PERSPECTIVES

"MY BRAIN IS STILL WORKING!": CONVERSATIONS WITH CENTENARIANS ABOUT LEARNING IN THEIR SECOND CENTURY OF LIVING

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Abstract

This qualitative research project seeks a deeper understanding of the learning experiences of centenarians and their perceptions of the helps and hindrances they experience in their learning. Eighteen people between the ages of 100 and 106 were interviewed in their own settings. These centenarians reported rich late-life learning experiences such as acquisition of new knowledge, development of new skills and changes in behavior. The majority of meaningful learning experiences occurred through social interactions. Learning on a one-to-one basis was often the preferred approach. Learning through the media, through activities and through adaptations to physical changes were also mentioned. The four major hindrances to late life learning were poor vision, poor hearing, poor mobility and illness. Recommendations for seniors' education programs are discussed

Résumé

Cette recherche qualitative vise à mieux comprendre l'expérience vécue de personnes centenaires, ainsi que les facteurs qui favorisent ou qui inhibent leurs démarches d'apprentissage. Dix-huit personnes âgées de 100 à 106 ans furent interviewées dans leur milieu de vie respectif. Les répondants font état d'une vie riche en apprentissages de toutes sortes, plus particulièrement de l'acquisition de savoirs, d'habiletés et de comportements nouveaux. Les apprentissages signifiants furent réalisés le plus souvent par le biais d'interactions sociales. Les démarches en tandem avec une autre personne paraissent être les mieux appréciées. Au nombre des sources d'apprentissage, on trouve également les médias, les activités quotidiennes et l'adaptation aux changements physiologiques. Les quatre principaux obstacles à l'apprentissage sont les déficits de la vision et de l'ouïe, la mobilité restreinte et la santé défaillante. Quelques recommandations sont mises de l'avant pour la conception de programmes éducatifs destinés aux personnes âgées.

As a mature student returning to academic life, I became intrigued with the subject of learning in late adulthood. From my systematic search of the literature concerning learning in mid-life, I developed a strong personal interest in later life learning. I became aware that I was at a significant landmark in my life. I was a half-century old, half-way to 100 and to becoming a centenarian. I began thinking about learning on an ongoing basis and wondered just what it would be like to be learning in 50 years time. As an adult educator, I also wondered what I might do to make a greater contribution to the learning experiences of older adults. I decided it would be beneficial to know what people on the frontiers of longevity had to say about late life learning; to gain insights, as an adult educator, into the types of programs that might be offered to people in their pre-centenarian years who are

facing the prospect of living to be 100 and beyond. The groundwork for facilitating meaningful older adult education requires a deeper understanding of what our learning needs might entail in the years ahead. This article is based on a study of 18 centenarians aged 100 to 106. The study sought a deeper understanding of learning experiences of centenarians based on the perception of their own learning in this later phase of their lives and their comments concerning the helps and hindrances they experienced in their learning.

It was my belief that learning about learning in late life might lead to improved group or individual learning programs and therefore improved quality of life for older persons. Based on this belief, I began a thorough search of the literature, finding only a small body of literature concerning centenarians; this was partly due to the absence of large populations of centenarians in the past. However, Statistics Canada reported that in 1991, 1,200 Canadians celebrated their 100th birthday, and this group of elders is now the fastest growing group in Canada. As these numbers increase with our improved nutritional and health programs, we are faced with the challenges of providing programs that are appropriate for these older cohorts of learners. Lee, aged 102, stated, "I'm getting old and, [pause] I am old. My brain is still working though!" In order to begin significant work in this area, we must first hear what these individuals have to say about what they value as learning at this phase in life.

To learn from and to teach older adults may require a willingness to re-think strategies of the past. My reflections led to several questions: would older persons who are participating in appropriate courses or individual learning settings enjoy raised levels of self-confidence, more feelings of well-being, and longer periods of diversion from poor health or pain? Why do centenarians discontinue participation in groups when it has been reported that elderly people value interpersonal contacts (Altergott, 1988). How much "disengagement - decreased interaction between an individual and others in society" (McPherson, 1990, p. 135) are elders actually choosing or perhaps unwillingly accepting? Jim said angrily one day, "I dropped out of some good organizations because I can't walk good nor drive, so it's like isolation." If Centenarians are choosing disengagement, how is it accomplished gracefully and to what extent might it be considered a meaningful learning experience? Midwinter (1982) reminds us that as elders become involved in some types of intentional learning process, they begin to regain a sense of control in their lives. How positively might they meet the challenges of learning to adjust as their bodies slow down through natural degeneration processes?

