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# *Preface*

When the editors began working in the field of self-directed learning, many years ago, the primary question we heard was, "What is self-directed learning?" After 22 years of the International Self-Directed Learning Symposium, founded by Huey Long in 1986, hundreds of research papers have been presented and discussed. While the "what" of self-directed learning is still actively argued, the "why" of self-directed learning has become increasingly clear.

In celebration of the formalization of the *International Society for Self-Directed Learning* as a nonprofit corporation as of January 1, 2008, Lucy Guglielmino presented a plenary address summarizing some of the more prominent "whys" of self-directed learning--why self-directed learning is and will continue to be an important research topic and mode of learning as we move into the future.  That address is excerpted in the first paper of this issue.

Two other articles and a practice brief present research and practice related to three of the central topics of the opening paper. The increasing need for and attention to SDL in the workplace is reflected in Liddell's primarily qualitative study of the self-directed learning of women executives leading philanthropic institutions. Informal self-directed learning in response to a personal crisis is the subject of Hollingsworth and Scott's moving account of a woman's efforts to cope with a chronic illness while maintaining her family roles and her personal learning.

The practice brief is an examination of a faculty development process in a University that has recently revised its medical preparation program to meet a goal of developing the skills and attitudes for continuous, self-directed learning in their future physicians.

Finally, Ponton and Schuette present an analysis of the theoretical and statistical reasoning to support the use of summative scores of the *Learning Autonomy Profile*.

The IJSDL welcomes your contributions as we continue to offer a forum for examination of current research and practice in self-directed learning.

Lucy M. Guglielmino and Huey B. Long, Editors

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# *International Journal of Self-Directed Learning*

## CONTENTS

# WHY SELF-DIRECTED LEARNING?*

## Lucy M. Guglielmino

After establishing a description of self-directed learning in terms of context, activation, and universality, this paper examines first the natural tendency of humans to seek knowledge that is sometimes blunted by the constraints of institutionalized learning. The increasingly urgent demands for continued learning posed by the proliferation of information and technology are followed by a brief documentation through quotes of the historical recognition of the need for lifelong, self-directed learning. More specific documentation of the need for and evidence of increasing attention to self-directed learning is provided in three contexts: in formal learning settings, in the workplace, and in one's personal life. The paper concludes with a discussion of the role of self-directed learning in the advancement of society. Brief profiles of the self-directed learning and societal contributions of George Washington Carver and Marie Curie illustrate this point.

The interest and research in the field of self-direction in learning has grown rapidly in the last forty years, and we have now formed ourselves into an International Society for Self-Directed Learning. It seems appropriate to look back and to look forward: to review some of the forces and beliefs that led to the upsurge of interest in SDL in the 1970's in this country and some of the reasons SDL is still and will continue to be an important research topic and mode of learning as we move into the future.

### SELF-DIRECTED LEARNING: A DESCRIPTION

Before considering the 'why," let us examine a description of self-direction in learning that addresses *context, activation, and universality*:

> *Context:*….Self-direction in learning can occur in a wide variety of situations, ranging from a teacher-directed classroom to self-planned and self-conducted learning projects developed in response to personal or workplace interests or needs and conducted independently or collaboratively. (Adapted from Guglielmino, 1978, p. 34)

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> *Activation:* Although certain learning situations are more conducive to self-direction in learning than are others, it is the personal characteristics of the learner—including his or her attitudes, values, and abilities—that ultimately determine whether self-directed learning will take place in a given learning situation. The self-directed learner takes responsibility for his or her own learning, and more often chooses or influences the learning objectives, activities, resources, priorities, and levels of energy expenditure than does the other-directed learner (Adapted from Guglielmino, 1978, p. 34).

> *Universality:*...Self-direction in learning exists along a continuum; it is present in each person to some degree. (Adapted from Guglielmino, 1978, p. 34)

Long (1989) and Brockett and Hiemstra (1991) also emphasize that the "critical dimension in self-directed learning" is the learner's active control of the learning process (Long, 1989, p. 3), or acceptance of personal responsibility for one's own learning, depicted as the pivotal element of their PRO model (p. 25).

So, why self-directed learning? Why do we or ought we research it, promote it, support and foster it? Perhaps the most basic reason lies in the fact that it is our most natural way to learn. A second lies in the complexity and breath-taking pace of change in our modern world that affects all aspects of our lives.

### MOST BASIC REASONS FOR SELF-DIRECTED LEARNING: OUR NATURE AND OUR ENVIRONMENT

*SDL: Our Natural Response to a Learning Need*

*I have never let my schooling interfere with my education - Mark Twain*

Self-directed learning is our most basic, natural response to newness, problems, or challenges in our environment. If this raises any question in your mind, watch a normal four-month old who has just discovered a piece of crinkly paper on the carpet or a one year-old who has just been shown a mirror. Looking, feeling, listening, turning, and tasting ensue as the young scientist explores. Unfortunately, the constraints of working with 20 or 30 young children in our current classrooms necessarily move the learners away from the Brockett). In fact, we have adopted what might be described as a manufacturing model of education designed to produce uniform results through promotion of conformity, obedience, and memorization of content dictated by others, leading to the transformation of self-directed learners into other-directed learners.

The advent of state-organized and state-supported schools with their increasing structure and emphasis on teacher-directed instruction did much to weaken the idea of learner responsibility. Postman (1969) detailed that weakening:

Now, what is it that students *do* in the classroom? Well, mostly they sit and listen to the teacher. Mostly, they are required to believe in authorities, or at least pretend to such belief when they take tests. Mostly they are required to *remember*. They are almost never required to make observations, formulate definitions, or perform any intellectual operations that go beyond repeating what someone else says is true. They are rarely encouraged to ask substantive questions, although they are permitted to ask about administrative and technical details. (How long should the paper be? Does spelling count? When is the assignment due?) It is practically unheard of for students to play any role in determining what problems are worth studying or what procedures of inquiry ought to be used. (p. 20)

Before the advent of the manufacturing model of education, with its curriculum committees dictating what is to be learned, when, how well, and how it is to be assessed, much schooling relied more heavily on the Socratic method than on memorization and recitation. Plato formed the Academy in 387 B.C. on the model of Socrates' dialogic method of teaching, with its emphasis on tutoring and mentoring. The Academy, often thought of as the first University in the Western world, was informal, consisting of an area set aside in Athens where students and teachers could meet to discuss ideas. This model incorporates two essential elements of the self-directed learning approach: (a) the teacher as mentor or facilitator rather than dispenser of knowledge to be committed to memory, and (b) the learner as a thinker and creator of knowledge rather than a passive recipient of the knowledge of others. While today's complex environment probably demands a mix of the two very different models of education, high-stakes testing has too often crowded out the learning options and approaches that support the development of self-direction in learning.

Some excellent programs exist, but for far too many learners, the old saying is still too often true: children go into schools as question marks and come out as periods. And many learning environments for adults are still designed around the same *listen to the teacher-memorize-and-regurgitate* model. Is this type of education the best preparation for the future? As early as 1970, Illich proposed an educational system based on self-learning, and Toffler (1974) warned that if our educational approaches did not reflect an accurate vision of the future, our schools would fail our citizens.

### SDL for Survival in a Changing Environment

What is more essential for the continuous, lifelong learning that is required in today's world of pervasive and ever-increasing change than self-directed learning? Lyman and Varian (2003), in a large and well-funded study at the University of California, Berkeley, concluded that new stored information almost doubled between 1999 and 2002, growing at an estimated 30% per year. In 2002 alone, print, film, magnetic, and optical storage media produced about five exabytes of new information. How big is five exabytes?

If digitized with full formatting, the seventeen million books in the Library of Congress contain about 136 terabytes of information; five

exabytes of information is equivalent in size to the information contained
in 37,000 new libraries the size of the Library of Congress book
collections. (p. 1)

The almost incredible volume of new information production is accompanied by vast changes in technology, globalization, social norms and systems—in virtually every area of life. In a world of unprecedented proliferation of information and technology, instant worldwide communications, and intense global competition, lifelong self-directed learning is now, more than ever, a necessity for survival. Knowles (1975) concisely captures the impact of these vast changes on the individual:

We are entering into a strange new world in which rapid change will be the
only stable characteristic….It is no longer realistic to define the purpose of
education as transmitting what is known…The main purpose of education
must now be to develop the skills of inquiry. ( p. 15)

Other sages throughout the years have espoused the need for lifelong learning and the importance of inculcating the skills and attitudes for continued, self-directed learning in each individual. A small sampling of quotes illustrates the persistence and power of this theme. In the first century, Plutarch (1927) expressed the idea that a learner is not a vessel to be filled, but a fire to be lighted: "For the mind does not require filling like a bottle, but rather, like wood, it only requires kindling to create in it an impulse to think independently and an ardent desire for the truth" (p. 259).

Ghandi is often cited advising his followers to learn as if they were to live forever, and he asserts, "[If] the proper foundation for their education was firmly laid, the children could learn all the other things themselves or with the assistance of friends" (Fischer, 1962, p. 298). This concept of education as a preparation for lifelong learning was also eloquently stated by Bruner (1966), who asserted, "Instruction is the provisional state that has as its object to make the learner or problem-solver self-sufficient" (p. 53). Moving to the current century, Pulitzer prize-winning author Thomas Friedman (2005a, 2005b), in books, on television, and in public and private speeches related to dealing with the challenges of globalization and information proliferation, points out, "The most enduring skill.... is the ability to learn how to learn" (Friedman, 2005a, § 15, line 1-2).

To summarize this section, a final quote illustrating the timelessness of Knowles' vision: his words in 1975 could have been written by a current author:

The "why" of self-directed learning is survival—your own survival as an
individual, and also the survival of the human race. Clearly, we are not
talking here about something that would be nice or desirable….We are
talking about a basic human competence—the ability to learn on one's
own—that has suddenly become a prerequisite for living in this new world.
(Knowles, pp. 16-17)

GROWING IMPORTANCE OF SELF-DIRECTED LEARNING IN THREE CONTEXTS

The following sections will discuss the growing need for self-directed learning and attention to its importance in three contexts: in formal learning settings, in the workplace, and in other personal contexts. The section concludes with a major societal benefit of self-directed learning.

### *Self-Directed Learning In Formal Learning Settings*

*We cannot teach people anything; we can only help them discover it within themselves. -* Galileo

Fortunately, at long last, there is evidence of increased inclusion of mission and goal statements related to promotion of SDL and building skills and attitudes for lifelong learning in educational institutions at all levels. Although innovative programs promoting self-directed learning have existed for many years at all levels of education (for examples, see Beggs & Buffie, 1965; Empire State College, 2007; Posner, 1990, 1991), the incidence is increasing rapidly. In addition, the information explosion, combined with the accessibility of the World Wide Web, has led to an explosion in the use of distance learning offerings, which normally require greater skills with self-directed learning (Guglielmino & Guglielmino, 2002). Other innovative approaches that are becoming more common, such as credit by portfolio evaluation, action learning, and problem-based learning also require the learner to take on more responsibility for the learning process.

Accreditation standards for many professions now also examine preparation programs for evidence that they prepare their learners for continued, self-directed lifelong learning. Examples include medical education (American Council for Medical Education, 1993; Medical School Objectives Writing Group, 1999), engineering education (ABET, 2002; Felder & Brent, 2003; Litzinger, Wise, & Lee, 2005), and nursing education (American Association of Colleges of Nursing, 1998).

### *Self-Directed Learning in the Workplace*

*The ability to learn faster than your competitors may be the only sustainable competitive advantage.*
Peter Senge, *The Fifth Discipline*

Barth (1997) pointed out that in the late 1940's, an individual could expect to graduate from high school knowing 75% of what he or she would need to remain successfully employed until retirement. Fifty years later, that figure was reduced to 2%; now it is probably close to 1%. Just as childhood learning is no longer an adequate preparation for life, initial training or learning is not an adequate preparation for maintaining competence on the job.

To provide just one example, the half-life of engineering knowledge—the time in which half of what an engineer knows becomes obsolete—is now in the range of two to eight years,

according to the 2006 president of the National Academy of Engineering, and "today's engineering schools are not preparing their graduates as well as they might for useful practice in the 21st century" (Wulf & Fisher, 2002, p.1). The authors note that the average career in engineering spans 40 years, mandating lifelong learning throughout the profession.

Within the U.S. and in many other highly developed countries, a number of forces have led to increased pressure for workplace learning. Corporate downsizing and reductions in levels of management have led to increases in the span of control of each individual. Unprecedented growth in information and technology has created such rapidly expanding demands for learning and problem-solving that it has become impossible for training design and delivery to keep pace with learning needs. At the same time, global competition has made rapid response to needs for learning and change even more critical. Human Resource Development units can no longer be expected to design or acquire adequate training to insure that all individuals in the organization remain on the cutting edge of knowledge and skills needed to maximize productivity (Rowden, 2007). Instead, the HRD unit must become a leader, strategist, mentor, and resource for learning within the organization.

