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Preface

Continual development of the self-directed learning knowledge base is very rewarding. This issue contributes to that development as eleven authors present an interesting variety of scholarly works. The issue begins with an article in which Robert Bulik presents a case study depicting how self-directed learning can impact an individual in various ways. He describes how he attempted to deal with a crisis as an individual learner. His is a compelling story of personal efforts to deal with Hurricane Ike in the fall of 2008 as it impacted where he lives in Texas. All his self-directed learning skills, efforts, and preparations were tested to the extreme in what he describes as a real sticking point with which he had to deal. Along the way he learned some new things about himself as a learner and provides insight into how SDL strategies are selected.

In the next article, Paul Bouchard urges that a careful analysis must be employed as we work toward greater success in our SDL projects. Based on interviews with 40 professionals, he examines four dimensions of self-directed learning, the algorithmic, conative, semiotic, and economic. His research provides considerable insight into corresponding autonomous learning strategies that can be employed when thinking about these dimensions.

In this issue there also is a compelling argument made for better understanding the commonalities between self-directed learning and action research. Peters, Taylor, and Doi describe both similarities and differences between the two areas of interest, but believe the two fields are more alike than different. They make a convincing argument that scholars in both fields have much to gain by better understanding each other. In the next article, Kranzow and Hyland employ action research as a methodology in describing their success as they helped students increase their self-directed learning abilities. They constructed a graduate course centered on 41 students' participation in a professional conference. Through observations and various forms of feedback they describe the personal growth of course participants as both self-directed learners and professionals.

The Conner, Carter, Dieffenderfer, and Brockett article continues past efforts by University of Tennessee scholars to expand our knowledge of the self-directed learning literature. They report on a citational analysis of thirteen periodicals and nearly 1600 references over a 28-year period. While acknowledging some limitations to citational analysis, they are firm in their belief that some of the field's key scholars and publications contributing to the development of SDL are better understood. They conclude by making an appeal for additional research on the field's literature.

Roger Hiemstra, Co-Editor

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THE *STICKING* POINT

Robert J. Bulik

The construct of self-directed learning has continued to evolve as it receives increasing attention from academic and professional programs, as well as from business and training sectors. The readiness of adults to be self-directed in their learning, along with the stages for development of these strategies, has been the subject of much interest. Attention has also been focused on motivation, barriers, and interrupters to adult learning, but less consideration has been given to the processes that take place during informal learning projects. This article presents a case study on learning. Specifically, the focus is on the point in time when a learner becomes stuck. The question is this: What occurs at that *sticking* point when all previous reliable strategies for learning are no longer useful? The outcome of this case study argues for consideration of a more dimensional conception of self-directed learning.

No doubt about it, I was stuck! That emerging awareness worried me. For as long as I could remember, I had always had one more option – one more place to look for a resource or one more someone else to ask for assistance when I encountered a new learning opportunity. But on September 12, 2008, Hurricane Ike blew away all of those options and I was stuck.

Learning opportunities present themselves throughout our lifetime. Usually when they occur, we construct or build our own understanding and new knowledge based on reflection on previous experiences. When a learning opportunity presents a unique challenge that may be outside of our personal experience inventory, we might yet master the event by relying on our skills as a self-directed learner. The definition of self-directed learning (SDL) provided by Knowles (1975) established an initial dialogue of this approach to adult learning "in which 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).

From a constructivist theory of learning, humans generate knowledge and meaning from their experiences. However, some learners will encounter a sticking point when they attempt to assimilate new knowledge, augment an existing understanding or endeavor to learn a new and discreet skill. Perhaps not dissimilar to learners in formal education, workplace training, or other informal learning situations who become stuck, we should ask this question: Why are we unable to either complete the learning task or switch to a more productive strategy?

The impact of Hurricane Ike on the south Texas coast provided innumerable learning opportunities for individuals affected by the storm. In the absence of previous experience or prior learning opportunities on topics initiated by the storm, SDL became the norm. However, when the often used definition by Knowles of self-directed learning was tested in

the actual environment following the hurricane, the definition proved to be only partially adequate.

This article presents a case study on learning. Specifically, the focus is on the point in time when a self-directed, constructivist oriented learner becomes stuck in the middle of a learning task. The question that will guide the discussion is this: What occurs at that sticking point when all previous reliable strategies for learning are no longer useful?

BACKGROUND

The construct of SDL has continued to evolve as it receives increasing attention from academic and professional programs, as well as from business and training sectors. The readiness of adults to be self-directed in their learning, along with the stages for development of these strategies, has been the subject of much interest. Attention has also been focused on motivation, barriers, and interrupters to adult learning, but less consideration has been given to the processes that take place during informal learning projects or formal learning courses.

Self-Directed Learning Practice

Readiness for self-directed learning has been studied using instruments developed by Guglielmino (1977) – the Self-Directed Learning Readiness Scale (SDLRS), by Oddi (1986) – the Oddi Continuing Learning Inventory (OCLI), and by Pilling-Cormick (1998) – the Self-Directed Learning Perception Scale (SDLPS). Grow (1991) gave us the Staged Self-Directed Learning Model (SSDLM) which provided stages for development of self-directed learning.