Lack of interest on the part of the older learner may be a major barrier to participation in learning activities (Ventura & Worthy, 1982), while the competing "activity theory" posits that some older individuals slow down but keep active in their areas of interest, or perhaps re-engage or replace lost roles (McPherson, 1990). To what extent are centenarians pleased to give up some activities for more restful days of reflection and new learning? McPherson's (1990) questions concerning some of these areas of interests, replacements or discardings and how these might be addressed by adult educators served to guide this exploratory study.

Learning Perspectives

"Learning" in this study is broadly defined to include a vast array of experiences in the fashion of Perlmutter and List (1982), who suggest that learning phenomena are complex and should be investigated from a broad perspective. Simpson and Weiner's (1989) conceptions of how learning is acquired, also guided the study: "knowledge of a subject or skill [is acquired] as a result of study, experience or teaching; [through becoming] acquainted with or informed of [something]; to hear of, or ascertain" (p. 767). The research also recognized that often what matters to learners is how they see their own processes of learning (Boud & Griffin, 1987).

Learning may be intentional or unintentional. Participants in this study were involved in activities that fell into each of these categories. Deighton (1971) states that incidental learning may be distinguished from intentional learning by the absence of explicit instructions concerning learning materials. Learning is often an information-processing activity in which things noted are transformed into a format or design that may serve as a guide for action or consideration. In some situations "vicarious" learning (sharing imaginatively through others) may occur where there is an absence of some planned performance by the learner, such as reading, observing or listening to others (live, on TV or radio, videotapes, etc.) (Schunk, 1991). Meg, who is 100, commented one day, "I learn a lot from being with other people. They keep me up to date. But there are not many visitors now, they have all passed away (long sigh). But, I still have my niece. She tells me all about what is going on out there. It is important what is going on out there!"

There was considerable evidence that participants engaged in self-directed learning projects of varying magnitudes (Tough, 1971). As adults mature, they become more aware of their needs to orchestrate patterns of learning that are best suited for their individual learning needs. Knowles and Associates (1990) define an adult as "one who has arrived at a self-concept of being responsible for one's own life, of being self-directing" (p. 9). It is not known whether this generalization holds for those who are experiencing dependency and reduced mobility.

People who are curious about a subject often follow their own lead in learning, or they may follow others who seem to have more knowledge in a particular area of interest. As I reviewed personal histories with the centenarians in this study, it was possible to see their patterns of curiosity and recognize how zest for learning is still evident in their lives. I shared with these people the fact that I had returned to university for further studies because "my brains were hungry" for more learning and that new learning experiences were very important for me. This type of sharing sparked discussion about some of the learning experiences and matters of curiosity that were important to them.

Brookfield (1990) comments that in the learning process, people "discard some assumptions and reframe others" (p. 52) to fit their experience of reality. Viewed in this way, learning might be compared to a dance. This process is seldom experienced in a neat sequential pattern; it is more like a kind of "Transitional Mambo". In a

span of 100 years or more, many opportunities for discarding or reframing arise. Through this process, the individual's dance of learning unfolds.

Many adults fear loss of memory, and many older adults fear inadequate learning along with memory loss (Perlmutter & Hall, 1985). Even though memory loss is a major issue for many aging adults, research suggests that actual changes are often minimal (Midwinter, 1982). Older people who forget something will often seize upon this event as proof of mental decline, while a younger person may not. In an appropriate learning setting, the issue is not about memory, but rather whether or not the learning activity is enjoyable or life enhancing. Significant questions might be: Are there feelings of life satisfaction associated with this activity? Has some self-esteem been gained? Did the participants enjoy the experience? As these issues are enlarged upon and anxieties concerning memory are reduced, stress is diminished and learning is often enhanced (John, 1988). This complex array of learning perspectives influenced the conduct of the study to greater or lesser degrees as the interviews unfolded.