An important aspect of the U. S. response to the learning challenge presented by unrelenting change has been the development of learning organizations (Jude-York, 1993; Pettinger, 2002; Piskurich, 1993; Senge, 2006; Senge, Kleiner, Roberts, Ross, Roth, & Smith, 1999; Ravid, 1986; Watkins and Marsick, 1993). The key element in an effective learning organization is acceptance of responsibility by each individual for recognizing and addressing his or her own learning needs and then sharing that learning with appropriate others in the organization. In other words, each individual now needs to function as a self-directed learner in order to meet the demands of the rapidly changing workplace. (Guglielmino & Guglielmino, 2006).

Studies documenting the positive relationship between job performance and self-directed learning readiness (Durr, 1992, Guglielmino, Guglielmino, & Long, 1987; Roberts, 1986) support this assertion. Additional support comes from studies documenting positive relationships between self-directed learning readiness and management levels (Durr, 1992; Roberts, 1986) and success as an entrepreneur (Guglielmino & Klatt, 1994) or top female executive (Guglielmino, 1996; Liddell, 2007).

In a flat world, Friedman (2005b) points out, the individual worker is going to become more and more responsible for managing his or her own career, risks and economic security; therefore, he sees the job of government and business as helping workers develop the necessary skills and attitudes to do that—the skills and attitudes of self-directed, lifelong learning.

*Self-Directed Learning for Personal Effectiveness and Satisfaction*

*We can only have…citizens who can live constructively in this kaleidoscopically changing world …if we are willing for them to become self-starting, self-initiating, lifelong learners.*
<div align="right">Carl Rogers, 1969</div>

While most research focuses on self-directed learning growing out of formal learning settings or the workplace, our everyday lives hold major challenges that require self-directed learning as well. Self-directed learning also offers a path to increased life satisfaction. We will examine only a few examples.

*Parenting*
A parent's largest and longest learning project is often the art and science of facilitating the development of a well-balanced, capable, ethical, employable human being. Learning choices that used to be largely limited to the pediatrician, advice from friends and family, and some articles or books have been geometrically expanded to include such internet resources as MedWeb, parenting advice sites, and online support groups.

*Managing Health Care and Health Emergencies*
One area of self-directed learning for personal use that has been better documented than others is the need to gather and evaluate information and make vital and life-changing decisions on healthcare issues. A diagnosis of a life-threatening condition often triggers intensive self-directed learning for the individual and for close friends and family members. Caffarella (Merriam & Caffarella, 1999) relates her own experience with self-directed learning after diagnosis of a serious illness. Treatments for chronic illnesses are constantly changing as new medications and treatment regimens are developed. Holland (1992) reports on the self-directed learning efforts of individuals dealing with the unpredictable disease progress and multiple treatment regimens for multiple sclerosis, and Hollingsworth and Scott (2008) detail the learning of a multiple kidney transplant recipient attempting to balance the effects of the disease and the treatment and maintain her role as wife and mother.

*Pursuing Interests and Leisure Activities*
Qualitative studies of adults have detailed the wide number of life-enriching activities that individuals pursue through self-directed learning. Scott (2006) presented a fascinating study that documented major learning projects of adults pursuing dreams in later life.

> Karen, age 59, had left her job, learned to sail, sold her house to purchase a 36-foot boat, and became the first American woman to sail solo around the world. ….Richard, 68, began bicycle racing at age 60, and won two world championships. Patricia, 70, retired at age 65 to pursue master's degree research investigating the revival of ancient Cornish, which she learned to speak in order to interview her study participants. (p. 3)

In a paper detailing the learning projects of 14 highly self-directed learners (Guglielmino, et

al., 2005), the researchers reported that, despite exceptionally demanding careers, the learners interviewed "found time for a wide variety of learning projects, ranging across all aspects of their lives" (p. 87). One highly creative learner, in addition to many work-related projects involved in managing a performing arts center, reported self-directed projects related to

> researching and writing a book and a play, learning to ride a Harley, learning to use a Palm Pilot and a new cell phone, remodeling a building…, redecorating a home, helping a child adjust to college, re-landscaping a parent's home, researching surgery options and reviewing French in preparation for traveling overseas, in addition to ongoing projects such as relationship skills and cooking skills. (p. 87)

*Seeking Meaning*

The process of meaning-making is one of the most vital types of self-directed learning adults engage in. Through reflection and life review, they examine occurrences and patterns in their lives and explore their reactions to them. They revisit personal and professional goals and evaluate their progress toward meeting them. Dominice (2000) points out that, for adults, much of their informal learning is an active search for meaning. By confronting and reflecting on the learning moments in their lives, they are able to arrive at new understandings.

Based on those understandings, they may decide to rewrite their stories. Adults' reflections on their lives often lead to the visualization of a new future and the actualization of it. Describing the use of narratives in adult education settings, Hopkins (1994) said, "Our narratives are the means through which we imagine ourselves into the persons we become" (p. xvii). When adults review their life stories and find them lacking, they may make major changes to align their lives with their values and aspirations.

Again, just a few examples. In Scott's (2006) study, mentioned previously, some learners ardently sought retirement or leisure pursuits, but others left jobs and re-created their lives in their 50's. For example, "Nancy, 58, galvanized her inner strength to move from being a single parent of six with a subsistence income to being an entrepreneur of a business (recently sold to an international firm) assisting employees affected by a corporate downsizing" (p. 3). She found a way to meet her own need for survival by assisting others in distress.

Another recent example: An article in *The Palm Beach Post* (Balmaseda, 2008) related the story of a single mother, originally an advertising and marketing executive, who became a home-based businesswoman in order to spend more time with her daughter. After a divorce, she combined her love for baking with her daughter, her marketing experience, and her desire to contribute to society. Capitalizing on the reception her baked goods received from friends and family, she began producing gourmet baked goods in her kitchen, wrapping them in earth-friendly packaging, and marketing them after taking her daughter to school. In two years, the results of her reflection and self-directed learning grew into a business that provides fulltime work for 20 employees, gathers raves from magazines such as *Gourmet* and *Food and* Wine, and has standing orders from gourmet food shops from all over the country—a

business that from its first sale has donated a portion of its profits to the Daily Bread Food Bank. As a part of the rewriting of her life story, Jennifer Behar, the creator of Jennifer's Homemade, also serves on the Board of Directors of the food bank, which serves the poor in three South Florida counties.

## ADVANCEMENT OF SOCIETY THROUGH SELF-DIRECTED LEARNING

The last two examples in the previous section provide a helpful segue to a discussion of the role of self-directed learning in the betterment of society. Committed, innovative, persistent self-directed learners, in their searches for meaning, justice, or better ways to do things in their own lives, sometimes pursue paths that contribute to advances in knowledge or technology or a more equitable, charitable, or just society.

Let's consider two highly self-directed learners: George Washington Carver and Madame Marie Curie (born Manya Skłodowska). Both fought prejudice and poverty to achieve an education, showing an unconquerable drive to learn--constantly studying and experimenting under the most adverse conditions.

### *George Washington Carver*

Carver was born a slave in Missouri. His father died before his birth; he and his mother and sisters were kidnapped by slave raiders when he was an infant. A slave hunter found George, near death, and returned him to his owners; but his mother and sisters were reported to have died. Very frail, due to whooping cough he contracted when he was stolen, he was not expected to live. Since he was unable to work, he was allowed to explore the fields. He was intensely curious, and taught himself so much by his close observations of plants that he became known as "the plant doctor." After Abolition, he was taught to read and write by his former owners, who took him into their home. George eventually left home to find a school that blacks could attend, a dangerous journey.

While attending school, he rented a room from a woman named Mariah Watkins, who told him he must no longer refer to himself as "Carver's George," but George Carver. She gave him a quote that became a guiding motivator: "You must learn all you can, then...go back out into the world and give your learnin' back to our people" (Jackson & Jackson, 2008, p. 1).

Carver excelled in art and music, but was persuaded to become the first African American student of agriculture at what is now Iowa State. He was recruited for graduate study in botany, and ultimately became the first African American faculty member at Iowa State. Later hired at Tuskeegee Institute, he gained an international reputation in botanical research, teaching, and outreach. Through his work, Carver contributed greatly to rural economic development. He identified or created hundreds of products from peanuts, sweet potatoes, and other crops as alternatives to cotton (325 from peanuts alone) He also created "movable schools" to share his knowledge, promoting health, sound nutrition and self-sufficiency.

Carver earned many honors, testifying before Congress, being named to the Hall of Fame for Great Americans, the National Inventors Hall of Fame, and having his paintings displayed in major exhibitions, leading him to be referred to as "the Black Leonardo." In addition to his scientific, educational, and economic contributions, Carver disproved the stereotype of the time that blacks could not achieve intellectually (Fishbein, 2007).

*Madame Marie Curie*

Madame Curie, (nee` Manya Sklovoba) was born in Poland when it was dominated by the Russians. Her efforts to pursue her interest in learning and experimentation were frustrated by the fact that she was not only a woman, but a Pole.  She and other Polish youths studied feverishly on their own and formed a secret school to teach each other what they knew best. They believed that the hope of their country lay in developing the intellectual and moral strength of the nation. They also made a commitment to instruction for others at all levels of their society. In her *Autobiographical Notes*, Curie expressed the beliefs that predicted her own success and her contributions to humanity:

> I still believe that the ideas which inspired us then are the only way to real social progress. You cannot hope to build a better world without improving the individuals. To that end each of us must work for his own improvement, and at the same time share a general responsibility for all humanity. (p. 187, cited in American Institute of Physics, 2000)

Using money earned as a governess while she pursued her independent studies in math and physics, she finally was able to attend the Sorbonne, eventually becoming the first woman to earn a doctorate in France and the first female professor at the Sorbonne. Her discovery of radium led to radical changes in the way scientists think about matter and energy and introduced a new era for medical knowledge and the treatment of diseases through radiation therapy. Shortly after she became the first person to win more than one Nobel prize, World War I broke out, and she focused on ways to use radioactivity to save soldiers' lives.  Her intense pursuit of knowledge ultimately benefited all humanity, not only in the furtherance of science and medicine, but in the recognition of women's capacity for intellectual achievement.

You will be able to think of many other pioneers whose relentless pursuit of learning bettered their worlds.  Our societies move forward through the efforts of dedicated self-directed learners.

## CONCLUSION

Some individuals will overcome all obstacles to continue their self-directed learning; others need assistance in accepting the responsibility and developing the skills and attitudes for lifelong self-directed learning.  As researchers, it is our responsibility to learn all we can about the process of self-directed learning and the best ways to facilitate the skills and attitudes of self-direction in learning.  There is much that remains to be discovered.

What we do know, however, is that our times require continuous lifelong learning and relearning by each individual, and no educational institution can hope to meet the demand of delivering that instruction. Those charged with education and human resource development are obligated to incorporate the development of the attitudes and skills supporting self-directed lifelong learning as a central aim of their programs. To do less is to compromise the ability of tomorrow's workers and citizens to function effectively in a world we cannot even predict.

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# EXECUTIVE WOMEN'S SELF-DIRECTED LEARNING AND LEADING IN CHARITABLE FOUNDATIONS

Theresa N. Liddell

Women occupy 1.4% to 53% of the executive positions in the United States depending on the sector, yet little is known about their learning needs and strategies. The purpose of this study was to explore the characteristics of self-directed learning of women executives of philanthropic organizations to determine their approaches to learning for leading. Twenty-two women executives of philanthropic organizations participated in hour-long interviews and responded to the *Self-Directed Learning Readiness Scale (SDLRS)*. The mean score on the *SDLRS* was 248.2, well above average. Analysis of interview transcripts yields several conclusions. The participants work in complex, dynamically changing, and ambiguous environments that require constant learning to succeed. Participants learn through their work. They are self-directed, active learners who demonstrate classic characteristics of self-directed learners and two characteristics that have not previously been identified (tolerance for ambiguity and attitude toward mistakes).

This article addresses the self-directed continuing professional development in a dynamically changing environment. Women make up 45% of the work force in the United States and 35% worldwide (Redwood, 1996). Women occupy 1.4% to 53% of the executive positions in the U.S. depending on the sector, yet little is known about their learning needs and strategies. The purpose of this study was to explore the characteristics of self-directed learning among women executives of philanthropic organizations to determine their approaches to learning for leading. The study of this topic is significant, as women occupy more executive positions than men in the private sector, the public sector and the independent (non-profit) sector. An earlier grounded theory study (Liddell, 2007) focused on what women executives needed to learn to perform and what informal learning strategies were used. This current study reframed research questions and recoded existing data specific to self-directed learning.

The literature suggests that women leaders are different from men in how they learn and lead (Belenky, Clinchy, Goldberger & Tarule, 1986; Gilligan, 1982; Greenberg & Sweeney, 2005; Kantor, 1977; Morrison, White & Van Velsor, 1992; Rosener, 1990, 1995 & 2003; and Tannen, 1990). The 21st century requires a new kind of leader that operates in complex systems with transformational learning and leading. In this pioneering environment, learning and leading may no longer be considered separate functions (Brown & Posner, 2001; Straka, 1999). To function in this changing environment, Knowles (1975) warned that "to be adequate for our strange new world we must come to think of learning as being the same as living. We must learn from everything we do; we must exploit every experience as a 'learning

experience'" (p. 16). Brown and Posner (2001) affirm this statement by sharing that "research over these past two decades underscores that the majority of leadership skills are learned from naturally occurring experiences in the work place" (p. 280). In an earlier classic study, Mace (1950) came to the same conclusion when he noted that, "What appears to be a not very profound conclusion of this study is that in the development of executives people learn by doing" (p. 92).