A number of authors have identified a variety of ways of thinking about SDL in terms of motivation (Harding, Vanasupa, Savage, & Stolk, 2007) and situational factors that might impact the accomplishment of informal learning projects (Guglielmino, Asper, Findley, Lunceford, McVey, Payne, Penney, & Phares, 2005; Lave, 1993;). Garrison (1997) argued that motivation drives the decision to participate and volition refers to the ability to sustain the will to see a task through to completion. Hiemstra (1991) describes the setting as: "…all the physical surroundings, psychological or emotional conditions, and social or cultural influences affecting the growth and development of an adult engaged in an educational enterprise" (p. 8). Mavrogenes, Hanson, and Winkley (1976) identified four broad areas that included physical, mental, emotional, and environmental factors. These authors also characterized a number of conceptual blocks that can keep us from solving our learning problems: (a) *Focus* – when the initial learning strategy is ineffective, being fixated on it interferes with our problem-solving; (b) *Acuity* – although our minds can process a lot of information, learning sometimes requires relaxing our assumptions in order to notice subtle differences and similarities that might help us find solutions; (c) *Gestalt* – artificially limiting the information we use in defining the problem and searching for solutions by considering the big picture and not minute details; and (d) *Resilience* – sometimes we give

up too easily when we encounter problems for which we don't immediately see solutions and fail to consider other learning approaches.

The research by Hoban and Sersland (2000) confirms that self-efficacy, the confidence one has in the ability to complete a specific task, has a significant relationship to SDL. Various authors have also identified barriers to learning such as dispositional, institutional, or situational hurdles (Cross, 1979; Darkenwald & Merriam, 1982), difficulties associated with age, educational background, and socio-economic group affiliations, or personal obstacles to learning such as attitude, cost of tuition, motivation, time, and transportation (Norman & Hyland, 2003).

However, there is very little in the literature about learners who begin a formal or informal learning task and find that they must change or modify their learning strategies. In both informal workplace training and formal degree programs, there are fully motivated, persistent, self-directed learners who encounter difficulties in adjusting their personal learning strategies. For example, I have observed from 15 years in medical education that students admitted to medical school are an intelligent and motivated group of learners. Scores on the SDLRS reported in the literature on this population indicate that, as a group, they are highly self-directed in their learning (Bulik & Romero, 2001; Pilling-Cormick & Bulik, 1999, 2000). However, at some point during the first year of medical school, 27-29% of students in a class of 235 at one southern medical school experienced significant learning problems and were referred (or self-referred themselves) to the Office of Student Affairs (S. Samie, personal communication, March, 2009). These students encountered difficulties utilizing learning strategies that served them well through traditional, lecture-based courses in some undergraduate degree programs, but struggled when immersed in a problem-based learning environment. They were reluctant to change personal approaches to learning that had allowed them to be successful in the past.

More broadly, an Association of American Medical Colleges report indicated that between 80.6 percent and 82.2 percent of those in the study groups (1987: N = 15,469; 1992: N = 16,013; 1995: N = 15,833) graduated in four years. By the fifth year, the overall graduation rate for the three cohorts climbed to 91.3 percent (Garrison, Mikesell, & Matthew, 2007). Said slightly differently, somewhere in the range of 10-20% of the brightest students in the country admitted to medical school experienced a sticking point that extended their medical school education to a fifth year and beyond. This was at considerable expense to the affected students and to society.

Recently, Straka (2009) added to the discussion by arguing for inclusion of four dimensions that might better characterize SDL and a focus on learning task processes: behavior, information, motivation, and emotion. He suggested the following: "All four dimensions presuppose and necessitate each other." Learning, according to Straka, "has taken place when and only when the individual relative consequences of the interaction between behavior, information, motivation, and emotion lead to a permanent change in the internal conditions of the acting individual" (p. 110). This reorientation by Straka appears to link back to Brookfield (1985, 1986) who challenged the notion of SDL in difficult emotional

situations. Brookfield (1987) argued that SDL involves an internal change in consciousness resulting from critical reflection which varies dramatically among individuals. He further emphasized the importance of critical thinking in making judgments, choices, and decisions. Brookfield went on to list five phases and four components of critical thinking. The five phases were these: (a) trigger event, (b) appraisal, (c) exploration, (d) alternative perspectives, and (e) integration. The four components consisted of the following: (a) identifying and challenging assumptions, (b) understanding the importance of context, (c) imaging and exploring alternatives, and (d) reflective skepticism.

While Knowles focuses on the *what* of learning – what learning needs, what goals, what resources, what learning strategies, and what outcomes, Straka argues for a more dimensional definition that includes the process or the *how* of learning. This more dimensional definition of SDL might well take into account the challenges that highly self-directed learners encounter within context-specific learning settings.

The case study presented in this article focuses on Brookfield's appraisal phase, the time period following the trigger event during which self-examination occurs as the impact is examined, and, the third component, critical thinking to imagine and explore alternatives in search for new ideas or alternative actions. Throughout this case study, the focal points will be these: the emotional situation brought on by Hurricane Ike, the appraisal phase which followed the trigger event (not Hurricane Ike, itself, but the emerging awareness that I was stuck), and the resistance to exploration of alternative learning strategies. It informs an examination of a more complex definition of SDL that incorporates both the what (Knowles) and the how (Straka) of learning.

Case Study

The use of case studies to build and test theories has increased in recent years. Fry, Ketteridge, and Marshall (1999) describe case studies as complex examples which give an insight into the context of a problem as well as illustrating the main point. The case study is a form of qualitative descriptive research that looks at an individual or small participant pool, drawing conclusions only about that participant or group and only in that specific context. Case studies do not focus on the discovery of a universal truth that can be generalized, nor do they typically look for cause-effect relationships; instead, emphasis is placed on exploration and description.