Personal Encounters with Late-Life Learners

Several people and events influenced my desire to know more about learning in late life. I have lived among elders in various communities in North and South America who took great pride in their traditional knowledge and their new knowledge and discoveries. Bear Lake Charlie, who was 106 at the time I lived in his village in northern British Columbia and taught in a one-room school there, was actively learning as he experimented with new techniques for snaring rabbits for food. Don Juaquine, in a small village in the Andes Mountains in Colombia, was very excited in his late years as he learned about new varieties of potatoes that educational/agricultural volunteers were introducing to him and to other villagers. Many people along the pathways of my life have led me to embrace the challenges of gathering more details about the experiences of learning in very late life. Kastenbaum (1991) noted that elders may call upon their creativity in later life, even up to their last few days or hours. Poon et al. (1992) found that the cognitive performances of centenarians were sometimes lower than other age cohorts. However, when cognitive activities were dependent on everyday experiences, no age-related problem solving decline was found. Centenarians seemed resourceful because of their practical problem-solving performance. Jim, aged 100, commented on this one afternoon: "I'm learning something new every day, and that's the truth. I just figured out how to hang my ladders on my basement wall last week!" I was pleased to be involved not only in the appreciation of Jim's work, but also in learning this skill myself.

Research Design with Caring in Mind

This study used a qualitative research design. The centenarians involved were living in a variety of situations in the greater Victoria area of British Columbia. They were people older than 100 who expressed an interest in my research and who were interested in speaking with me about their daily living and learning experiences. Some lived alone in houses or condominiums. Some of the people in these home

settings had assistance with cooking, cleaning, and bathing, while some were completely independent. Ruby, age 102, stated as she greeted me at the door, "I not only take care of myself and our home, I also take care of my "baby sister" who is 96!" Several people were living in facilities with intermediate care, in which they took their meals in a dining-room with other residents but had their own or shared living space where they often required very little extra assistance. Others were in extended-care facilities where they had most meals in their own rooms and required some professional care and attention.

Contact with centenarians presented a special challenge. Many hours were spent contacting organizations, committees and individuals to arrange interviews. Through these various channels, 18 people —14 women and 4 men — agreed to participate in the study. I met with some participants only once and with most of them a number of times. Pseudonyms have been used in all written materials to provide anonymity to the respondents.

I conducted audio-taped conversational interviews about the daily activities and learning processes with which centenarians were involved. These kinds of activities are "natural" according to Patton (1987, p. 13) in the sense that they are not planned and manipulated by the investigator. I acknowledge that while attempting to gain insights into the ways that centenarians perceived their personal experiences of learning in late life, I gave attention to certain items, occurrences and comments that were of particular interest to me, and my biases are reflected in the outcomes. Nevertheless, as we talked, I made every attempt to remain as open and receptive as I could to what the centenarians told me through their words, actions, and emotions. Through my participation with each of them, I allowed as many aspects as possible of my "self" (social, psychological, emotional, spiritual, biological, professional, personal) to be engaged in order to enhance my understanding of each of them as individuals.

A conceptual framework, developed during the study, assisted in the handling, organizing and systematic reducing of the data collected. This framework included categories such as: general group themes (e.g., pacing), naturalistic coping skills in late life, personal challenges in present daily lives and energy levels at various times of the day; learning experiences of centenarians with emphasis on interests, helps for learning, and preferences for types of learning; continuity of learning, which dealt with learning histories of the individuals; and barriers to learning, which dealt with hindrances to present-day learning experiences. The data consisted of the already mentioned interviews from audio tapes, observational notes, plus reflections and interpretations. I color-coded data sheets and categorized according to subjects and themes identified in the framework.

I undertook theme analysis in order to discover the emerging foci and patterns contained in the data. Van Manen (1990) describes theme analysis as "the process of recovering the theme or themes that are embodied and dramatized in the evolving meanings and imagery of the work" (p. 78). In my data, a theme emerged as a subject, or an element, or perhaps a repeated experience that struck a resonant chord of common meaning throughout the data. Within each theme, I chose one

person who seemed to represent the essence of that concept, idea or experience to its fullest and enabled that person to speak through his or her own words. I then added my descriptions, interpretations and reflections as I discovered deeper connections and meanings through the analysis of these materials.