In another classic study, Katz (1955) observed the importance of technical skills early in one's management career, the emergence of the importance of conceptual skills for executive level performance, and the need for human (interpersonal) skills throughout one's career. Conceptual skills (the ability to work with abstraction, patterns and systems) are required and critical at the executive level (Katz, 1955). Kegan (1994) includes the capacity to accommodate paradox, ambiguity, and contradiction among the necessary conceptual skills for adults to function in the post-modern world. King and Kitchener (1994) outline a stage theory that culminates with developing reasoning based on the best information available rather than certainty. Wheatley (1992, 2002 & 2005), Hock (1999), and Snyder, Acker-Hocevar and Snyder (2000) suggest that comfort with change, chaos, ambiguity, and cooperative learning as well as the need for order and the demands of competition are required to lead organizations in the future. Brown and Posner (2001) add that "leadership is closely connected with the concept of change, and change, in turn, as we have already indicated, is at the essence of the learning process" (p. 275).

Self-directed learning has been apparent throughout history and Houle (1961), Knowles (1975), and Tough (1979) focused research on the topic. Building on this foundation of inquiry, Guglielmino (1978) saw the need to be able to quantify and measure one's readiness for self-directed learning and developed and validated the *Self-Directed Learning Readiness Scale* (SDLRS). This scale is also known as the *Learning Preference Assessment* (LPA) to avoid bias in response to the title.

Several studies of women leaders suggest a relationship between self-directed learning and leadership. Guglielmino (1996) assessed 19 female executives and found the mean score (257.8) for "top female executives was significantly higher than the mean score of any other sample tested since research studies using the SDLRS were initiated in 1978" (p. 19). Connolly (2004) studied 38 leaders in business environments and found that "it appears that self-directed learning readiness . . . has potential as an indicator of leadership effectiveness" (p. 111). Lambert and Roundtree-Wyly (1990) profiled the biographies of four self-directed women representing business, higher education, and religion and conclude that "corporate ladders are being scaled daily by female self-directed learners" (p. 246). These studies suggest that readiness for self-directed learning is a key attribute of successful women executives.

Guglielmino (1978) identified eleven characteristics of self-directed learners including initiative, independence, persistence, responsibility, self-discipline, curiosity, desire (to learn or change), basic skills (study and organizational), pacing/completion, joy of learning, and goal orientation. Echoing those characteristics, Reddin (1997) identified themes of

independence, curiosity, goal orientation, and a drive to learn answers among high-achieving women.

## PROBLEM STATEMENT

Since the 1970s, there has been increasing attention to development of managerial and executive women. While there has been considerable growth in the number of women in executive positions, board positions, and elected office, some estimate that it will take another 70 years before their numbers approach parity with men (Catalyst, 2007). Women have been more successful at entering executive ranks in both entrepreneurial and non-profit settings than in other sectors such as the corporate sector or higher education. Although women occupy 1.4% to 53% of the executive positions in the U.S. depending on the sector, little is known about their learning needs and strategies. Although there has been some exploration of their self-directed learning, little is known about how women prepare themselves for executive positions and continue learning once in their positions. This study confirms the self-directed learning readiness of woman executives and explores the characteristics of self-directed learning that were spontaneously reported by women executives. It is also important to note that different generations of women enter the workforce under different conditions and expectations. For example, the Baby Boom Generation women did not have the advantages of Title IX sports experience or the numbers of pioneering women to pave the way that Generation X and Generation Y women may take for granted in today's world.

While different sectors and professions require various academic credentials, often including a graduate degree, there are noteworthy entrepreneurial exceptions demonstrating that formal education may be helpful, but not sufficient, to succeed as a leader. Perhaps the demands of pioneering enterprise in this new era require other individual talents beyond or different from what is required to be academically successful. It may also be that the complexity and chaos of organizations in this post modern era require a different kind of leadership that is more flexible and adaptive than traditional models. The informal learning that leaders acquire may be as important as, or more important than academic preparation.

## PURPOSE AND SIGNIFICANCE

The purpose of this study was to explore the use of self-directed learning by women executives of philanthropic organizations. An earlier study (Liddell, 2007) examined how women leaders learned what they needed to know to perform in their positions. The level of self-directed learning readiness was assessed. The characteristics and strategies of the learners emerged in their own words in response to indirect open-ended questions in the grounded theory study. In this current study, the data was queried to explore the characteristics of self-directed learning emerging from conversation with participants.

The results of this study articulate self-directed learning characteristics reported by women executives as important to their development. This study provides groundwork to define the self-directed learning characteristics of women executives. There are implications for the design of executive development and executive support programs.

## POPULATION/SAMPLE

Although the percent of women leading countries, companies, and non-profits changes from year to year, the sector with the largest proportion of women executives is the non-profit sector, especially charitable foundations. According to Blum (2005), 52% of philanthropic foundations are run by women. The sample for this study was a purposefully selected group of 22 women from this population. Creswell (2006) suggests a sample of 20 to 30 participants for a grounded theory study. The study explored the perspectives of these executives serving foundations in South Florida and Western Washington. The foundations represented by the participants varied widely in size, purpose, and structure. The sample excluded participants with less than three years of experience as an executive (preferably, but not necessarily, in the current organizations). The sample excluded executives who were family members of family foundations or family owned corporate foundations to avoid introducing other complicating factors and dynamics into the study. With one exception at a very large foundation, all participants were Chief Executive Officers (CEO) and reported to a board of directors. There were no age or education criteria.

The experience in their current organizations ranged from 18 months to 19 years. The age of the participants ranged from 39 to 67 years and the education ranged from some college credits (1), to baccalaureate degrees (13), master's degrees (5), law degrees (2), and one doctoral candidate. Two participants represented minority populations. Half (11 of 22) the participants had some business experience (management, accounting, banking) while most of the others came with experience in non-profits or the public sector.

The organizations represented annual granting budgets from $200,000 to $40,000,000 (excluding one inordinately large outlier). The structures represented private independent foundations, operating foundations, and public foundations. Staffing structures varied from a part-time executive, to a larger community foundation with a staff of 27, and to a very large private independent foundation.

## INSTRUMENTATION

The types of data collected for the original study included interviews, observations, documents, and the results from the paper and pencil version of the *Self-Directed Learning Readiness Scale* (*SDLRS,* Guglielmino, 1978). The *SDLRS* is a widely used 58 item, five point Likert scale instrument that measures a total score for self-directed learning readiness. Delahaye and Choy (2000) confirm the internal consistency and test-retest reliability values, as well as content, construct and criterion-related validity.

Interview and observation protocols were developed for the original study which did not focus on self-directed learning. The interview protocol included questions to collect descriptive data (both demographic information and organizational information) as well as questions to promote discussion of the development of the executives, and did not include any questions specific to self-directed learning. The interview protocol consisted of seven open-ended questions to explore the views of participants on challenges, leadership style, pivotal life experiences, influential people, informal learning, and specific learning methods and is

available from the author or as an appendix in the original study. The interview did not specifically address self-directed learning, or any other approach to leadership development, but rather included open-ended questions about informal executive learning and specific learning methods.

## PROCEDURES

### *Data Collection*

After university Internal Review Board (IRB) approval of the design and protocols, participants were recruited for the original study. Participants signed a consent form, completed the measure of self-directed learning readiness (Guglielmino, 1978) and were interviewed in person by the researcher in a location chosen by the participant. The *SDLRS* scores were not known to the interviewer prior to the interview and the scores were only used to describe the sample. The interviews for this grounded theory study took about an hour and were conducted, audio-taped, transcribed, and coded by the researcher and a colleague. An observation guide was used to capture notes about the environment, interactions, dress conventions, mood, and activity level. The validity of the study was enhanced by standard practices such as *member checking* and *triangulation*. Transcripts were forwarded to each participant for member checking. Different data sources, such as annual reports, organizational websites, monographs, funding guidance, biographical material, brochures, planning documents, and press clippings from trade journals and newspapers, were used to triangulate the data to build a coherent justification for emerging themes from the original coding. The data from the original study were coded according to a systematic and standard format (Strauss & Corbin, 1998) including *open coding, axial coding,* and *selective coding*. A peer/colleague with graduate degrees, research experience, and experience as a non-profit executive also coded the transcripts to strengthen the validity of the definitions and application of the codes. The original study concluded that *when facing new challenges within their organizations or in the environment, experienced women executives convene conversations with colleagues, board members, staff and other to learn what they need to know to lead.*

The transcripts from the original study were used for this subsequent study focused on self-directed learning. The research question for the second study was "what previously identified (Guglielmino, 1978) or other characteristics of self-directed learning were referred to by the participants spontaneously in their answers to the interview questions?" The data was recoded looking for reference to the eleven characteristics of self-directed learning identified by Guglielmino (1978) and noting any other emerging characteristics that were not previously identified. Creswell (2003, 2006) guided the thinking for the design of the original study. Tannen's (1981, 1983, 1984, 1994) reuse of existing qualitative data modeled the approach of querying existing data with new questions for the second study.

### *Data Analysis*

In the original grounded theory study, the sample was described by region, age, education, tenure, grant budget, staff size, and *SDLRS* score. The *SDLRS* was scored by hand by the

researcher using the protocol designed by the scale's author. The *SDLRS* score was reviewed by region, age, education, and job tenure differences. The sample size was too small to draw statistical conclusions but the quantitative data provide a rich description. For this subsequent study, the 177 pages of transcript data were recoded using categories related to identified self-directed learning characteristics and other characteristics that might be related to self-directed learning, such as comfort with ambiguity. Under the category of self-directed learning characteristics, the transcripts were coded using the 11 characteristics identified by Guglielmino (1978). As other themes or categories emerged in the data looking through this new lens of *self-directed learning*, other characteristics were identified and coded. The two categories of self-directed learning characteristics were *previously identified* and *newly identified*. In this extension of the original grounded theory study, the researcher selected a central phenomenon (self-directed learning) around which to develop theories about the self-directed learning readiness of the participants and report qualitative evidence of the eleven characteristics of self-directed learning.

## MAJOR FINDINGS

The earlier grounded theory analysis of the interview transcripts yielded several contextual conclusions (Liddell, 2007). The findings from the earlier work noted that the participants work in complex, dynamically changing, and ambiguous environments that require constant learning to succeed; that participants learn by doing (through their work); that learning and leading are inextricably connected; and that learning strategies change over the course of one's career. The current analysis focused on self-directed learning readiness, characteristics, and strategies.

Every participant talked about *learning by doing*. They talked about learning through their experiences, both successes and mistakes. The descriptions came in short phrases such as "dive in and go with it …it just seems that everything is a learning opportunity … it also comes with just doing it"; "trying new things"; "honestly, I feel like I've just done 'on the job' training"; "until you really delve into that, I couldn't answer the question", "it was all learning", "you never stop learning"; and "this was something I had to build over a period of time with more experience." Within this context of ambiguity, innovation, and learning on the job, this current analysis of the qualitative data investigated self-directed learning characteristics and strategies through new coding of the transcripts. The participants demonstrated evidence of characteristics, sometimes using the exact labels such as independence ("I'm used to doing things on my own, independent"), persistence ("some of it is just persistence … stubbornness"), and curiosity ("I have a very strong curiosity about everything").

### Self-Directed Learning Readiness

The *Self-Directed Learning Readiness Scale (SDLRS)* provided descriptive information about the sample. The results affirm that the participants in the study are likely to initiate their learning. The *SDLRS* scores demonstrated above average (average = 214, Guglielmino, 1978) and high readiness for self-directed learning. The mean score of this group was 248.2, well above average. The mean for this sample was lower than the scores found by Guglielmino

(1996) when studying top female corporate executives (257.8), but in line with the scores of top male entrepreneurs (248.6, Guglielmino & Klatt, 1994). Eleven (half) of the participants scored in the *high* range (252-290) and only three scored in the *average* range (202–226) with the remaining (8) scoring in the *above average* range (227-251) according to the scoring methods based on the original standardization (Guglielmino, 1978).

Table 1 displays the composition of the sample by region and demonstrates the similarities between the sub-samples in each region with regard to learning approach, age, education, and experience. Other than size of foundations, the means (age, education, experience, and *LPA* score) of the two sites are quite similar across locations.

The major difference between regions is the size of the foundations. Florida is represented by more small (measured by staff size) family foundations (5) who distribute a total of $3.6M ($200K to $1.3M) with a staff of one or two persons. In contrast, the smallest of the two family foundations in the Washington sample distributes $5M a year with a staff of five. Both areas have access to professional association resources for philanthropic organizations including local donors' groups, informal networks, and national organizations.