Several subdivisions exist under the more generalized category of case study and these include the following: (a) illustrative, (b) exploratory (or pilot), (c) cumulative, and (d) critical instance (Creswell, 2007). This accounting of the events surrounding Hurricane Ike will use an illustrative approach. This category typically utilizes one or two instances of an event to show what a situation is like. Illustrative case studies serve primarily to make the unfamiliar familiar and to give readers a common language about the topic in question.

Hurricane Ike

This hurricane was the largest in overall size ever observed in the Atlantic basin and the third most destructive storm to ever make landfall in the United States. Although Hurricane Ike made its final landfall over Galveston, TX, as a strong Category 2 storm, hurricane-force winds extended out 120 miles from the center. It was the massive size of the wind field that caused the Gulf waters to be pushed up against the coast, creating a Category 5 equivalent storm surge (Vipulanandan & Liu, 2009). Reflections presented here occurred within 12 months of Hurricane Ike impacting the Texas Gulf coast and Galveston Island.

Pre-Land Fall

Planning for natural disasters is part of that background noise we hear on the TV and radio. Fire season in Southern California occurs in late fall into winter as the strong and extremely dry Santa Ana winds sweep down from the high dessert. Tornados impact the Midwest in spring and early summer, especially Tornado Alley, a nickname for the central U. S. swath where twisters are most common. Hurricanes have the potential to hit most anywhere along the Gulf and Atlantic Coast. The hurricane season for the U.S. mainland lasts from June 1st through November 30th, a full six months with the peak time for storm formation from August to October. The National Oceanic Atmospheric Administration issued warnings for Hurricane Ike when winds exceeded 74 miles per hour, and on September 10th warned that conditions along the coast would continue to deteriorate with a dangerous storm surge that could extend well away from the center of circulation.

My wife and I had lived in Texas for 12 years and had experienced several strong tropical storms. Our home is midway between Houston to the north and Galveston to the south; an area that the Federal Emergency Management Agency maps indicate would not be impacted by water from even a Category 5 storm surge. While most everyone in the direct path of the hurricane will (and did) lose commercial electrical power, it is the surging water that has the most destructive power as Hurricane Katrina demonstrated in New Orleans.

On September 11, 2008, forecasting models began to show Hurricane Ike making landfall as a strong Category 2 storm just south of Galveston. Also on September 11, at 8:19 p.m. (CDT), the National Weather Service in Houston/Galveston, TX, issued a strongly worded bulletin regarding storm surge along the shoreline of Galveston Bay. The bulletin advised that residents living in single-family homes in some parts of coastal Texas may face *certain death* if they did not heed orders to evacuate (National Weather Service, 2008).

We had planned to hunker down and shelter in place, some terms tossed around by the media, meaning we wanted to avoid the gridlock on the highways as millions of people were headed north away from the coast. I had stocked up on non-perishable food supplies, batteries, and other essentials. I also purchased a mid-size generator to run the refrigerator, TV, microwave, and most importantly, a portable in-room air conditioner. The day before Hurricane Ike was forecasted to make landfall, I ran extension cords to the various appliances, started up the generator, and tested my plan. We were ready! We sat around watching the TV news reports of the pending storm until the winds increased significantly and the electrical power went out about 10:20 p.m. I started up the generator and we

continued watching the weather reports until about midnight; then I shut down the generator and the eye of the storm began its move inland from the coast.

Land Fall

As it became light the next morning, both the wind and rain eased and we were able to survey the damage. There was no storm surge water in the yard, but a number of trees were blown over with branches and shredded leaves littering almost every square inch of the lawn. Fortunately, we had no broken windows and the roof appeared intact.

I had the generator on a protected patio area. I topped off the gas tank, checked the on switch, set the choke, and pulled the cord – nothing! Ok, I checked the on switch again, set the choke again, and pulled the cord a second time – again nothing but the whirring sound of the rotor but no ignition. Three things immediately came to mind as the south Texas humidity began to build: (a) The electrical power could be out between two and five weeks. CenterPoint Energy Company (2008) reported at 11:15 a.m. the morning following the storm's arrival that 2.1 million of its 2.26 million customers in my service area were without power, causing the worst blackout of electric transmission in the history of Texas; (b) all of my surviving-the-storm plans revolved around this *thing* generating electrical power for the refrigerator, portable air conditioning, and other small appliances; and (c) I knew very well that I was no mechanic. It occurred to me that I had an unplanned, non-formal, learning opportunity.

Post-Land Fall

The rest of the morning I spent re-reading the owner's manual, checking the gas tank, checking the on switch, setting the choke, and pulling the cord – each time, nothing! I had no power to do an Internet search and the mobile telephone towers were out of commission so I couldn't call and ask for help. Well, I was a self-directed learner as evidenced by my high score on the Self-Directed Learning Readiness Scale (SDLRS) about twelve years earlier, and by the number of learning projects that I had completed in the previous year like obtaining my scuba certification and learning to set up an apiary. Besides, generators are not fragile pieces of equipment. Generators are used all the time on construction sites and they are thrown in the back of pickup trucks. So, once again, I checked the gas tank, checked the on switch, set the choke, and pulled the cord – nothing!

As Texas Gulf Coast heat and humidity began to build throughout the day, I started to believe that the problem with the generator was me: (a) I must have flooded the engine (although I had cleaned the spark plug numerous times by now); (b) I must not have gone through the exact right sequence of checking the gas tank, checking the on switch, setting the choke, and pulling the cord; or, (c) the gas in the tank must be bad (even though the generator started twice the day before). I went back to the owner's manual one more time! Maybe if I let the generator sit until morning, all the mystical gremlins inhabiting the generator would leave.