The schedule for gathering data was established around the times of day that participants experienced their highest energy levels. Most requested morning interviews but a few enjoyed an afternoon visit. I found that 45 minutes to an hour was an appropriate length for a visit. Near the end of that time, subjects displayed fatigue in a variety of ways.

I explained to participants that I was interested in their learning experiences at this phase in their lives. During our conversations, I asked them questions such as what it was like to be more than 100 years of age; what types of things they were learning and what were their interests; what were helps and hindrances to their learning; and were they interested in writing a little about their learning experiences.

Thoughtful reflections often occurred during the conversational interviews. Perceptions of personal learning experiences in their second century of life were not conscious issues these people had been pondering; therefore, most needed time to think about the questions. I was content to settle into their rhythms and to wait for responses. It was as though we created a dance movement, where sometimes I led and sometimes the centenarian led. We each adjusted our direction and rhythm to the leadership of the other.

At times I asked for words to achieve a deeper understanding of the statements they shared. Often I saw eyes that were searching back through experiences, eyes that did not focus on external images, but rather on internal scenes that were unfolding. At other times they became irritated because they did not understand what I was asking. "What is it that you want from me!" exclaimed Sadie, aged 103, in a high-pitched, impatient voice one morning. I then had the challenge of trying to discover what it was that I really did want to know and how I could explain that appropriately. These were challenging learning experiences for me.

Most of the time there was a cheerful atmosphere as centenarians shared their perceptions of learning. I believe this was partly due to the renewed learning that transpired from re-visiting past experiences through new frameworks. I believe it was also due to the validation of their current learning experiences in later life. I also believe that much of their happiness came from our friendly participation in this learning process and from their speaking and being heard. "I really hadn't thought about my life and what I have been learning in quite this way before," Meg said with a smiling voice as she tipped her head contemplatively. Several people reported that they had a feeling of deeper meaning in their lives as we talked.

Themes from Conversational Interviews with Centenarians

Setting the Stage: General Group Themes

"Age Awareness" was often a topic of discussion. Ada laughed when I asked her how it was to be over 100. "Most people think I look very good for being 101," she said as she patted her silver hair and lifted her chin slightly. "They expect something all wrinkled up or something. Oh I've got my wrinkles, but so has everybody else. I don't let it bother me!"

"The good old days" were mentioned with both positive and negative slants. Meg spoke about the wars that she had lived through and after a brief description she said vehemently, "And I've had enough of war!" Jim had many happy memories of the good old days. "Well" he said, "I was invited to take care of weddings, to sing a song pertaining to weddings, you know, and I have such a song!" This sentence was completed with great enthusiasm and with a note of anticipation punctuating the end. I asked him if he would mind singing me a song and he happily proceeded to do just that.

"Memory" was an important issue also. Cherie, at 102 years, was resting on her bed as we talked and she lamented about her back hurting so that she had to lie down much more than in the past. She used self-comforting tones as she moved her head a little closer to me and laughingly said, "Well, I'm glad I've got my memory anyway. I'm not a dud you know!" I laughed with her and assured her that this was very obvious to me. Inside I felt a little sadness about this reminder that many of us will probably have to do battle with our insecurities about our minds and memories right to the very end.

"Tiredness and Pacing" was a theme that presented itself both through conversation and through demonstration. Ella and I settled into blanketed chairs beside her sunny, warm window and began to chat. She spoke immediately about her tiredness. "I didn't wish to be 101 years old. Many things start to wear out! It's easy to get sick. It's very tiring! You feel sleepy all the time. That's how I feel." Ella said this with clarity of thought and conviction.

"Grieving" was a dark theme in the lives of these centenarians. Successive losses in various aspects of life, and particularly losses of loved ones, can be extremely disturbing for older members of society. "Everyone's gone but me!" Ada lamented as she spoke of the loss of her son and her husbands. Many reported that the losses of their loved ones were the worst things they had to face in their lives. Sarah Delany, age 103, wrote: "We've buried so many people we've loved; that is the hard part of living this long" (Delany, Delany & Hearth, 1993, p. 5).