*Table 1*. Sample Description by Region

|  | FL Mean (N=10) | WA Mean (N=12) | Total Group Mean (N=22) |
|---|---|---|---|
| *SDLRS* Score | 249.0 | 247.5 | 248.2 |
| Age | 49.8 | 53.7 | 51.9 |
| Education* | 2.5 | 2.6 | 2.5 |
| Tenure (years) | 7.1 | 6.8 | 6.9 |
| Grant budget | $1.425M | $4.95M^ | $3.271M^ |
| Staff size | 2.3 | 9.4^ | 6.0^ |

*Note*.
* Education was rated on a scale of 1 to 4 with 2=bachelors, 3 = masters & 4 = doctorate
^ Removed an outlier organization of inordinate magnitude

Comparing the *SDLRS* scores to other factors, the scores appear to be positively related to education and negatively related to tenure on the job. The higher the score, the more likely the participant had an advanced degree. The lower the score, the longer participants stayed in one job. It may be that those with higher *SDLRS* scores also gravitate toward new learning challenges of new jobs. The scores did not appear related to age, budget size, or location. The researcher observed that those with the lowest scores tended to be in positions eliciting more reactive administrative behaviors (merely distributing funds within legal requirements) rather than proactive leadership behaviors (seeking social innovation and systems change through foundation investment). A larger sample is needed to confirm these apparent trends.

Table 2 displays a possible relationship between categories of scores (average, above average, and high) and education (positive) and tenure in one's position (negative). The high levels of readiness for self-directed learning among the study participants demonstrated evidence in

their practice of seeing problems as challenges and setting out to learn what they needed to know in order to address them.

*Table 2*. Self-Directed Learning Readiness Scale Score by Descriptor
_____

| *SDLRS* Score | Mean | Age | Education | Tenure |
|---|---|---|---|---|
| Average (N=3) | 223.3 | 52.3 | 2.0 | 9.3 |
| Above Average (N=8) | 240.5 | 56.6 | 2.38 | 7.2 |
| High (N=11) | 261.6 | 48.4 | 2.64 | 6.1 |

*Note*: Trends only, sample not large enough (power) to determine significance

*Learner Characteristics Identified from Interviews*

The transcripts reflected plentiful evidence of the 11 characteristics of highly self-directed learners incorporated in Guglielmino's (1978) overall description. The interpretation of *SDLRS* results suggests that persons with high levels of readiness for self-directed learning usually prefer to determine their learning needs and plan and implement their own learning and tend to perform well in jobs requiring high degrees of problem solving, creativity, and change. The participants added to the list of characteristics by noting how important it was to proceed even when you did not know where you were going or how it would turn out (tolerance for ambiguity) and the importance of valuing mistakes.

*Traditional 11 Characteristics*. Participants demonstrated the 11 characteristics despite not being asked specifically about any of these characteristics. Their responses to open-ended questions about other topics still yielded solid evidence of these characteristics. For example, persistence, referred to many times, is exemplified in the following quotation.

> …just straight perseverance – there is a part of me that doesn't like things not to happen. . . . It's not going to be hard. You've just to work hard. The problem really isn't that difficult, but you have to keep working hard at it, and work hard at it, and work hard at it. . . . Just sit down and realize what you've got to do.

Another participant reflected initiative, goal orientation, and desire to learn when she described the learning elicited during an adventurous time living in Africa.

> Going to Tanzania and learning - figuring out how to learn Swahili (because the original plan didn't work). . . . So we had to figure pretty much everything out. And little things, like just how to jerry-rig things. I've never been mechanical, but making do with what you have and making things – like how to bake brownies in a double boiler on a Jiko stove.

Several participants noted their curiosity. One participant offered that,

> I knew I was curious, but until reflecting on how much of what I do is not so much skill based, more of an internal curiosity. I'm just happy that my brain works in such a way that I have the skills to keep up. That was kind of an epiphany moment for me – I really am curious. Perhaps they hired me for my curiosity.

Table 3 lists shorter quotations by the 11 characteristics. Some of the quotations confirm more than one of the characteristics (e.g. independence and initiative) and demonstrate how some of the characteristics are related to one another. The list in the table is restricted to three or four quotations that most represented the characteristics. There were other quotations that are not included in the table that were either redundant or less direct.

*Table 3*. Quotations Demonstrating 11 Characteristics of Self-Directed Learning

| | |
|---|---|
| Initiative | "I did my own little research. . . I know where to go to research and find information."<br>"I was sticking my neck out."<br>"I'm much more interested in starting things." |
| Independence | "Because I am such a 'lone ranger' kind of person."<br>"I'm used to doing things on my own, independent."<br>"Do it yourself, don't expect others to do it for you."<br>"Self-reliance . . . I guess a lot of things come back to that self-reliance." |
| Persistence | "some of it is just persistence . . . just the persistence . . . but there is a certain stubbornness, persistence."<br>"whatever it takes to get the job done."<br>"you have to keep working hard at it." |
| Responsibility | "instilling a new era of accountability and performance"<br>"It's just that I grew up in a family owned business so you just do what needs to be done."<br>". . . take responsibility for making it happen." |
| Self-Discipline | " . . . you've just got to work hard."<br>"And I am very task driven. . ."<br>". . . you must be really careful how you use it." |
| Curiosity | "I have a very strong curiosity about everything. . . . I have this (I don't know where it comes from) but I'm very curious, very curious."<br>"I have an intellectual curiosity about a lot of stuff."<br>"I knew I was curious [see long quote above] |

| | |
|---|---|
| Desire (to learn or change) | "There are always new things to learn."<br>"The organization needed to change to grow."<br>"I like new situations."<br>"I always want to learn." |
| Basic Skills | "I've always loved to read . . . I look at all of the<br>    research and I review all sides of the issue."<br>"I read constantly. . . . I tab the pages, outline and<br>    take notes."<br>"I was always one of those who would go find the<br>    answer."<br>"So I went back to my office and Googled." |
| Pacing/Completion | "I become more focused and more measured."<br>"We need to do X, Y, and Z by the end of the<br>    month, or quarter, or year."<br>"I can sequence really well."<br>"I am very big on plans and matrices." |
| Joy in Learning | "So it will be fun. At the end of the day, it's going<br>    to be successful and everyone will revel in<br>    the success."<br>"I'm totally engaged and excited."<br>"That's one of the joys of this job." |
| Goal Orientation | ". . . always trying to keep that goal in mind . . ."<br>". . . work with a certain vision in mind."<br>"Don't allow the short term issues to impact the<br>    long term results." |

*Additional Characteristics*

The participants noted two characteristics that were important to their learning that extend Guglielmino's overall description (1978). It must be noted that this population and sample represented a unique perspective (role, age, gender) that was different from Guglielmino's sample, which represented the general population. Also, Guglielmino's findings were shaped by the experts in the field of adult learning and self-directed learning at the time and there have been dramatic changes in the culture, leadership demands, and the field of adult learning in the past 30 years. These additional characteristics may not show up in studies of the general population at the same level; although one, *tolerance for ambiguity*, was ranked just below the cutoff for inclusion in Guglielmino's overall description and is among the 33 characteristics reflected in the questions on the *SDLRS*.

Pioneering efforts and innovation appear to require a *tolerance for ambiguity* and a high regard for the *value of mistakes* to promote learning. The participants demonstrated resourcefulness and creativity in how they found the information they needed. A participant

noted that "I look at all of the research and I review all sides of the issue." Another resourceful participant described her research as

> Talking to and meeting with people that have the background and the knowledge or the information that I needed to know and learn, and using them as a resource, and sometimes they didn't even know necessarily that I was using them as a resource.

*Tolerance for ambiguity.* Regarding *tolerance for ambiguity*, one participant discussed how she learned to move from concrete thinking to adapting to uncertainty and suggested that "*Maybe* is okay. Sometimes leadership comes out of *maybe*. Embrace your *maybes*!" Another used the metaphor of driving on a dark country road and only being able to see as far as the headlights can illuminate and described "living in that space of the unknown and just doing the best I can with the 200 feet that are in front of me that I can do something with." Another noted that "in ambiguous situations I draw people out and really clarify what they mean. . . . I constantly read a lot of different periodicals and so there's something that I always get from whatever I'm reading [even when it is not immediately apparent how it is relevant]." Another participant demonstrated the ability to accommodate ambiguity, contradiction, and paradox when she spoke of "thinking about the conflicting demands" and adding that "at some point you've got to take this leap of faith." One participant described leading her learning organization through critical questions with a question, "How do I, in my position, continue to try to get some traction on this topic that really nobody wants to talk about? But again, it's sort of vague." Another described a similar circumstance with, "in times of ambiguity or stress for the organization, I'd try to be more process oriented, so that more voices can be heard." Another described how her experience shaped her capacity stating,

> I became, at that point, more open to ambiguity . . .in today's world and fast changing environments, to try to be in control or find that there's some certainty to anything, or certain answers or certain prescriptions is just not useful. So it's better to be a little bit ambiguous.

Kegan (1994) suggests that the capacity to incorporate ambiguity, contradiction, and paradox into one's thinking may not develop until around age 40. The youngest sample member was 39 and all members of the sample represented people in leadership positions, so it is not surprising that there was evidence of this characteristic. King and Kitchener (1994) describe a similar capacity to reconcile oneself with the limits of authority and logic with stages 6 and 7 *(Reflective Reasoning)* of their *Reflective Judgment Model* which outlines developmental periods of reasoning. People in that stage of development accept "that knowledge claims cannot be made with certainty, but are not immobilized by it; rather, make judgments that are *relatively reasonable,* and about which they are *relatively certain*, based on their evaluation of available data" (p. 40). Wheatley (2002) reminds us that "We can't be creative if we refuse to be confused" (p. 37).

*Valuing mistakes. The participants evidenced* high regard for the value of mistakes. There was a general agreement that in promoting innovation, mistakes represent progress. One noted

that, "We say around here that 'if you don't make any mistakes, you're not trying hard enough.' . . . making mistakes is fine. That's how we learn." Another participant suggested "Take the risk. What's the worst thing that can happen? You fail? Okay, you fail. You make a mistake? You make a mistake." In more blunt terms, one noted, "My entire career has really shaped my leadership style and that's mostly from, I'll be honest, 'screwing up.'" Providing another perspective, another noted that "it is much easier to clean up somebody else's mistakes than your own." One participant was discussing several modes of learning and added with a chuckle, "So I think there's learning from mistakes, the darker side of learning." Also, with humor, a participant added, "I don't take myself very seriously. I'm willing to be wrong, although that's not very easy for me." Yet another confirmed the need to create an atmosphere that is tolerant of mistakes with, "everybody gets the freedom to fail and I think that's how people learn." Perhaps Levine (Levine, Locke, Searls, & Weinberger, 2000) captures the need for learning through mistakes with humor best:

> Being wrong is a lot funnier than being right. The right type of laughter – laughter at what the mistake reveals about our situation rather than laughter aimed at the person who dares to be human – is enormously liberating. In fact, laughter is the sound that knowledge makes when it's born. (p. 155)

*Learning Strategies*

The participants spoke of many learning resources such as mentors, books, the internet and conferences, workshops, and journals available through associations. Other work with these data (Liddell, 2007) outlines learning strategies in more detail and concludes that, "facing new challenges within their organizations or in the environment, experienced women executives convene conversations with colleagues, board members, staff and others to learn what they need to know to lead" (p. 96). Participants also learned through volunteer experience and teaching. They learned through models, both real people in their lives and ideal people they read about in biographies.

Many also mentioned learning from negative models. Several participants noted working for negative people and learning what not to do. One clarified, "I've worked for people who did not respect people or who did not treat them well, who were essentially abusive." When asked about people who have influenced their thinking or leadership approach, one divided her list into positive and negative models, sharing a list "of people who taught me what I didn't want to be." Another added, "I've probably learned as much about how I would not like to see things done." Two others parroted that theme with, "It was almost as if I learned from watching him, what not to do" and "So I think that I have just observed that as something that I don't want to copy."

## CONCLUSIONS AND RECOMMENDATIONS

The participants in this study reflected the 11 prominent characteristics of the self-directed learner as articulated by Guglielmino (1978) and affirm the validity of these characteristics. They also reflected two additional characteristics: tolerance for ambiguity and embracing

mistakes. Previous work with these data yielded several conclusions (Liddell, 2007). In today's work environment, learning and leading are inextricable processes of exploration and discovery. Learning needs, processes, and strategies change over the course of careers from learning technical information packaged in training workshops, books, articles, and courses to the exploration of real problems in ambiguous situations and complex sets of relationships. This sample does not represent the larger general population, so grand conclusions about adult learning and specifically self-directed learning cannot be generated. However, the current study does provide some foundation for further study of the developmental milestone of conceptual accommodation of paradox, ambiguity, and contradiction as well as the capacity to learn from mistakes (both one's own and others').

There are a wide variety of executive support systems utilized by the participants including online programs, training programs offered by commercial and academic institutions, and networks sponsored by professional associations. In practice, the findings of this work suggest that the design of executive support programs take advantage of the self-directed learning readiness of the participants. An effective design might build upon the 11 characteristics of self-directed learning and offer opportunities to learn through ambiguous situations and mistakes. The participants naturally sought out *affinity groups* for problem solving through existing organizations, informal gatherings, and newly formed local associations. The professional support available through these groups could take advantage of what is known about the self-directed nature of the executive's learning.

Further research might include follow-up with this existing sample with more direct questioning or surveying to determine the generalizability of some of the emerging themes. Some highly self-directed participants were extremely aware of their methods and motives for initiating learning. Other participants were far less conscious of their learning methods or reasons for continuous learning and spoke of the phenomenon more vaguely as just part of doing the job. Crafting questions to discover participants' awareness of their methods and motives might offer valuable information for increasing the effectiveness of learning opportunities and designing programs or curricula. This work could also be replicated with an expansion of the current sample of women to include other parts of the country or larger foundations as well as exploring the informal learning of male executives and executives in other sectors (corporate, government, or higher education). Another suggestion for further study is to explore the aspiration or motivation of these women executives to determine the degree to which seeking leadership positions might be related to self-directed learning.