The Rest of the Story

The next morning I checked the gas tank, checked the on switch, set the choke, and pulled the cord. Again, nothing! I climbed into my car and began driving, even though the announcer on the radio warned all motorists to stay off the roads. It was eerie. The streets around my home and all up and down the highway were deserted. Most of my neighbors had evacuated, but the hum of (working) generators could be heard here and there. While I had my choice of hardware or home improvement stores within a 10 minute drive of my house, nothing was open. Because of flooding and tree damage, there was only one highway (Interstate 10) that was passable, but most onramps to the Interstate were closed. So I drove 218 miles to Austin, TX, on County roads and bought another generator.

When I returned to a very dark neighborhood and unloaded the second new generator, I filled the gas tank, checked the on switch, set the choke, and pulled the cord. That second generator started up, the refrigerator hummed, the set of lights in the living came on, and I caught up on the news about the storm on the TV. With this second generator, my surviving the hurricane plan worked and we managed quite well through some very warm, humid days and dark, still nights. Electrical power was restored to our area of the county in about six days following the hurricane, but it took a full 18 days for all service to be restored to each affected customer.

REFLECTION

Hurricane Ike was blamed for at least 112 deaths in the United States; initially, 300 people were reported missing in Texas. On January 2, 2010, almost 16 months after the hurricane, news reports confirmed that yet another body was identified and that three people were still not accounted for (Apodoca, 2010). Hurricane Ike resulted in the largest evacuation in the history of Texas and also the largest search and rescue operation (by area) in U.S. history (Vipulanandan & Liu, 2009).

Immediately following the arrival of Hurricane Ike, I had a learning opportunity presented to me. My approach to tackling an informal learning task using strategies that had worked well in the past did not serve me well in this situation. Reflecting on this experience resulted in the realization that the most often used definition of self-directed learning proposed by Knowles was perhaps not totally adequate. Detailing this case study provided me with the opportunity to reflect on why I was stuck in a learning strategy for 36 hours that was ineffectual (the sticking point), before it occurred to me that not only was this plan not working but that I had little chance of success if I continued to persist in this approach.

Thinking back on that experience, there appear to be two issues contributing to my persistence in a learning strategy that was ineffectual. First, I was aware that I had inadequate resources to accomplish this informal learning task. Meeting all the other components in the Knowles definition, I should have rather immediately sought out other human or material resources, rather than artificially limiting myself to one resource, the owner's manual. Second, I initially became irritated with that inanimate piece of

machinery, and then with myself. That sense of irritation was more personal than a simple feeling of frustration.

Norman and Hyland (2003) note that confidence has been distinguished both as a trait and as a notion to a specific learning circumstance. They argue that if an individual lacks confidence as a trait, there is little educators can do to enhance the learner's confidence. However, if the lack of confidence is circumstance specific, confidence can be increased with several positive outcomes, including an acceptance of a new situation. The inability to quickly resolve the generator problem and the consequences of no electricity for an extended period of time, lead to my internalizing that anger and simply feeling dumb. This psychological mind set interfered with more objective thoughts such as identifying additional resources – like thinking about how I might obtain another generator. In a similar way, those medical students mentioned earlier who became emotionally frustrated with their inability to adapt to a curriculum delivered in a small-group, problem-based learning context, might well lack the circumstance-specific confidence to alter or adapt previously successful learning strategies.

I had demonstrated the motivation to begin a learning task (Harding, et al., 2007) and the volition to remain engaged (Garrison, 1997). Straka (2009), however, suggests that the emotional facet of his more dimensional description of self-directed learning (my irritation with the first generator), actually precluded me from achieving my overall goal for a full 36 hours. Straka noted it this way: "Accordingly, learning has taken place when and only when the individual-relative consequences of the interaction between behavior, information, motivation, and emotion lead to a permanent change in the internal conditions of the acting individual" (pp. 109-110).

CONCLUSION

How or if we move forward in a learning activity in which we have become stuck is dependent upon a number of variables. Two related questions were posed at the beginning of this article: (a) What occurs at that sticking point when all previous reliable strategies for learning are no longer useful? (b) Why are we unable to either complete the learning task or switch to a more productive strategy? As the learning task unfolded in this case study, the components of Knowles's definition of SDL were met and the *what* of learning were identified: what learning needs, what goals, what resources, what learning strategies, and what outcomes. However, these component parts appeared to be insufficient to detail the processes once a self-directed learning task has been initiated.

A more dimensional definition of SDL may be needed. Addressing the four conceptual blocks identified by Mavrogenes, et al. (1976) listed earlier that included physical, mental, emotional, and environmental factors, would be useful. Similarly, Straka's (2009) four components of self-directed learning that included behavior, information, motivation, and emotion, might be helpful. Using or combining aspects of Straka, Mavrogenes, Hanson and

Winkley, and even Knowles' conceptualizations of learning could enhance our understanding of the processes of SDL as a complex activity.

Based on reflections in developing this case study, I believe that there may well be two distinct constructs that should be addressed in a more dimensional definition of SDL – those attributes that allow a learner to approach a learning task in an autonomous manner (the *what* of the Knowles definition), which may well be different from characteristic that are within-task (the *how* of the Straka conceptualizations). The personal example I used in this case study showed the impact of stress on my learning strategies. While stress is often associated with a need to learn and a motivator for change, other studies suggest that stress is one of the major causes of information loss during training and learning that will negatively impact performance and learning results (Joe, Pu, Wiegert, Oitz, & Krugers, 2006).