"Personal Death" was another theme. Several respondents referred to prospects of their own death in an open and relaxed manner. As Cherie spoke with me in her warm room in an intermediate care facility, with a peaceful smile she said, "It would be nice to die in your sleep! Oh yes, I think that's perfect!"

"Humor" emerged often enough to be considered a theme. Centenarians humorous images of themselves in past and present situations added much laughter and buoyancy to our conversations.

"Taking Life as it Comes" was a theme that wound its way gently throughout the conversations. When I visited with Ada in her cozy living-room with the drapes partly drawn and a soft lamp lighted above her head for reading, I asked her what she enjoyed most these days. "Oh, I don't think about it. I just take life as it comes," she stated immediately with a gentle shake of her head. She went on to explain, "That is to say, I 'use' life as it comes." I came to understand from her further comments and from what others had to say that they tried to take advantage of whatever opportunities came their way in life.

Learning Experiences of Centenarians

A tremendous amount of learning, as described by these centenarians, involved learning through social interactions. These interactions often involved family and sometimes included friends and peers. Many times they involved people, any people, who might bring some newness with them through personal interactions. "I learn most things from other people and I like mixed company," Meg exclaimed with an emphatic nod of her head as she said 'mixed.' "Sometimes children come and visit me here and I really like that."

Hearing people talk was a high priority for several centenarians when they considered learning. "My hearing is fine and I'm thankful for that," Pat said happily as she turned her face towards mine. "That's why it's so important that I get news from outside," she explained with some urgency. "My sight is nearly gone and that's sad. No more TV or reading now, which I did a lot of in the past. That was my learning! I really miss it!" The anxiety had built by this time and Pat's hands were clenched around the folds of blanket at her chest. "That's why I really need people to come and talk to me. Most of my learning comes from hearing people talk about what things are happening."

"Going out." Several Centenarians expressed the importance of "going out" of their dwellings in order to experience learning through different settings and different people. Some of them enjoyed one-to-one encounters with people while others preferred small groups of perhaps three to five people as learning settings. Jim, on the other hand, cheerfully explained his preference for large -sized groups. "Oh, when I get together in a group, I like a group of about 14 or 15 or maybe up to 20, in that area. Anything smaller than that, well they are interesting, but they are more interesting when there are more of you. And that's about as many as you can get in an ordinary room," he said as he glanced around his living-room where we sat talking and drinking tea.

"Learning through the Media." Many centenarians spent a lot of time at home and therefore relied on the media for bringing the outside world to them. Media they mentioned most frequently were television, newspapers, mail, books (often with large print), magazines (the favorite was the large-print edition of *Reader's Digest*), and health materials.

"Learning through activities." On my request, Meg cheerfully showed me the creative array of slippers in her bag that hung on her walker. There was a profusion of colors, sizes, shapes and patterns. She lovingly patted each pair as she arranged them on her lap and explained that she sells them or gives them away. "The most important things in my life now are knitting and tea time," Meg said pensively. "It's about all I do. At age 12 I taught myself to knit. Much of my learning today still comes from my knitting. I have to knit different sizes for different people. Oh, and then everyone's ideas change about what colors they want!" she exclaimed with a touch of surprise in her voice and eyes. I immediately understood what a challenging learning experience it must be for Meg, just trying to keep up with the trends in the knitting world. Other activities mentioned by centenarians included crocheting, building a composter, building hangers on walls for storage space and sewing.

"Physical activity and learning." Most of the centenarians in this study valued physical activity and were eager to report on their choices of movement and how this linked with learning. Walking was by far the favorite form of exercise. "I get all dolled up like a scarecrow to go out the door for my walking," Cherie said with a warm chuckle. "I feel better and think better when I get out for a walk each day. It keeps my mind alert and my memory going. I used to walk fast everywhere in the past —oh, very fast!" she said as she pressed her shoulders back and allowed her chest to expand slightly. "Now I walk more slowly."