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# UNDERSTANDING A FRAGILE LIFE: THE INFORMAL LEARNING OF A MULTIPLE KIDNEY TRANSPLANT RECIPIENT

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This study explores the self-directed learning of an individual with a chronic illness, as she seeks to maintain her role as a wife and mother; address the challenges associated with her illness; and, at the same time, improve her individual worth through an ongoing informal learning process.

This study is a mixed classical and interpretive biographical approach, focused on the story of a wife and mother's experience with kidney disease and its complications and, in particular, her informal learning process as she came to an understanding of her health experience. Keeping, English, and Fleming-Courts (2001) assert, "Informal learning theory explores how individuals learn through daily interactions, outside the mainstream of academe. This learning occurs on a continuum of intentionality and consciousness" (p. 313). Mishel (1984) notes the importance of self-education for those who suffer from chronic illness. This study reports a wife and mother's perspective of her self-directed learning, an informal learning process of trying to make sense of her chronic illness. Dominice (2000) describes experiential learning or informal education: "confronting and reflecting on the learning moments in their own lives, [adults] understand the extent to which learning in many different situations is an active search for meaning" (p. 4).

Until age 24, Christine was a young lady who led a charmed life, accomplishing most of her learning goals. She was attractive, talented, outgoing, and healthy. She married in 1982. The next year pregnancy triggered the beginning of a lifelong health struggle with kidney disease—chronic glomerular nephritis. Christine's attempts to regain health with a strict regime of medication, diet, and exercise were unsuccessful. Five years later, she risked having another child. The second pregnancy and birth of a two-month premature son worsened the kidney disease and eliminated hope of regaining her prior health.

Eight years into the marriage, Christine experienced total renal (kidney) failure and the terrible uncertainty of kidney transplantation. Consequently, the next two years brought about several painful surgeries and the dreariness of four hours of dialysis every other day. While she waited for her first kidney transplant, Christine endured restricted water intake and diet, and bed confinement before, after, and in-between dialysis treatments. At age 33, she received a kidney transplant, allowing her to again participate in the workforce and with her family for the first time in years. Paris, Calhoun-Wilson, Slentz, and Dahr (1997) note; "Less than 50%

of [kidney transplant recipients] assessed as medically able to work actually return to successful employment" (p. 10). Unfortunately, her transplanted kidney failed after 24 months and Christine returned to dialysis. Exponentially exacerbating her situation, her kidney-related blood pressure problems escalated out of control shortly after her first kidney rejection and Christine suffered a life-threatening stroke.

At age 35, Christine received her second kidney transplant. The two years following, she felt better than any time in the previous 10 years. Her body, distorted by side effects of anti-rejection drugs, returned to its beautiful self, although emotional scars remained. Christine's activity level and perspective again improved. Over the next five years, however, her anti-rejection medication severely damaged the second transplanted kidney. She again waited on the transplant list for a third kidney.

## PROBLEM STATEMENT

The physical, emotional, and mental hardships multiple kidney transplant recipients experience as they attempt to work, raise a family, and conduct other normal daily activities can be a long-term challenge, regardless of medical expert concurrence that the transplant procedure was successful. Lindqvist, Carlsson, and Sjoden (2000) refer to a study categorizing limitations:

> Hathaway, Strong, and Ganza (1990) found three main categories among renal transplant patients: multiple key problems (e.g., preventing and managing medical crisis, preventing or living with social isolation, adjusting to changes in the disease), hopes (e.g., longer life with fewer health problems, being able to return to work, having more free time, no longer being on dialysis), and concerns (e.g., rejection and other health problems, not feeling as well as had hoped, side effects of medications, having problems returning to work, missing dialysis friends). Thus, the limitations…are multidimensional. (p. 292)

In a study of patients adapting to dialysis through informal and incidental learning, Keeping, English, and Fleming-Courts (2001) found that new patients return home from their initial treatment to "disrupted lives, demands of care, and the need to learn new ways to live. There is no evidence of a systematic adult education plan to educate [kidney patients] to manage their new life or to do anything beyond care for their physical selves" (p. 321). Keeping, et al. call for systematic, but informal studies of informal learning among renal patients. Therefore, the problem addressed by this study was the lack of understanding of how a wife and mother can utilize informal self-directed learning to address the challenges of struggling with kidney disease and its complications, while attempting to raise a family and maintain individual self-worth.

## PURPOSE

The purpose of this qualitative biographical study was to examine the informal self-directed learning of a wife and mother as she addressed the challenges of living with a chronic illness and struggled to maintain her family roles and her individual self-worth.

METHODOLOGY

Addressing interpretive biography, Coles (1989) notes, "The people who come to us bring us their stories. They hope they tell them well enough so that we understand the truth of their lives" (p. 7). Bochner (2001) suggests, "Think of a life being expressed not merely as data to be analyzed and categorized but as a story to be respected and engaged" (p. 132). Frank (1995) advocates giving a story that includes illness a sense of authenticity, credibility (Lincoln & Guba, 1985) and verisimilitude (Ellis, 2004). This mixed design weaves Denzin's (1989) nine guidelines for classic biography with his suggestions for an interpretive biography, "creating literary, narrative, accounts and representations of lived experiences" (p. 11).

*Participant*

This study analyzed the data of one primary participant (Christine), describing her life ad learning challenges during the years 1982-2005 as she dealt with severe kidney disease. Her accounts were augmented by additional insight and data from her husband (researcher).

*Delimitations and Limitations*

This study was delimited to the informal self-directed learning utilized by one multiple kidney transplant recipient (Christine) to address the challenges directly related to her chronic glomerular nephritis during the years from 1982 to 2005. Data include Christine's historical journals; a study journal focused on the research question; historical video-recorded data; audio-taped interviews; researcher observations, and supplemental archival data such as hospital reports. Possible study limitations include researcher bias due to the relationship (husband) with the participant and additional recollection of incidents, events, and feelings related to the study.

*Role of the Researcher*

Next to the participant, I (Hollingsworth) am as close to this lived experience as anyone can be. As a spouse, I have seen a healthy young woman evolve into a chronically ill victim. I know what chronic kidney disease can do to an individual and a family. I have seen a terrible physical condition take control of an unbelievably strong individual, only to play havoc on the emotional frailty of that very strength. I have seen this disease vanquish the goals and dreams of a married couple through trials and medical catastrophes. Despite my intentions to remain neutral, this study may hold biases and assumptions brought about by my closeness to the participant and her experiences. I proudly, but cautiously, reveal an authentic story.

DATA COLLECTION

The Institutional Review Board application was completed and approved. Participants signed informed consent forms describing the study's purpose, methods, and responsibilities regarding human subjects concerns.

Denzin's (1989) first two (of nine) guidelines for biographical studies guided the data collection process. First, the grand tour question and the sub-questions encompassed the key concepts. Second, pertinent objective events and experiences were recorded. Prior to the interviews, Christine was given the grand tour question and nine sub-questions in a journal with separate sections for recording thoughts about each question. During a three-week trip to Hawaii in 2005, Christine spent each day meditating on the beach, documenting responses to each question. Weeks later, the actual interviews were rich and full of considered responses, in addition to spontaneous comments.

The interview process followed a semi-structured protocol allowing Christine to express her thoughts and memories. All nine interviews were conducted in Christine's living room, as she sat in her recliner. An observation protocol was used to capture nonverbal reactions. At each session, the grand tour question was followed by one of the nine sub-questions in chronological order:

*How does a wife and mother, utilize informal self-directed learning to address the challenges of living with a chronic illness in her efforts to raise a family and maintain individual self-worth?*

1. How does the participant utilize informal self-directed learning to address physical, emotional, and social changes and limitations in her life?
2. How does the participant utilize informal self-directed learning to perform and function as a wife and a mother?
3. How does the participant utilize informal self-directed learning to address financial demands and concerns related to her chronic illness?
4. How does the participant utilize informal self-directed learning to address the perceived future regarding personal and family life as it relates to her chronic illness?
5. How does the participant utilize informal self-directed learning to address employment opportunities?
6. How does the participant utilize informal self-directed learning to address functioning in church, neighborhood, and community service?
7. How does the participant utilize informal self-directed learning to continue self-stimulating activities and hobbies?
8. How does the participant utilize informal self-directed learning regarding her outlook on life?
9. How does the participant anticipate utilizing informal self-directed learning to address future aspirations and possibilities?

A digital audio recorder captured the interviews, which were stored on a computer, and sent electronically via email to a professional transcriber. A written transcript was returned. The transcriber understood to include sighs, laughs, and pauses verbatim in the written transcript and to verify the transcript with the recording. I wanted to relive each interview in both written and audio form.

DATA ANALYSIS

Denzin (1989) recommends triangulating events by source and point of view so that contradictions, irregularities, and discontinuities can be established. For this study, triangulation was applied in the form of interview data from Christine, researcher observation data, Christine's past and present journaling information, applicable medical records and doctor recommendations, confirming visual data, and extant literature. Denzin also suggests continual member checks with the interviewee to verify her interpretation of events. Throughout analysis, several short informal interviews clarified fit with Christine's lived experience. I solicited most follow-up dialogue; however, Christine often initiated and provided additions and corrected interpretations. Denzin's (1989) fifth and sixth guidelines note the need to review data for validity, obtained by clarifying researcher bias (Creswell, 1998), providing rich, thick description (Creswell, 2003). I rigorously avoided influencing Christine's responses with my understanding of her situation and role as the researcher. I wanted her to complete her thoughts alone, providing the sole influence on study themes.

*Methods of Verification*

Denzin's (1989) seventh guideline suggests testing hypotheses and searching for negative evidence obtained by peer debriefing (Creswell, 2003) and use of an external auditor (Creswell, 1998). The final two guidelines call for verification of the narrative with the participant and modifications based on her reactions, obtained by member checking described above and explication of a clear audit trail (Lincoln & Guba, 1985). The chronological reconstruction of Christine's lived experience followed a validation process seeking truth (Silverman, 2001) and verisimilitude (Ellis, 2004).

*Data Analysis and Interpretation*

Analysis consisted of consolidating the data to clusters; reducing and synthesizing clusters to themes; and finally interpreting themes to a narrative, in order to provide an authentic portrait. Merriam (1998) suggests "consolidating, reducing, and interpreting what people have said and what the researcher has seen and read—it is the process of making meaning" (p. 178).

Christine has weathered multiple losses over the years due to her chronic illness. Her illness has affected her informal learning process over time, as she struggled with accepting and learning about kidney failure and living with declining physical and psychological health, control, independence, self esteem, finances, and employment. These losses emerged as five sub-themes in this study: *emotional consequences*, *effects on the family*, *financial burden*, *social withdrawal*, and *physical effects*, addressed by an overarching theme: *lifelong learning challenges*.

Despite ever-present physical effects that interact in the disruptive world that is chronic kidney disease, Christine spoke about a continual process to make sense of her changing body and her efforts to maintain normalcy whenever possible. Information available in hospitals and doctors' offices was aimed more at the disease and not much on the patient and his/her life. Christine's adaptive process of utilizing informal self-directed learning helped her in

"sorting the priorities that had meaning and practical benefit" (Keeping, English, & Fleming-Courts, 2001, p. 321) for her life.

*Primary Theme: Lifelong Learning Challenges*
Speaking about the learning process, Knowles (1998) suggests, "Learning is a change in the individual, due to the interaction of that individual and his [her] environment, which fills a need and makes him [her] more capable of dealing with his [her] environment" (p. 12). In his review of adult learning theorist Eduard C. Lindeman's vision for adult education, Smith (2004) notes that life is a learning and educational experience with no ending, that adult education addresses situations not subjects, and that the resource of highest value in adult education is the learner's experience. Smith states, "Every adult person finds himself [herself] in specific situations with respect to his [her] work, his [her] recreation, his [her] family-life, his [her] community-life etcetera—situations which call for adjustments. Adult education begins at this point" (p. 4).

One thread throughout various interviews with Christine was her desire to continue her lifelong learning pursuits, no matter the personal detours. These pursuits were voiced in a number of ways, all of which included added challenge. She spoke about her disappointment regarding the pursuit of higher education:

> I've always wanted to expand my mind, if for no other reason than to feel better about myself. I have always wanted to add to my [cosmetology] vocation and stretch my talents into another career if needed. I wanted to learn some different skills where I could contribute more to others, to help others feel good about themselves.

> I've tried to force myself to read good books over the years, even when I didn't feel good enough to get out of bed. With the challenge of my health problems and the consuming efforts to raise two children, that goal did not always materialize, but the desire to grow personally has always been important to me.

Christine talked about her changing ability to devote effort to start, continue, or ultimately complete many of her educational goals in the midst of her physical illness, which interrupts her learning process on a continuum between distraction and monopolized attention. The stress in her life has restricted her aspirations and at times affected (e.g., following stroke) her learning capability. Caimi, Carollo, and Presti (2005) contend that chronic renal failure patients are limited in their pursuit of a consistent lifelong learning regimen "partly through their relationship with a reduction of physical and mental activity" (Allen *et al.*, 2002, p. 90).