Ponton and Carr (1996) began to address the within-task characteristics of stress on a learning task with their discussion of the term *resourceful*. They identified four resourceful behaviors that were highly interrelated with personal initiative: (a) anticipating future rewards; (b) prioritizing learning over other activities; (c) delaying immediate gratification; and (d) solving the problems associated with a learning activity. This fourth behavior, problem solving, was further developed to include the necessity of evaluating alternatives and anticipating consequences (Ponton, Carr, & Confessore, 2000).

Yet what is missing in all these discussions is the actual process for changing, altering, or abandoning initially selected learning strategies. My *sticking point* was that within-task point when I could not initially see other alternatives. The impact of stress on certain students in the first year of medical school is a second example of a need to identify within-task characteristics that impact learning.

The purpose of the Hurricane Ike story was to focus on the point in time when an individual might become stuck while in the process of a learning activity. The outcome of this case study argues for consideration of a more dimensional conceptualization of self-directed learning. It also points to the need for expanded use of case studies in the SDL literature. In addition, it suggests we need an in-depth look at how learning strategies are selected, how they are changed or altered, and how they may need to be abandoned for more potentially useful strategies.

Postscript

The home improvement store where I purchased that first generator reopened three weeks after the hurricane. I brought the unit to the service desk and saw that one other identical generator had already been returned. As I waited for the store clerk, the Assistant Fire Chief for the township walked up to the counter to also return his nonfunctioning unit. I was suddenly not feeling quite so dumb. The clerk informed us that these particular units had a defective gas tank cap and seal; the units would run for a short time and then they would fail. A "sorry about that" was the next statement!

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PEDAGOGY WITHOUT A TEACHER: WHAT ARE THE LIMITS?

Paul Bouchard

Today's workplace is characterized by a growing expectation that employees will learn on their own what they need to learn in order to meet productivity goals. However, self-directed learning is not a simple "either-or" equation. Careful analysis must be applied to the various dimensions of self-directed learning in order to determine whether our choices will promote or hinder the emergence of effective learning behavior. This article identifies four such dimensions and offers a brief outline of each. They are the algorithmic, the conative, the semiotic, and the economic dimensions of self-directed learning. Each of these discrete dimensions and their sub-factors offer considerable potential for developing self-directed learning behaviors and environments. They also point to the fact that by ignoring these important dimensions, we run the risk of significantly reducing the probability that self-directed learning projects will occur or be successful.

This article is a theoretical discussion of what constitutes learner-control, as a contribution to the ongoing discussion on how to better define learner self-direction (Candy, 1991). It is about one central aspect of self-directed learning (SDL) which is referred to as autonomous learning strategies. Within the ongoing theoretical discussions on the importance and possibilities of SDL, there needs to be a space where the nature of such learning is scrutinized. Indeed, we can safely say that the central concept of SDL would benefit from some inquiry into the various dimensions that theoretically define it.

A few years ago, Long (1992) gave us two fundamental ways in which learning could be learner-controlled. He coined the terms psychological and pedagogical to describe the two dimensions of learner-control along which self-directedness could vary in its expression. In this model, learners could be psychologically driven to learn, which makes them pre-disposed to self-directed learning. The other dimension refers to the planning and carrying out of the learning activities themselves. The pedagogical dimension of learner-control is concerned with what it is that self-directed learners do.

Here are a few observations based on this model. Learners with a high-level of psychological control, for instance, can be highly motivated to learn without necessarily being given the opportunity to chose in what ways they learn. They could also voluntarily devolve the planning of any learning activities to another person. For example, this would be the case of learners who register for a formal course in a university, where doing so for personal reasons has little to do with institutional imperatives such as credits or program degrees. In both cases, the learner conserves a high level of psychological control over the act of learning.

On the other hand, the pedagogical dimension is the sum of all activities that are normally the responsibility of an instructor in teacher-directed learning, such as formulating goals,

planning activities, selecting resources, and setting deadlines. Of course, a self-directed learner must do all of these things, hence the pedagogical control that self-direction allows. In the example above of registering for a formal course, the learner displayed a high degree of psychological control and a low level of pedagogical control (albeit voluntarily). An alternative example would be learners who hold no responsibility for why and what to learn, but nevertheless are left to their own devices regarding how to learn it. Such situations occur with increasing frequency in the workplace, as some recent research revealed (Bouchard & Hrimech, 2007).

The terminology employed by Long is problematic, however. To talk about something being psychological is misleading since the term itself can designate any process that originates from or affects the human mind. Therefore, almost everything can be said to be psychological or to have psychological implications. If we are referring specifically to the inner dynamics that will ultimately entice someone to initiate a learning process, we are really talking about the *conative* dimension of learning, which includes all the possible reasons a person can have for learning, such as their drive, impulses, initiative, and drive. Ponton, Derrick, Hall, Rhea, and Carr are among other researches examining aspects of conation: "The term 'conative' is used with aspects of autonomous learning because conation refers to … [the agent's] behavioral intentions and ensuing intentional activity" (2005, p. 50).

Similarly, it is awkward to talk about pedagogical issues in the context of SDL, since pedagogy is a term that is primarily used to designate what it is that teachers do. In an environment without a teacher, the term resonates falsely. In an interesting article some years back, Danis and Tremblay (1986) interviewed self-directed learners and discovered, contrary to expectation, that they did not engage much in the so-called teaching tasks. This finding was appropriately named by the authors an "analgorithmia of syntaxes," (p. 432) because the self-teaching processes (or syntaxes) did not correspond to the form or sequence (the algorithms) advocated in teacher development programs. Therefore, Long's model can be improved by referring to the second dimension of learner-control as the *algorithmic* dimension.