Beard (1991) wrote that centenarians think "health" and that they often exercise. Cora, aged 104, stated proudly, "I like walking around with my walker, yes I do. I walk just to see for myself and to save myself!" Several people commented that their walks added to their feelings of independence, along with their perceptions of new learning. Some of the participants did mild exercises from their chairs and beds. Dale, aged 101, reported that he danced a little, especially in the kitchen in the mornings when he was preparing his breakfast.

"Window Learning." Several centenarians positioned their chairs for maximum viewing out of their windows. They engaged in what I have labeled 'window learning.' As we talked, their focus often left my face and shifted somewhere outside. "I learn by watching people," Meg said as she gazed at a family with a dog that was walking past her window. Several people commented on enjoying watching people passing. Others commented on enjoying the changes that occur with the seasons and on watching the gardeners who often had new ways of doing things.

"Wanting More Learning." Ways to foster learning that were suggested included: additional social interactions and improved communication, further knowledge about growing older and what's happening to them, added focus on family and furthering meaningful work with memories through more creative recollection of past experiences. Specific learning topics mentioned were birds, gardening, trees and flowers.

Barriers to Learning

Four major themes concerning barriers to learning emerged from the interviews: poor vision, poor hearing, poor mobility and illness. Some participants were dealing

with none or only one of these barriers to learning, while others were dealing with several. While advanced age does not necessarily create these barriers for all seniors, it is widely recognized that for the majority of persons aging is accompanied by decrements in sensory functioning. Aging learners, sometimes assisted by adult educators, must learn to cope creatively with these challenges. Learning to adjust to physical changes in later life warrants further discussion and study.

There may be specific difficulties in dealing with decreased vision or hearing or mobility for aging persons because they have often had many years free from these problems. Then, just when they are being faced with various aging issues such as the loss of loved ones or lower energy levels, they also may have to cope with new or increased problems with vision, hearing, or mobility. Educators must therefore be prepared to provide sensitive programs for specific interests of aging persons, while at the same time providing caring considerations for each participant's particular challenges or barriers to learning, which may be developing in later life.

Poor Vision. Several respondents reported extreme distress over pronounced loss of vision. As their eyes fail, they are forced to disengage from reading, watching television and many other activities that provide learning and satisfaction "I used to read everything I could get my hands on — since I was three! And I learned so much!" Ruby exclaimed one day as she slowly moved her large magnifying glass across the front page of the newspaper that lay on the kitchen table before her. "Now I can hardly keep up to the news, because my eyes are giving out on me. It's terribly upsetting!"

Socializing with other people, especially new people, is also difficult for centenarians when they cannot clearly see with whom they are visiting. "It's bad with bad eyes, and [sigh], I get so tired from just trying to figure out who's there and who's talking when I'm in a new place with new people," Ella explained one day. Dealing with poor vision is also energy draining and energy is a commodity to be guarded carefully in extreme old age.

Poor Hearing. Marie aptly described the struggles of partial deafness that several respondents reported. "When people come in, I can't hear what they say. They have to come so close. This is difficult. Television is no good. And oh, I can't go to any meetings now because it's no use; I just sit there in a haze because I don't hear," she said with harsh intonations around her words. "I get tired of trying to talk to them, and they get tired of trying to talk to me."

Mobility. "My weak legs and my method of traveling gets in the way of my learning," Jim said angrily as he pointed down at his feet. "I dropped out of some good organizations because I can't walk good and then I've got to travel to these places. I can't do that, so it's like isolation," he said heavy-heartedly. After a pause, he gave his final statement on this topic: "The difficulty of getting around, that is a big thing! Mobility!"

Illness. Ruby gave a crisp explanation concerning her health and learning. "My health is basically good," she said proudly (even though she struggled with her sight). "I'm very healthy. Never much sickness. I'm a tough old bird. My mind is

brighter when I feel well, and not so bright when I feel ill. When I'm not well, well, then I'm not so interested." Ruby thought for just a moment and then added, "But, I need things to keep my mind off myself." Learning, then, is a type of remedy, though not terribly welcomed when one is ill. Yet there is the need for something to occupy the mind in order to keep it from entirely focusing on the ill self and respondents have suggested that learning helps. We, then, as educators have a difficult challenge if we are to help aged learners develop coping skills to limit barriers to learning.