Christine never blamed anyone for her misfortunes, and when it came to a lifelong learning approach, she "set the pace." Though her pace was rarely steady, it was always moving forward "for my own sanity." She revealed:

> It has always been important for me to make progress intellectually, no matter how small those increments were. I look at it this way—instead of sitting in

an academic classroom, working towards a diploma, I ended up spending time reading magazine articles and medical journals learning the ins and outs of kidney disease. I expanded my mind by searching the internet for side effects of a new drug I was required to take, or looking for the right nutritional approach for a kidney patient. My time was spent looking to expand rather than restrict my life—at least in that regard.

Valente (2005) suggests that it is not uncommon for people to consult internet sources for information about health conditions. Lindeman (1926) claims, "Experience is the adult learner's living textbook" (p. 10). Christine is an informal self-directed learner, focused on learning about living with her illness. Keeping, English, and Fleming-Courts (2001) describe informal learning:

> This learning occurs on a continuum of intentionality and consciousness. Incidental learning is the byproduct of unintended outcome of a learning experience. While formal learning has a stated goal…informal learning may or may not have a specific goal and may or may not be deliberately planned…. Informal learning occurs everyday. This type of learning occurs outside classrooms and, although intentional, usually does not result in a certificate or diploma. (pp. 313-314)

Christine talked about how precious the "good times" have been over the years, and the need to "take advantage of those moments when I felt well enough to move forward intellectually." Discussing a self-directed learning approach to kidney disease, White, Ketefian, Starr, and Voepel-Lewis (1990) suggest, "Many new self-care skills, complex immunosuppressive therapy, and knowledge and understanding of health problems must be acquired by patients receiving renal transplants" (p. 421). Christine discussed her perspective on learning now compared to two decades ago:

> As it applies to educational pursuits, I think the hardest part for me to accept as a 47-year old woman was to—is to let those dreams go by and move on—to say to yourself, you know, those things, those goals, are probably not going to happen for me. But at the same time, I've had to look for new ways to stimulate my mind, reroute my limited energy in a different direction, and find new aspirations that will be rewarding. I need to work my mind in other directions and be all right with that. There are plenty of informal educational opportunities that make life worthwhile in that aspect. When my body allows it, and my mind wants to cooperate, I need to watch for those possibilities.

Smith (2004) speaks to Lindeman's vision for adult education as not "bound by classrooms and formal curricula. It involved a concern for the educational possibilities of everyday life; non-vocational ideals, situations not subjects; and people's experience…" (p. 3). Christine's informal self-directed learning experience, her lifelong learning approach, captures that vision. She noted: "In my opinion, there are a lot of opportunities for me to be part of every

day, in some way, some fashion, that will move me forward and expand my intellectual aspirations."

Christine admitted lifelong learning and self-directed pursuits have been a roller coaster of ups and downs. The lifelong learning aspirations she dreamed of have long since been altered. Her chronic kidney disease has reshaped her life, and her informal lifelong learning approach has been adaptive. She has kept a fighting spirit, if only a flicker at times, which has helped her progress—on her terms.

*Sub-Theme 1: Emotional Consequences*
After struggling with chronic glomerular nephritis for nearly a quarter century, it is clear that next to the unrelenting physical effects kidney disease has had on Christine's body, the emotional consequences of this disease have dominated her existence. Christine comments:

> Everything I did became difficult, my emotions were all over the place as my body restrictions multiplied—everything I tried to do was harder than it should have been, or at least harder than if I'd been normal.... Bad health, on top of everything else that goes on in life, continued then and continues now to occupy every aspect of my existence, until emotionally, at times, I feel like I can't go on.

The uncertainty of each day has and will continue to wear on Christine's emotional and mental stability. Keeping, English, and Fleming-Courts (2001) contend that while most renal patients' bodies fairly readily adapt to the physical regimen of their illness, their psychological and emotional attitudes often require adjustment to far-reaching lifestyle changes.

Probably the most constant negative emotion in Christine's life is depression, developed from years of hopelessness and a degraded quality of life. Though Christine continues to learn more and more about her illness, she admits that she lives it with depression as a consistent silent partner.

> I know that I have struggled with depression and—and the emotional highs and lows of what this disease does to you. I don't think anybody can ever, you know, imagine what—what a disease like this can do to them. Because it affects you in every area of your life—I wasn't prepared how it would—how it would dominate my life.

Couser (1997) contends some diseases "annihilate selfhood" (p. 5). "All of us live uncertain lives, of course, but living with renal failure and its treatment multiplies those uncertainties" (Morgan, 1988, p. 219).

*Sub-Theme 2: Effects on the Family*
Schugurensky (2000) suggests that informal learning includes three forms: self-directed learning, incidental learning, and socialization or tacit learning. Christine revealed her

perception of the socialization of her chronic illness on her family, "Virtually every aspect of my medical problems and health-related experiences have undoubtedly affected my entire family—the whole family system—and unfortunately, I believe in a very trying and sometimes negative way." Lewis, Starr, Ketefian, and White (1990) discuss at length pervasive effects of chronic kidney disease on all members of a family. Sexton and Munro (1985) claim:

> A chronic illness [such as kidney disease] which affects one member of a family has implications for all family members, and demands use of a variety of adaptive mechanisms to re-establish equilibrium for the family system. During illness some roles and responsibilities of the ill family member must be assumed by others. (p. 84)

Christine had no other choice but to draw support from others.

> I could not get out of bed, not necessarily from doctor's orders, but rather physically—I didn't have the strength to get out of bed. It was a difficult time to have little children in the home and unable to care for them like I needed to….I cried many nights about not being capable to care for my children and constantly worried that they should be with their mother, rather than in other people's care. It was overwhelming to me emotionally—I was so concerned about the effect it was having on my two babies.

Christine talked about "dragging her children" through two transplants, a serious stroke in-between those two transplants, and several years of dialysis.

> I remember feeling terrible about the care I was not able to provide my children during the weeks and months I was on dialysis—four separate and extended bouts with dialysis—all very dreary times. However, as my children have gotten older and matured, they have realized the serious nature of my condition and been especially attentive to my situation. It has been a wonderful part of my life—something that has given me strength and encouragement along the way.

As another helpful coping measure, Christine mentioned learning to appreciate the consistent use of humor in her home and the ongoing positive affect it had on her well-being. "My husband has always been able to make me laugh… I have reveled in the experience of laughter in my home." Herth (1990) claims, "The spirit of lightheartedness can provide a communication link between persons and a way of coping with failing body function and confused emotions. It can provide a sense of release from the present moment" (p. 1255). Christine made the point, over and over again, that efforts continue in her family, and with her personally, to use humor appropriately in their journey to understand and adapt to the impact chronic kidney failure has on her as an individual and on those she loves.

*Sub-Theme 3: Financial Burden*

Learning to cope with "the financial impact of chronic disease [including kidney failure] can be devastating. Medical visits, nursing care, assistive devices, and much more can quickly drain even the most solvent family's bank account" (Price, 1980, p. 285). In 2005, McCarthy reported in the *Wall Street Journal*, "The annual cost for the average dialysis patient is about $64,000" (p. A9). Talking about expenses for ongoing laboratory work, recurring need for blood transfusions, and for her emergency *Life Flight* helicopter transport after suffering a serious stroke, Christine explained that even with good medical insurance the coverage comes with "loopholes" which include expensive prescription medications.

Christine lamented her inability to work and develop her chosen career as a licensed cosmetologist. Three in-home hair salons have stood empty due to her health.

> I had high hopes with each salon and did build a respectable clientele, but the roller coaster of health issues destroyed the customer base each time. People aren't going to wait to get their hair cut—they'll go somewhere else…. There were just too many times when I didn't feel well enough to work—it was so frustrating and disappointing…. Once again, I had created a financial drain on my family, rather than something that would make a positive difference financially.

Christine pointed out that there have been many kind acts, some of them anonymous in nature, by individuals and organizations that have been most sympathetic to her situation—those who have shown charitable acts in various ways. She revealed, "Good, understanding, and compassionate people have been part of my life over the years. I have had to learn to be a good receiver and learn the value of letting others give."

*Sub-Theme 4: Social Withdrawal*

"Ill persons' restricted lives lead to constricted concerns. Under these conditions, illness structures their world and shapes their self-concepts" (Charmaz, 1983, p. 175), defining another aspect of socialization or tacit learning (Schugurensky, 2000). Christine talked about how her loss of desire for relationships with "people other than my family" evolved:

> I knew people understood my situation to some degree, but I lost confidence and the will to try in so many ways. Getting involved got to the point where it seemed as big a burden on others as it did on me. I just got tired of getting left behind, even if it was only in my mind.

Slowly the social aspect of her life diminished and she went from "being involved in everything" to minimal involvement in non-family activities. Christine said "I saved what energy I had for my family—for the things that mattered most." She also spoke about starting a biography about her mother, and immersing herself as much as possible into the project. She concluded:

> I could just sit down and do a little at a time—something that wouldn't require much from me physically. It would give me one more thing, something worthwhile at this point in my life to look forward to and work on.

Charmaz (1983) notes, "Since selves ordinarily are situated in networks of social relationship, social isolation typically fosters loss of self (p. 176). Miller (1985) suggests that social isolation and loneliness are associated with "depression, alienation, and feeling rejected, misunderstood, hopeless, unwanted, unloved, and worthless" (p. 80). Regarding those who continue to contact Christine to let her know of their concern, she described an inner anger from time to time, with many who seem to "glide through life with little to no trouble" Christine added, "At least for me right now, at this stage in my life, I don't need to be reminded how good other people have it."

*Sub-Theme 5: Physical Effects*
"Weak is warm, tired arms, heavy legs, dragging steps. I see the fumes of my life force, my physical strength, slip away from me like smoke from a chimney on a cold winter's day…. I am mourning the loss of my body" (Moua, 2001, p. 53). The physical effects of Christine's kidney disease over the past 23 years have taken an enormous toll on her approach and attitude toward life. She has watched her body transform from four seasons of physical activity to a constant winter of confinement.

> To review the decline of my health or to revisit the physical limitations forced on my body would be an exercise in hopelessness. For me, kidney failure was the beginning of a string of miserable health consequences, each of which left their mark on my body and soul. It all makes me feel older than my years.

Christine catalogued a number of physical challenges that plagued her once-healthy body. "During a difficult first pregnancy, I developed toxemia, and experienced health issues for the first time in my life." Toxemia led to hypertension (high blood pressure), common with kidney disease. Renal failure made her susceptible to infections, bruising, and poor wound healing. "I get to the point where I worry about exposure to anything contagious that's going around, and a simple cut or bump seems to take forever to heal." Christine's skin, once known for its olive radiance and healthy tone, has transformed over the years to a thin, loose, pale-yellow shell.

After years of taking as many as 40 pills a day, and living with their side effects, Christine developed the gastrointestinal condition, colitis, "common in patients after transplantation and may take the form of a necrotizing ulcerative colitis" (Gilbert & Goyal, 1984, p. 148). Christine will likely contend with this usually irreversible health issue throughout her life.

When in need of dialysis, Christine suffers from anemia, a complication stemming from low blood count that drains energy from kidney disease patients (Parson & Harris, 1997); and she often cannot muster the energy or strength to perform even the simplest of tasks. At times, even reading was not possible. Christine was 30 years old the first time she required dialysis. Discussing her four separate experiences with "the machine," Christine stated, "Dialysis can

be your best friend or your worst nightmare." Despite the fact that it was the only option, her experiences with dialysis were not positive.

In 1994, at age 35, during one of Christine's stints with dialysis and in between her first and second kidney transplants, she suffered a serious stroke and was air-lifted to a major medical center. Christine's constant high blood pressure became uncontrollable and resulted in the damage that temporarily robbed her of sight and memory.

Kidney transplant recipients become victims of what Christine calls a "cruel drug chain-effect." She is like many others in her situation who "tire of the unpleasant side effects of drugs needed to maintain the transplant" (Sutton & Murphy, 1989, p. 49). Although not all-inclusive, Sharp (1995) lists some of the side effects that accompany a successful kidney transplant: "Osteoporosis, cataracts, kidney failure, severe hirsutism, hypertension, impotence, facial acne, and other common long-term side effects of immunosuppressant and steroid use are regarded as medical inconveniences that accompany the successful prolongation of life" (p. 375). Eknoyan and Knochel (1984) also include: uremic frost, slow wound healing, xerosis, change in skin pigmentation, skin appendage changes, pulmonary infection, gastrointestinal tract problems, oral cavity problems, colitis, fecal impaction, anemia, congestive heart failure, inflammation, and muscle wasting.

While the relentless and unpredictable chronic-illness roller-coaster takes a huge health toll, in good times, such as her current situation after a successful third kidney transplant, Christine continues to pursue learning. "I have started to journal a bit more recently and have found enjoyment in starting an autobiography. I have also found joy in reading more than I used to." Even though these types of activities might seem minor for an average healthy individual, for Christine, and her health limitations, it is what is possible. "Sometimes in small things, large rewards can come—even if it is only a few minutes a day."

Merriam, Caffarella, and Baumgartner (2006) offer a hope that more individuals view themselves as learners competent to address myriad challenges of their lives. Christine echoes their hope, pointedly aiming it toward maintaining a normal lifestyle in the chaos of chronic illness.

