accompanying dementia affect communication (Papalia et al., 2002).

Initially, the study was a naturalistic observation, which took place mainly in an elder day program facility. It involved observing and recording the participants' communication behavior. In order to do so it was important to learn how to operate the highly advanced technological equipment used in the study.

The outcome measures being considered as interventions to improve the communication context include FM systems.

One of the objectives already completed was receiving permission from the Canadian Institutes of Health Research in order to continue the research project and take it to the next level.

2. Methodology

2.1 Methods Overview

Participants: Clients at Sheridan Elder Research Center attending Alzheimer's Day Program

Procedure: Observation of communication behaviors during regular activities

- 1) Baseline observations before FM assistive technology
- 2) Intervention observations using FM devices

Apparatus: Used advanced technology allowing detail retrospective analysis

Part of our learning experience was to observe daily activities of clients attending the Sheridan Elder Research Center at Sheridan College in Oakville. The facility was established for research purposes, but it also provides daily care for seniors who suffer from cognitive impairments and are in need of assistance regarding regular daily activities. The participants that took part in the research project were the clients attending SERC.

While working at SERC, we paid special attention to communication behaviors during regular activities. The research that we would eventually like the clients of SERC to participate in would require the use of FM devices that pick up the speaker's voice directly into a microphone. The signal is transmitted by FM – like a personalized radio station. The listener wears a small receiving unit that takes sound directly to the listener's ears.

Advanced audio-visual technology present at Sheridan College was utilized in order to observe the patients participating at SERC.

2.2 Materials

Each of the rooms at SERC is equipped with microphones and cameras. These devices are continuously recording activity in the research center and the recordings are stored for several weeks.

Using specialized software, we were able to upload any samples of interest so that a detailed retrospective analysis on the recordings could be performed.

The cameras were adjusted to a default position in each of the recreation rooms within SERC.

Each camera was usually focused on the tables within each room where most of the group activities occurred. The microphones closest to the tables were switched on so that audio recordings could also be stored.

Prior to analyzing the recordings, we needed to learn how to use the sophisticated software.

After visiting SERC a number of times, we were able to develop a user-friendly instructional manual, which included instructions regarding recording, and video and audio control.

As mentioned earlier, an FM device picks up the speaker's voice directly into a microphone and the signal is transmitted by FM-like a personal radio station. The listener wears a small receiving unit that takes the sound directly to their ears.

We were not yet in the stage in which we can observe the intervention using FM devices. However, we had the opportunity to meet with the manufacturer who is donating this very new assistive technology for the study.

Before the FM devices can be used in the study, a number of tasks need to be completed. At the moment, an audiologist is testing the hearing level of the participants at SERC.

The ethics approval from the Canadian Institutes of Health Research has just recently been received. Therefore, the study using the FM systems will likely occur in the near future.

Listeners will be recorded with and without the devices. The results on the outcome measures will be compared to see if any differences exist.

2.3 Steps in Research Design

- a) SERC orientation observation;
- b) Ethics proposal;
- c) Technology training and practice;
- d) Preparation of instructional manual;
- e) Development of transcriptional system;
- f) Development of outcome measures; and
- g) Participant recruitment.

First, we explored the Sheridan Research Facility. We became familiar with the building itself and how it is equipped to assist the elderly clients in their daily routines, as well as, researchers in the various research projects they plan to conduct there.

We participated in the afternoon activities while paying careful attention to the various aspects of communication that could possibly lend themselves to improvement. We tried to anticipate if any of the current conditions could interfere or disrupt the research.

The next step was to prepare a draft for the Ethics proposal. It included a detailed description of the strategies used to recruit participants, and the labels used in the study. It also explained under which conditions the manufacturer of the FM systems

agreed to donate the devices for the study and how the confidentiality, safety, and health issues had been resolved.

While awaiting the response from the Canadian Institutes of Health Research, we focused on learning how to operate the highly sophisticated surveillance technology equipment.

We attended a number of training sessions and engaged in extensive practice. This eventually led to the development of a user-friendly instructional manual, which includes pictures of the most frequently used screens and simple descriptions of the steps one needs to take to complete the tasks at hand.

In the instructional manual we tried to include all the information necessary for the purposes of our research and kept the technical jargon to a minimum. This should enable anyone in need of using the technology to be able to do so with considerably less training and practice.

After reviewing and analyzing the recordings of the activities taking place in the research facility, we were able to select the activities that seemed suitable in many ways for the research project.

We then needed to develop a strategy to systematically document the various aspects of verbal and non-verbal communication. Since there were many variables that needed to be included for the purposes of this particular study, using a previously-used transcriptional system was not a possible option. The development of the transcriptional system is still in progress.

In order to observe any changes in communication behavior prior, during and after intervention, we need to have outcome measures that will hopefully yield this type of information.

One possible outcome measure is the participant's willingness to use the FM devices across different interactive situations (Pichora-Fuller, 2005).

Once we received the approved Ethics proposal we could move on to the next stage and start recruiting the participants. These will include three types: family members of the participants with dementia, unfamiliar peers of the participants with dementia, and adult students. Only the clients of SERC and their families, who indicated interest in receiving information about opportunities to volunteer for research at SERC, were contacted in writing by the director of SERC, who is not in any way involved in the service delivery (Pichora-Fuller, 2005).

The director's letter provided information about the nature of the study and accompanied the researcher's information sheet and consent form. It is important to note that participants can withdraw from the study at any point in time.

3. How did the Research Opportunity Program Course students benefit from this experience?

- a) Individual work directly with a professor;
- b) Experience working on a team;
- c) Exposure to SERC;
- d) Relate knowledge learned in classroom to real world;
- e) Hands on learning about research;
- f) Attend 2005 Communication and Aging Symposium; and
- g) Opportunity to meet with leading experts in the research area.

This was a unique opportunity for us to observe the work of a university professor and engage in a much more active form of learning than can possibly be done in an ordinary course. We were encouraged to think creatively and make independent decisions, as well as, provide logical reasoning to what led us to make those decisions.

Our professor showed us how to view problems from different perspectives, which influenced our conceptualization of problems making it more research oriented.

The ability to work in teams is beneficial not only in research experience, but in every day life. The ROP course allowed us to become more proficient in teamwork than any other regular academic course.

The exposure to SERC was an eye opening experience that led us to think of what we can do and how we can alter our perspectives on aging. We are determined to promote a respectful attitude and understanding to the elderly population. We hope to use every opportunity to inform our peers about the changes that accompany aging, which should result in a less prejudiced attitude towards the elderly.

In addition, we found it useful to learn about the Sheridan Elder Research Center. We believe it is difficult to learn about research without being able to see it. We were not only able to see it, but also become part of the research team.

We had the opportunity to meet with leading experts in the research area and learn from their speeches at the Communication and Aging Symposium.

This ROP course will certainly influence our future career choices.

4. References

Papalia, D.E., Sterns, H.L., Feldman, R.D., & Camp, C.J. (2002). *Adult Development and Aging* (2nd ed.). New York: McGraw-Hill.