AUTONOMOUS LEARNING STRATEGIES

One of the earliest definitions of self-direction in learning included the central notion of teaching tasks (Tough, 1965). Indeed, if self-direction is associated with learning without a teacher, then obviously the tasks normally assigned to the instructor in a formal setting will naturally be passed on to the learner in a SDL setting (Garrison, 2000). One useful way to think about these new learner-incumbent tasks is to call them autonomous learning strategies, since they are quite distinct from non-autonomous learning strategies such as memorizing for an exam or writing a paper that an instructor is likely to grade favorably. In a series of recent interviews, a number of areas within the conative and algorithmic dimensions were identified as central to the application of autonomous learning strategies (Hrimech & Bouchard, in press).

In this research interviews with 40 employees whose job description fit our criteria for knowledge workers were conducted. These employees typically worked in changing environments that required a high capacity for autonomous learning. Examples are such professions as aeronautics engineer, clinical nurse specialist, investment banker, stock market and derivatives trader, and technical retail specialist. Results of the data analysis (Bouchard & Hrimech, 2007) were organized in a series of dimensions of autonomous learning strategies. Tables 1 and 2 report some of the implications raised by the notions of, respectively, algorithmic and conative learning strategy dimensions.

Table 1. *Algorithmic Dimensions of Autonomous Learning Strategies*

Dimension	*Some Implications*
Sequencing	It is a well-known fact among instructional designers that each individual uses learning materials in a specific way. Some start reading a book from the middle, others explore a computer menu by jumping haphazardly from one item to the next.
Pacing	Learning goals can be pursued at a frantic pace, or can be allowed a more flexible timetable. In formal learning situations, this dimension is often determinant for the success or failure of individual students, as some struggle to keep up.
Formulating Objectives	Life transitions and professional development goals must be translated into manageable learning goals. This is a typical responsibility of teachers, which autonomous learners must assume for themselves.
Finding Resources	A self-directed learner does not have a ready-made course-pack. He or she must identify persons, texts, and artifacts that will enable the learning process. This is one notable problem identified in the research as learners typically experience deficiencies in this area.
Following Up	Periodical check-ups must be planned throughout the learning process in order to determine whether it is proceeding in an acceptable fashion. Some adjustments must be made when necessary. This ongoing process is usually referred to as formative evaluation by instructional designers.
Evaluating	At the end of each cycle, learning must be validated in terms of its actual usefulness as well as its acceptability to third-party assessment.

Table 2. *Conative Dimensions of Autonomous Learning Strategies*

Dimension	*Some Implications*
Initiative	The learner must counteract natural inertia and focus on the goals to be reached. This is the driving force that actually sets in motion the learning process.
Motive	Each person's learning goals originate from actual life goals that have little or nothing to do with learning. It is only after analyzing these life motives that the learner can translate them, when possible, into learning goals. Motives precede goals but must remain explicit throughout the learning process, because they are the reasons behind it.
Motivation	During the learning process, precautions must be taken to circumvent weariness and discouragement. Anyone who has known a good teacher appreciates the importance of this particular teaching task. In a SDL context, learners have reported using self-dialogue, and have found it useful to separate learning objectives into smaller more immediate goals.
Context and Transitions	The majority of learning projects in adulthood are prompted by a life transition such as a job transfer, a promotion, or another important change in life. These contextual transitions represent a stimulus for the learning project, inasmuch as they are considered manageable and have positive challenges.
Social Environment	Effective learners manage a useful social network of persons who act as learning resources or affective support.
Past Experiences	The learner's baggage of past learning experiences, both in formal and non-formal situations, represents a rich source of materials and strategies that can contribute to the current learning project.

ENVIRONMENTAL DIMENSIONS

When Long published his 2-dimensional model of learner control, computer-mediated and online learning were barely in their infancy, at least if compared with what is found in today's e-learning marketplace (Bouchard & Kalman, 1998). With the proliferation of e-learning platforms, and the explosion of competing offerings in the marketplace, there are two other areas where learners can exercise control, or at least make reasoned choices, that were not available to them only a few years ago. One area is the obvious difference found between modes of delivery in multi-media environments (Crooks, Klein, & Dwyer, 1996).

In the past, almost all learning materials were available in one form only, namely in print. Today, we are offered hypertext, audio, video-disc, 2nd-life environments, 3-d imaging, and other multi-media possibilities, not even mentioning what is available in traditional classrooms, lectures, and seminars (Hrimech & Bouchard, 1998). Each of these media (or hyper-media) possesses its own intrinsic characteristics that facilitate or hinder learning, depending on each individual's preferred learning style. For example, a video demonstration does not support two-way interaction, and a chat-room does not support personal introspection (Moore & Kearsley, 1996).

Another area where learners are offered new and varied choices is in the multitude of learning opportunities that are now available in the marketplace. Learning is available for credit or non-credit, online or face-to-face, informally in chat groups, in any language, from any country, and from innumerable sources. Now, the learner is faced with choices that must be evaluated on the basis of their intrinsic worth. Several interesting questions arise such as the following: (a) Is informal learning less valuable than what is officially recognized for credit learning? (b) If so, is this counterbalanced by the fact that it is also less expensive? (c) Which of the two variables has most intrinsic value, the knowledge itself, or its official sanction by an institution?