## CONCLUSIONS AND RECOMMENDATIONS

This study describes Christine's self-directed informal learning to adapt to life with the chronic, relentless uncertainty of kidney disease. Her hope is to minimize the loss of control and maintain or improve individual worth despite her unpredictable illness. Her ongoing attempt to maneuver within a restricted lifestyle requires the help of some and the understanding from many, including herself. She cannot change the plight of her disease, nor can experts halt its course, but Christine's hope is through her informal and tacit learning to normalize the interaction she has with others and to build up enough stamina, both physically and emotionally, to stay engaged with those around her—to want to engage.

Lifelong learning pursuits do not always come in the form of formal education. Christine's informal learning has focused on fully understanding the world that is kidney disease, with the calculated ability to decipher side effects, the need to stay abreast of ever-changing medication restrictions, and the desire to understand complicated and diverse medical terms. Her self-directed learning experience involves change and adjustment, in non-routine conditions. Her informal self-directed learning is a mix of proactivity, creativity, and critical reflection. Christine's illness will never go away. Informal learning is an adaptive approach to normalcy. Perhaps Christine's story will assist others in facing the challenges of chronic illness, as well as their caregivers and others who seek to offer support. More research is needed on the self-directed informal learning of the chronically-ill.

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# FACULTY REFLECTION ON TEACHING: *WALKING-THE-WALK*

Robert J. Bulik

The *expert blind spot* (EBS), a metaphor for teaching, is a key component in how educators approach educational assignments. It is our *expert* beliefs that serve as the basis for how the subject matter of a discipline is delivered to a novice learner. If we are blind or unclear about our beliefs about the learner, the aims of teaching, the subject matter, or the teaching-learning transaction, we will force students to struggle (and perhaps fail) in new subject matter domains because of the way in which we scaffold the delivery of material. Self-reflection, a central tenet of self-directed learning, can help educators identify their *blind spots*. During a 120-minute workshop that provided time and structure for self-reflection, faculty reported a small but important change in thinking about teaching and learning. Faculty self-reflection on their own teaching beliefs can make transparent potential gaps or *blind spots* in their approaches to teaching.

In an article aimed at professional educators, Nathan and Petrosino (2003) described what they perceived to be an *expert blind spot* (EBS). This metaphor for the teacher-learner transaction was drawn from the medical literature. The blind spot is a section of the retina where the axons that make up the optic nerve exit the eyes are without visual receptors. The "hole" in our vision is mentally filled in with its immediate surroundings so that instead of seeing a black spot because of the lack of visual receptors in that area, we see (or think we see) a total image.

Nathan and Petrosino (2003) presented evidence suggesting that those with advanced knowledge of a specific subject area may actually be at a disadvantage when it comes to teaching specific subject matter in comparison with novices on certain tasks, because they are unaware of their "blind spots." They argued that expert knowledge tends to be highly schema-based and that experienced practitioners may actually miss or overlook improbable events or disparately related concepts. Expert teachers can be blind to the developmental needs of novice learners. The *expert blind spot* hypothesis is this: "…well-developed subject matter knowledge can lead people to assume that learning should follow the structure of the subject-matter domain rather than the learning needs and developmental profiles of novices" (p. 909).

The existence of the EBS should be a central concern in faculty development and to educators generally because teachers' beliefs about the learner, the aims of teaching, the subject matter,

and the teacher-learner transaction act as a conceptual map for instructional decision-making. It is our *expert* beliefs that serve as the basis for how the subject matter of a discipline is delivered to a novice learner. If we are blind to the needs of novice learners in any of these four areas, we will force students to struggle (and perhaps fail) in new subject matter domains because of the way in which we scaffold the delivery of material.

## PROBLEM

The problem for those of us in faculty development roles at academic health care centers is this: How can we encourage teaching faculty to become aware of their own personal, *expert blind spots*? Knowles (1975) provides us with a potential insight for faculty development in his definition of self-directed learning:

> ...individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (p. 18)

It seems that it is through self-reflection that students might diagnose their own learning needs and self-identify the other strategies associated with learning that Knowles embeds within his definition of self-directed learning (SDL). If our aim is to develop self-directed learners, then faculty should also *walk the walk* and self-reflect on their own beliefs about teaching. While faculty development workshops on writing strong learning objectives and developing engaging PowerPoint presentations teach important skill sets, improvement in the teaching process itself is more the result of how teachers think about their task: What are faculty beliefs about how they can influence student learning? What have they come to know and understand, based on experience and experimentation in action? To what degree do they see teaching as an important part of their scholarly work?

Apps (1989) has argued that: "Identifying and examining personal beliefs and values can help teachers of adults improve their performance and change the way in which they view their roles as teachers" (p. 17). The linkage of self-reflection on beliefs with changes in educational practices affirms the value of this approach to assisting teachers of adults to discover their own blind spots. In *The Reflective Practitioner*, Schön (1983) uses two terms relevant to this discussion:

1. *reflection-on-action,* described as the "I don't knows" that prompt looking into answers more completely; and
2. *reflection-in-action*, the brief reflective moments that result when a question stimulates thinking about how to answer or resolve a clinical issue.

The insights gained from these reflections can influence clinical practices. While Schön (1983) wrote about the necessity for reflection on clinical practices for the medical profession, Apps (1989) points to that same need for educational practices. Faculty development

activities at an academic health care center should encourage self-reflection in both clinical and educational practices.

PURPOSE

The credibility of faculty development programs has generally suffered from an oversimplified view of the educational process held by many clinical faculty teaching in academic health care centers (Skeff, et al., 1997). For example, a change in the delivery of the medical education curriculum from lecture-based instruction to small group, problem-based learning (PBL) represents major educational change requiring many clinical faculty to reframe their fundamental beliefs about the teaching and learning process and their role as teachers (King, 1999). Likewise, moving delivery of curricular content to web-based instruction challenges our abilities to maintain interactivity between faculty and students in this new virtual environment.

A continued reliance on skills-based approaches to faculty development is unlikely to provide the necessary support for faculty to reflect on their own approaches to teaching. Said slightly differently, are there blind spots faculty can identify through self-reflection on their own personal vision of teaching? We will examine a faculty development approach designed to assist faculty to reflect on their own personal visions of teaching and identify any existing blind spots.

In 1998, a southern medical school with a matriculating class size of 235 moved from lecture-based format for instruction to a small group, PBL format. A new overall goal was articulated by the School of Medicine faculty to help focus the delivery of the medical school curriculum: *to produce physicians committed to lifelong learning*. Through problem-based, case-based, and team-based learning, students are expected to develop self-directed learning skills. Following the traditions of PBL, small group facilitators encourage students to discover areas in which their collective knowledge is deficient. Recognizing such a deficiency, students can elect to treat it as a "learning issue," that is, as a topic requiring further study outside of the small group meeting. Recording an item as a learning issue, therefore, represents a commitment on the part of students to further research the topic on their own and in their own way, prior to the next meeting. Learning issues flow from the self-reflective process and have been shown to be critical determinants of student self-directed learning (Dolmans, Schmidt & Gijselaers, 1984; 1994).

It is both the time (scheduled PBL group meetings) and the structure of the educational experience (a problem or case presented by the facilitator) that prompts students to reflect on what it is they know (and don't know) about specific topics. Unfortunately, our traditional faculty development activities seldom consider asking faculty to reflect on issues, gaps, or blind spots in their teaching. It therefore seems essential to provide faculty with the time to reflect on their educational practices, what doesn't work and why, and what may lead to more productive approaches. It also seems necessary to provide a formal structure: prompts to initiate the process, to encourage focused reflection on individual teaching beliefs.

Consequently, a segment of faculty development workshops, seminars, and symposia, need to be based on the principles and practices of reflective, self-directed learning in order to provide faculty with the skills and the philosophical framework to teach effectively.


PROCEDURES

To address the limited focus found in the medical education literature on traditional faculty development activities and to respond to two initiatives on campus, a workshop was developed that provided both the time and the structure for faculty to reflect on their teaching beliefs.

*Sample*

Faculty from the four schools that comprise the academic health care campus, Schools of Medicine, Nursing, Allied Health, and Biomedical Research, participated in a Teaching Beliefs workshop in one of two venues, *Group A* or *Group B*.

*Group A*
The motivation to attend a stand-alone workshop on Teaching Beliefs was provided by the requirement for the development of a philosophy of teaching statement for a teaching portfolio. The teaching portfolio could be used as application for admission to the Academy of Master Teachers (an immediate need), and/or for submission to the Appointment, Promotion and Tenure (APT) Committee (an eventual need).  A total of 31 faculty from across all four schools attended one of three workshops that were offered and completed a pre- and post- workshop survey.

*Group B*
This same workshop was also conducted as the introductory session in a 20-month faculty development series, the *Scholars in Education* program.  We requested follow-up feedback specifically on our Teaching Beliefs workshop through an email survey to our two most recent graduating cohorts (n = 36) of *Scholars* (*Trial B*).

All faculty attending either of these workshops taught in one of the four schools on campus, held faculty appointments, and were terminally degreed clinicians (M.D.) or biomedical researchers (Ph.D.).

*Content*

The framework for thinking about personal teaching beliefs developed by Apps (1998) was adapted for faculty at an academic health care center. The framework includes beliefs about (a) the learner, (b) the aims of teaching, (c) the subject matter, and (d) the teaching-learning transaction.  Campus faculty had the opportunity to attend a 2-hour faculty development workshop on teaching beliefs.  The framework, along with examples of *prompts*, included:

*Beliefs About Learners*

What do you believe about the potential for growth and development of your students?
What is their ability to change / improve?
What is their motivation for learning (intrinsic / extrinsic)?
What do you feel is their ultimate potential (nature vs. nurture)?

*Beliefs About the Aims of Teaching*

What does it mean to "meet student needs"?
What is *enough* instruction time?
What is the role of distance learning?
Is *learning how to learn* important?
What do you hope to accomplish as a teacher?

*Beliefs About the Subject Matter*

What content is essential to only your discipline?
Do you tend to treat students differently if they say they are (or, are not) entering your subject area?
What assumptions do you have about lifelong learning?

*Beliefs About the Teacher-Learner Transaction*

What is the optimum environment for learning?
What is your role in the transaction (implies two-way)?
What do you think about feedback (vs. evaluation)?
How do you learn best?

## *Process*

A brief introduction and rationale (3-5 minutes) begins the workshop. Then, individual reflection and small group discussion on the four topics occurs at each of the tables (approximately 8-10 minutes for each of the four segments). This is followed by a reporting-out to the larger group (approximately 3-5 minutes for each of the four segments), and then large group discussion of the issues takes place (approximately 15 minutes for each of the four segments).

## *Assessment of Outcomes*

While it is relatively easy to evaluate the outcomes of a skills-based workshop on learning to conduct a PowerPoint presentation (Did faculty use the appropriate font size or number of lines of text per page?), assessing the value of a workshop on self-reflection is more challenging. Faculty attending the campus-wide Teaching Beliefs workshop (*Group A*; n = 31), and faculty participating in the Scholars in Education program (*Group B*; n = 36), were given different evaluation forms to complete in order to provide both a short-term and long-term assessment of outcomes.

In *Workshop Group A*, the researchers were interested in obtaining information on the degree to which the Teaching Beliefs workshop encouraged reflection on personal beliefs about teaching.  On a Likert scale, faculty self-assessed their own beliefs about education at the beginning and again at the end of the workshop, responding to a survey with four questions. The third and fourth questions included followup questions and/or space for comments. The seven-point Likert scale was benchmarked with phrases.  The survey is included as Appendix A.

The *Workshop Group B* followup was designed to determine if the Teaching Beliefs workshop had a continuing impact on faculty teaching or other educational activities from 1-3 years following the completion of the Scholars in Education program. Faculty were asked to reply to five *yes* or *no* global questions delivered through email.  They were also asked for their comments on each question.  Appendix B includes both the questions asked and sample comments received.

## FINDINGS

### Workshop Group A

On the first question, "*How clearly formulated are your ideas for describing your beliefs about education?*" faculty rated themselves on average as 4.0 (partially formulated) at the start of the workshop and 5.8 (very clearly) at the conclusion of the workshop. This two-hour workshop also reflected a substantial increase in the amount of time that faculty at an academic health care center report reflecting on teaching and learning. As a warm-up activity at the start of the teaching portfolio workshop, faculty were asked a number of open-ended questions related to their teaching responsibilities and their motivation for attendance. Responses varied, but there was general agreement that most recognized the need for reflection on their clinical practices (even though some did not recognize the work of Schön in *The Reflective Practitioner*) and the need for their own learning through research, continuing medical education (CME), or reading the literature.  However, there was a distinct absence of consideration of or time taken to reflect on their own educational practices.

### Workshop Group B

A 61% response rate was obtained from the *Scholars in Education* participants. Their responses were positive, ranging from 55%-100% agreement with the stated questions:

1. When faculty were asked if the reflection activities during the workshop helped to clarify or change how they viewed their role in undergraduate or graduate medical education programs, 79% responded *yes*.
2. When faculty were asked if the reflection activities during the workshop helped reinforce how they taught or interacted with students, residents, or program committees, 68% responded *yes*.