Deeper Understandings: Reflections and Recommendations

I made several observations during my interview with centenarians that I consider to be significant to developing a deeper understanding about working with some of our oldest members in society. If respondents were experiencing physical or emotional distress when I arrived, often the pleasure of our conversations came to over-ride much of their discomfort. People reported feeling stronger and more pleased with life when someone like myself listened to them with such deep interest.

Participants in the full variety of living situations (independent, intermediate care and extended care facilities) all reported similar types of learning experiences. Most commented on suffering from feeling isolated from the outside world. Several placed themselves strategically by main entrances, elevators, or windows in order to enhance their opportunities for new stimuli. Even though respondents did not always feel well, they still enjoyed discussions with me as it helped them forget about their unwell bodies. People enjoyed having the opportunity to validate their learning, both to themselves and to me. In my eyes, these people are prime examples of lifelong learners.

As a result of this project, I have developed some recommendations for enhancing learning experiences for centenarians and other older learners. These recommendations are addressed to centenarians themselves and to other older persons, as well as to administrators, educators, caregivers, researchers and others interested in gerontological issues.

Programming for people on the frontiers of longevity and a philosophy for creating learning environments is reflected in the following general recommendations. Adult educators need to:

1. Develop an orientation toward an "environment for learning." That is, invite those involved with older seniors to new and stimulating information for use in their interactions and social exchanges.

2. Continually reassess what older seniors want for more meaningful learning opportunities and persist with creative ways of providing this type of learning.

3. Promote self-directed learning experiences, as opposed to focusing solely on the teacher, facilitator or caregiver continually leading the learning process.

4. Acknowledge the learning experiences of elders as they are observed and recognize that through the eyes of others we may have new insights about ourselves.

5. Use the knowledge and skills of older individuals for program planning, development, teaching and facilitating seniors' learning.

6. Provide more individual, community and residential learning experiences, including formal and informal approaches.

7. Consider individual barriers to learning in each situation, work creatively with these barriers and acknowledge the learning that goes with this process.

8. Provide chairs, lighting, heat, written materials and acoustics appropriate for the elderly.

9. Provide courses at appropriate times of the day and in appropriate locations for older learners.

Participants had many specific programming suggestions, among them: learning activities focused on coping with changes in later life; nurturing and maintaining memory; enlarging social networks for learning; adapting to a slower pace of life and lower energy levels; age awareness workshops, including discussions concerning living on the frontier of longevity and learning to face problems in life and face the inevitability of death.

I acknowledge that these recommendations may be difficult to achieve and may require extensive programmer time. However, they are significant goals identified by centenarians themselves and are a rich resource for seniors' programming.

A Few New Questions

This study has raised new questions concerning the learning experiences of our more aged citizens: What cultural factors require attention in order to offer appropriate learning experiences for a greater variety of our aging citizens? How can we facilitate centenarians' requests for renewed learning? How can there be better learning/sharing time spent between centenarians themselves and others interacting with them? Answers to these questions would give us further insights into developing learning experiences for the more senior of our senior citizens.

Summary

Through my work with centenarians I have come to more fully understand that these individuals do enjoy rich learning experiences in their daily lives and that they wish to continue to learn. I have also become more aware of helps and hindrances to learning in later life.

I observed the zest for learning many older persons experience. and discovered I was not the only one with hungry brains. I found support for McPherson's (1990) activity theory whereby elders may slow down, but many still remain active in their areas of intellectual interest. I became more fully aware of how vital social

interactions are to the learning processes of older persons. I was inspired by the love of life and the lack of fear of dying that these centenarians displayed. I was amazed at the many effective adaptations they had made to major changes in their lives. These seniors helped me recognize some considerations necessary for sensitive and meaningful program planning and development for aging persons. I learned more about the hindrances to learning that may develop in late life and I grew personally in my empathy with and compassion for our older community members. Learning about learning in late life has been very rewarding to me in my mid-life, and it has assisted me in making recommendations for meaningful late-life learning programs.

I have come to more fully understand that educators of adults, and more specifically of older adults, have many opportunities for learning from the oldest members of society. As we engage in our teaching and learning processes, we may be granted richer opportunities in our field through sensitive collaboration with older community members, including those who are learning in their second century of living.

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