The two emerging dimensions of learner-control – the semiotic and the economic – give rise to some very specific questions regarding decisions that learners can make pertaining to their own learning. They are the two new dimensions of learner-control.

Just a few years ago, learner control was conceptually limited to two sets of features, conative and algorithmic. After deciding whether, what, and how to learn, one had covered all areas where it was conceivably possible to exercise some degree of learner autonomy. Now with the proliferation of learning environments that include mediated instruction materials, exponentially more available learning resources, new means of communication, and a marketplace literally exploding with learning opportunities, two other components of learning emerge as possible areas where learner control may be exercised, namely the *semiotics* employed by the new media, and the *economics* of learning.

Until recently, the prevalent medium for encoding, storing, and disseminating knowledge was access to print materials through libraries, mail-order programs, or custom-printed resources. Today, learning materials include very diverse media which may share few features with printed text. For example, asynchronous messaging, electronic whiteboards, and hyper text each possess their own set of codes, behaviors, and symbols that are inconsistent with the linear quality of print. Furthermore, the manner in which each new medium is utilized by instructors and learners varies to some extent, leading to further diversification in the perception of their semiotic possibilities (Garrison, 2000). To illustrate, hypertext can be used as a way to link course materials to outside resources, as an inherent part of the material to be learned, or as non-compulsory enrichment to the basic text such as illustrations or diagrams to be viewed when needed. Hypertext also can be perceived as a convenient way to store and retrieve information, or then again as a bothersome irritant leading to feelings of frustration in the presence of overwhelming

amounts of poorly organized data. Because each environment offers its own set of communication pragmatics and its own approach to using them, the semiotic components of a learning environment then are an integral part of a learner's experience, and, as such, offer opportunities to either enhance or deter learner autonomy.

Learning is no longer the reserved province of traditional institutions such as schools or colleges. Indeed, it is now acknowledged that universities find themselves in direct competition not only with each other, but with a multitude of offerings from a thriving marketplace (Moore & Kearsley, 1996). An important component of a learning environment is the perceived economic value of its knowledge in the marketplace, either as an asset for finding employment or as a means of production in the knowledge economy. Based on these considerations, learners must not only decide why and what to learn, but also where to learn it. This decision will be based on several factors, including individual preference for a proposed learning environment. But most importantly, the choice rests on the perceived cost-benefit ratio and opportunity costs which are generated by each alternative. In this context, the economics of learning are emerging as an important component of any learning environment. Tables 3 and 4 suggest some of the implications raised by the notions of, respectively, the semiotic and economic dimensions of autonomous learning strategies.

DISCUSSION

Self-directed learning has been the object of considerable prescriptive literature that assumes that SDL is naturally a good thing and that it should be supported in all areas of learning, particularly in the workplace. If we believe that learners are well prepared to assume the tasks of SDL, then we need not explain further the obvious benefits of that approach. What our model proposes however, is to consider as well the not-so-good potential of various dimensions where learner autonomy can surely be developed and expressed, but also considerably thwarted and suppressed. The *algorithmic* dimension points to the importance of being able to assume complex teaching tasks such as formulating goals and finding appropriate resources. In a world where autonomous learning is more or less expected of learners and employees, these tasks can quickly become overwhelming for the unprepared. The *conative* dimension reminds us that it is the learner, ultimately, who is at the origin of the act of learning. Failure to recognize this, for example by expecting from employees that they know without providing appropriate support for acquiring the knowledge, can lead to considerable anxiety and frustration. The *semiotic* dimension requires careful consideration not only to the information available, but also the form in which it is made available. A recent study shows that individuals vary considerably in their ability to search for and retrieve information, and that appropriate search strategies are often overlooked (British Library, 2008). The *economic* dimension highlights a whole set of factors that need to be applied when deciding what, where and how to learn. These decisions cannot be based on naïve perceptions of the old need-to-know approach that is still prevalent in today's workplace.

Table 3. *Semiotic Dimensions of Autonomous Learning Strategies*

Dimension	*Some Implications*
Use of Printed Text	One of the particular features of text presented in standard book form such as found in libraries, is the edited nature of the format. Books are typically selected by publishers based on several criteria, among which are perceived interest and quality. The cost of producing a physical print copy naturally imposes restrictions on the quantity of available sources, unlike the cost-free publishing made possible online. Another advantage of a print library is the Dewey Decimal or Library of Congress Classification systems which organizes texts by their topical relatedness to other texts, thereby making it possible for serendipitous findings to occur.
Use of Non-Print Text	Electronic text offers no guarantee of peer-review or expert pre-selection, and does not allow for the conceptual serendipity encountered in library searches. Searches are made through innumerous databases, each containing many pages, which are really screens of text and not pages. Searches are typically conducted using complex Boolean algorithms and the sources' credibility is often difficult to assess. Electronic text is read, often strenuously, through a backlit screen and cannot be annotated before printing.
Use of Hypertext	In standard academic writing, footnotes are kept to a minimum in order to preserve the integrity of the text. Hypertext does exactly the opposite, adding a whole library of potential footnotes at every other word. This can be useful to some researchers, but it can also be considered a very poorly organized mish-mash of unfiltered information.
Data Collection	Information can be found through a multitude of sources, including blogs and wikis, books, electronic databases, Internet searches, journals, people, and synchronous or asynchronous communication. Since there are numerous information channels, learners must acquire the ability to critique, evaluate, and navigate among them in a reasonably effective manner.
Social Networks	Autonomous learners are always somewhat dependent on their social network to collect the information they need. Today, this notion has expanded with the use of information and communication technologies. For example, one of the fastest-growing learning tools on the web is the specialized peer-user forum. By applying heuristics reminiscent of participatory research, users access and provide just-in-time knowledge to other users. The notion of a common curriculum is being replaced by a dedicated knowledge base shared by hundreds, even thousands, of peers. This is also known as the Web 2.0.