3. When faculty were asked if the reflection activities during the workshop motivated them to seek or promote change within their department, section, or education committee, 55% responded *yes*.

4. When faculty were asked if the reflection activities during the workshop helped them to prepare a teaching philosophy for a Teaching Portfolio, 64% responded *yes*.

5. When faculty were asked if we should retain this activity for future cohorts of faculty participating in the Scholars in Education program, 100% responded *yes* – when do *all* faculty agree on any one issue?  Comments from faculty responding to the request for feedback are presented in Table 2.

## CONCLUSIONS

Faculty need to re-conceptualize their role as teachers as they move the delivery of instruction from the traditional lecture-based classroom to facilitated small group discussions or to on-line instructional formats that are competency-based and assessment-driven.  Faculty development activities that are based on the principles and practices of self-directed learning and are reflective in nature can provide faculty with the skills *and* the philosophical framework to teach/train effectively.  Self-reflection is one of the central tenets of self-directed learning.  Faculty should be provided with both the time and the structure to effect a reconsideration of the issues and challenges they face.  During a 120-minute workshop, faculty reported a small but important change in thinking about teaching and learning. Faculty self-reflection on their own teaching beliefs can make more transparent the potential gaps or *blind spots* in their approaches to teaching.  If we provide the time and the structure to encourage students to develop self-reflection skills, then faculty should be provided with a similar opportunity to *walk-the-*(reflective)*walk*.

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Appendix A

*Faculty Group A Pre-Post Survey*

1. How clearly formulated are your ideas for describing your *beliefs* about education?

   1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7
   (not at all)     (partially formulated)     (very clearly)

2. How much have you thought about your *beliefs* about teaching or your role and function as a teacher?

   1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7
   (not at all)                    (a great deal)

3. Some believe that having an articulated *beliefs statement* makes for a better teacher / educator. What is your opinion?

   1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7
   (strongly disagree)     (not sure)     (strongly agree)

   If you agree, what might be some benefits of having a *beliefs statement*? To you? To students? If you are unsure, what doubts do you have? If you disagree, why?

   _____

   _____

4. I would be comfortable expressing my experiences as a teacher and/or learner within a small group in order to explore and develop my own teaching beliefs.

   1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7
   (strongly disagree)     (not sure)     (strongly agree)

   _____

   _____

Appendix B

*Faculty Group B: Selected Faculty Comments to Feedback Questions*

1) Did your reflection during this activity reinforce how you taught or interacted with students / residents / program committees?

- Helped me focus my attention from my preference on teaching styles to what is the best format for my students/residents to learn from.
- The workshop did prompt me to encourage students to engage in self-directed learning more than I had previously. It certainly reinforced previously held convictions about optimal environments for teaching and communication with students.
- I now try to remember to ask what goals they had in mind for whatever rotation they are in.

2) Did your reflection during this activity clarify or change how your viewed your role in undergraduate or graduate education programs?

- I have started to view education now more as a second profession in addition to my clinical profession.
- It let me to realize the importance of my role in removing barriers to learning and providing an array of teaching/learning modalities.
- I knew my role but needed more insight on how to motivate my learners and create a stimulating environment for learning.

3) Did your reflection during this activity motivate you to seek or promote change within your department, section, committee, etc.?

- I developed a greater sense of purpose in my role as an educator not just of students and residents but also to my peers. I felt a greater sense of community through this action and look forward to mentoring peers.
- The primary change involved promoting the idea to lecturers in our course that they should be helping the student learn how to learn – rather than merely acting as an expert on their particular lecture topic.
- I serve on both the graduate and undergraduate education committees in pediatrics and have worked to modify some of the lecture series and small group sessions into more interactive rather than didactic sessions.

4) Did you use any aspects of this reflective activity to help you prepare a teaching philosophy for a Teaching Portfolio / other document?

- In collecting, organizing and arranging my teaching data in ways consistent with my teaching philosophy.
- Discussions introduced concepts that I was not previously familiar with and that I incorporated into my personal teaching statement
- I now have one. That says a lot.

5) Do you feel that we should retain this activity for future cohorts of Scholars?

- I am a self-reflection proponent in all areas of education!!!!
- Absolutely. This exercise provides an opportunity to define their individual and common purposes.
- Yes, I think it is vital for educators/scholars to understand and recognize.

# THE LEARNER AUTONOMY PROFILE: A DISCUSSION OF SCALE COMBINATION TO MEASURE AUTONOMOUS LEARNING

Michael Ponton
Christine Schuette

The Learner Autonomy Profile (LAP) was originally based upon four separate inventories developed to measure the following factors in an adult learner: desire, resourcefulness, initiative, and persistence. Although several studies have used scores for each of these scales and respective subscales in addressing proposed research questions, some recent studies have combined scale scores for subsequent analyses. The purpose of this research brief is to discuss the theoretical and statistical reasoning to support the usage of summative scores. We propose that a relevant measure of autonomous learning—as opposed to learner autonomy—would be to sum normalized measures of resourcefulness, initiative, and persistence. The current version of the LAP also includes a self-efficacy scale; however, limited data precludes inclusion in the presented analyses.

The Learner Autonomy Profile (LAP) was originally created as a combination of four separate inventories developed by Meyer (2001), Carr (1999), Ponton (1999), and Derrick (2001) to measure an adult learner's desire, resourcefulness, initiative, and persistence, respectively. The importance of these four constructs to personally satisfying learning endeavors was proposed by Confessore in 1992. Since its creation, the LAP has been used in numerous research projects (e.g., Derrick, Rovai, Ponton, Confessore, & Carr, 2007; Ponton, Derrick, & Carr, 2005) and dissertations (e.g., Berry, 2006; Flannagan, 2008; Liu, 2007; Palmer, 2003; Park, 2003; Wilson, 2004) that analyze these four scales (i.e., Inventory of Learner Desire, Inventory of Learner Resourcefulness, Inventory of Learner Initiative, and Inventory of Learner Persistence), associated subscales, or relationships with other variables of hypothesized importance. On the contrary, some recent research has developed summative scores of all four scales (Derrick, Ponton, & Carr, 2005) or of select scales (Ponton, Derrick, Confessore, & Rhea, 2005). The purpose of this research brief is to discuss the theoretical and statistical reasoning behind an appropriate usage of summative scores. Note that individually the four inventories have been argued as being both construct and content valid as well as internally and externally reliable (Park & Confessore, 2002); therefore, the purpose of this brief is not to analyze each inventory separately but rather to present an argument regarding a salient scale combination.

Since the LAP's creation, the Appraisal of Learner Autonomy (Ponton, Derrick, Hall, Rhea, & Carr, 2005) has been added to the battery to measure self-efficacy. To date, limited data have been used in research studies (Derrick, Ponton, Carr, Rovai, & Coe, 2007; Ponton, Derrick, Confessore, & Rhea, 2005); however, at this time we believe insufficient data exist to adequately support the analyses conducted for this brief; therefore, a future brief will address the role of self-efficacy in learner autonomy.

## THEORETICAL FRAMEWORK

Ponton (1999) proposed a definition of *learner autonomy* as "the characteristic of the person who independently exhibits agency [i.e., intentional behavior] in learning activities" (pp. 13-14). He argued that learner autonomy represents a subset of the cognitive and affective characteristics of the learner under a larger set associated with self-directedness. In contrast, Ponton suggested *autonomous learning* represents the conative manifestations of latent learner autonomy and is a subset of all manifestations associated with a self-directed learning activity. Note that "conative" is used with autonomous learning because "conation refers to his [*sic*, i.e., the agent's] behavioral intentions" (Fishbein & Ajzen, 1975, p. 12) and subsequent intentional action.

The Inventory of Learner Desire (ILD) was developed by Meyer (2001) to assess an adult's ability to act intentionally (i.e., preconative factor). As Park and Confessore (2002) assert, "[Meyer's] work on desire to learn has been treated as an effort to understand the *precursors* to the development of intentions related to learning" (p. 289). As a cognitive/affective scale, the ILD is argued as measuring a construct within the domain of learner autonomy, which is consistent with Ponton (1999).

The Inventories of Learner Resourcefulness (ILR; Carr, 1999), Initiative (ILI; Ponton, 1999), and Persistence (ILP; Derrick, 2001) measure learner intentions with respect to learning activities. As such, these scales explicitly focus on conation—a domain that Ponton (1999) theorized to be relevant to autonomous learning.

Based upon the theoretical arguments of learner autonomy vis-à-vis autonomous learning, where the former is cognitive/affective, whereas the latter is conative/behavioral; we hypothesize that combining ILR, ILI, and ILP scores to generate an aggregate autonomous learning score is conceptually tenable. The ILD should be used to help assess learner autonomy perhaps in concert with other measures in the cognitive/affective domains (e.g., self-efficacy, motivation). We expect relevant correlation analyses (e.g., intercorrelations, principal component analysis, and Cronbach's alpha) to support this grouping.

## ANALYSIS

The data from a nonprobability sample of 2,277 adults were analyzed. These data represent samples from various research studies using the LAP. The average age of the participants was 33.0 years ($SD = 11.5$) and ranged from 16 to 88 years. The majority were female ($n = 1,486$; $P = 65.3\%$) and the level of education was as follows: high school diploma/G.E.D., $n = 1,008$; bachelor's degree, $n = 534$; graduate/professional degree, $n = 735$.

Table 1 presents the intercorrelations between the four scales. Whereas all correlations are significant at the .01 level (2-tailed), the ILD moderately correlates with the ILR, ILI, and ILP whereas these last three scales correlate highly with each other ("moderate" and "high" as defined by Hinkle, Wiersma, & Jurs, 1998, p. 120). These results suggest a stronger linear relationship between the autonomous learning scales (i.e., ILR, ILI, and ILP) as compared to ILD paired correlations.

*Table 1*. Intercorrelations Between Scales ($N = 2277$)

| Scale | 1 | 2 | 3 | 4 |
|-------|---|------|------|------|
| 1. ILD | - | .617* | .591* | .601* |
| 2. ILR |  | - | .862* | .849* |
| 3. ILI |  |  | - | .881* |
| 4. ILP |  |  |  | - |

*p < .01 (2-tailed)

Table 2 presents the factor loadings using exploratory, unrotated principal component analysis (PCA) performed on the correlation matrix; Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .84; Bartlett's Test of Sphericity approximate $c^2(6, N = 2277) = 8,004.9, p < .001$. Gorsuch (1983) states the first principal component represents the best condensation of a group of variables; thus, because the ILD, ILR, ILI, and ILP are linked to related theoretical constructs (i.e., learner autonomy and autonomous learning), it should be no surprise that the loadings are high and in the first component (Gorsuch asserts a minimum salient loading to be 0.3, p. 210). However, note that the highest loadings are for the ILR, ILI, and ILP scales.

*Table 2*. Exploratory Principal Component Analysis

| Scale | Loading |
|-------|---------|
| ILD | .764 |
| ILR | .936 |
| ILI | .939 |
| ILP | .93 |

*Note*. Only one component extracted, explaining 80.5% of the total variance.

The intercorrelation and PCA results suggest that the theorized grouping of ILR, ILI, and ILP scales may be tenable. Thus, a confirmatory PCA was performed on the correlation matrix for a 2-factor solution using Varimax rotation with Kaiser Normalization (2 factors were chosen to correspond to the constructs of learner autonomy and autonomous learning). As is evident in Table 3, the loadings for the ILR, ILI, and ILP are high for the first component (i.e., autonomous learning) whereas the ILD loading is singularly high for the second component (i.e., learner autonomy).

*Table 3*. Confirmatory 2-Factor Principal Component Analysis

| Scale | Loading | |
| --- | --- | --- |
| | Component 1 | Component 2 |
| ILD | .335 | .942 |
| ILR | .879 | .349 |
| ILI | .913 | .299 |
| ILP | .901 | .316 |

*Note*. Component 1 explaining 63.3% of the total variance; Components 1 and 2 explaining 93.2%.

Table 4 presents the reliability statistics using Cronbach's Alpha coefficient for internal consistency. The findings indicate that only by removing ILD scores will Cronbach's Alpha increase above the value computed using all four scales.

*Table 4*. Reliability Statistics

| Scale | Cronbach's Alpha if Item Deleted |
| --- | --- |
| ILD | .949 |
| ILR | .872 |
| ILI | .870 |
| ILP | .871 |

*Note*. Cronbach's Alpha using all 4 items: .918.

## CONCLUSIONS

The combination of scales is a theoretical argument based upon the constructs of under analysis. In this regard, we proposed that it makes conceptual sense to group the Inventories of Learner Resourcefulness, Initiative, and Persistence together as they are theorized to exist within the conative/behavioral domain of *autonomous learning*; alternatively, the Inventory of Learner Desire exists within the cognitive/affective domain of *learner autonomy*. Confirmatory principal component analysis supports this grouping of scales.

The results presented were based upon correlations and, as such, are independent of linear transformations of variables. However, the number of items associated with the ILR, ILI, and ILP are 53, 44, and 34, respectively. Therefore, if a proposed analysis were to be based on total score, it would be important to normalize each inventory before combining, thereby avoiding an uneven weighting of scales in the summation. As correlations are not affected by this linear transformation, correlation-based analyses between scales could still be performed on the normalized data.

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