Table 4. *Economic Dimension of Autonomous Learning Strategies*

Dimension	*Some Implications*
Actual Value of Knowledge	Human capital has been defined as any human characteristic that is considered to have value (Becker, 1975). This value can be counted in dollars, or any other currency such as happiness, health, and well-being. Since self-directed learning mostly occurs for a reason, then that reason must be considered to have some intrinsic value. Corresponding questions are how much and what kind?
Perceived Value of Knowledge	The symbolic value of learning must also be considered. It is often the case that academic credentials have more credibility than the same knowledge acquired by other means. This may lead to difficulties with assessing prior learning and impact on the perceptions by self and others of any self-directed learning.
Cost of Learning	In some instances, similar learning experiences can come at quite dissimilar costs. There are many reasons for this, including uneven competition among institutions, the different values of credit and non-credit learning, the availability of technology, the proximity of resources, and the cost of accreditation.
Cost-Benefit Ratio of Learning	All costs of learning are offset by the benefits expected in return. This important principle explains why some learners accept paying a premium to a well reputed, but perhaps ill-prepared institution, rather than running the risk that their learning (from a less glorified college or from SDL) will be bartered at a lesser price on the job market.
Opportunity Costs	An important hidden cost of acquiring an education is derived by calculating what one does not do or earn while going to school. In fact, the income that one forfeits by attending a full-time college is considerably higher than the actual tuition paid to the institution. Furthermore, the time spent on learning one thing represents the cost of not spending time learning something else, which could potentially yield a superior value.

Overall, the notion that SDL is a worthwhile approach to learning and that it should be supported, among other things, through organizational culture, has not led to sufficient scrutiny of what specifically needs to be supported. This in turn has been one of the reasons why self-directed learning has not become the panacea that was once promised by many of

the SDL leaders in the 80's and 90's. Only through the careful application of multi-dimensional models such as the one presented here can progress be made towards creating environments that truly support the emergence and development of self-directed learning.

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SELF-DIRECTED LEARNING AND ACTION RESEARCH

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This article discusses the relationship between self-directed learning and action research. Our examination of self-directed learning is based on Merriam, Caffarella, and Baumgartner's (2007) critique of self-directed learning literature, and our review of major sources of literature in action research is used to compare its features to self-directed learning terms similar to those used by Merriam, et al. Based on our interpretation of both literature sources, we make several observations about the similarities and dissimilarities in action research and self-directed learning. We conclude that both areas are more alike than different, and encourage others to examine both fields as a way to increase the understanding of each.

Our article addresses self-directed learning (SDL) and its relationship to action research (AR). We focus on the similarities of the two in terms of goals and process. However, we also elucidate areas in which the two are dissimilar. We argue that SDL can take the form of action research, especially first-person and second person action research (Marshall & Reason, 1994). Our article concludes with some thoughts about the advantages of viewing SDL and AR literature sources through the same lens, as well as implications of this viewpoint for research and practice. We argue that scholars and practitioners alike in each field stand to gain from one another, in terms of theory building, methods, knowledge of learner and researcher characteristics, and practical guidelines for conducting SDL projects and various forms of AR.

Our thesis draws on scholarly works in SDL over the past four decades, and the parallel works in AR over a slightly longer time frame. The SDL literature has been nicely summarized by Merriam, Caffarella, and Baumgartner (2007), and related summaries have been published by Brockett and Hiemstra (1991) and Long (2007). Our perspective of AR is informed by works of scholars who have examined the various ways in which AR is conceived and implemented in personal, social, and work contexts. A synopsis of related literature is provided in the *Handbook of Action Research* (Reason & Bradbury, 2001a), and specific models of AR are elaborated in literature written for various fields of professional practice and types of AR (e.g., Kemmis & McTaggert, 1988; Stringer, 1996; Whitehead & McNiff, 2006; Zuber-Skerritt, 1966). Finally, our claims are informed by our own research and experience in both SDL and AR that began in the early 1970's (for the first author) and extend to the present date.

RESEARCH ON SDL

Merriam, et al. (2007) summarize the literature on various facets of SDL in terms of three broad emphasis categories: goals, process, and learner attributes. According to Merriam, et

al., the first goal of SDL is to enhance the abilities of adult learners to be self-directed, the second is to foster transformational learning, and the third is to promote emancipative learning and social action. The beginning of SDL as a distinct area of study was marked by at least a partial focus on the first of these three goals (Brockett & Hiemstra, 1991; Knowles, 1975; Tough, 1979). In keeping with this goal, scholars have provided strategies for enhancing self-directedness and structuring effective self-directed learning projects (Knowles, 1975). Such strategies involve ways that adults can "plan, carry out, and evaluate their own learning" (Merriam, et al., 2007, p. 107). It is worth noting that Tough's (1968) initial interest in SDL was on the planning aspect of what he called *self-planned learning*.

The second goal, transformational learning, came into focus as scholars such as Brookfield (1985, 1986) and Mezirow (1985) pointed out the limits of instrumental, goal-directed learning strategies and chose instead to focus on the role of a learner's own biography as the basis for advancing individual learning experiences. Proponents of this goal orientation stress the importance of critical reflection on personal assumptions, beliefs, and values as a basis for making significant changes in the individual's meaning perspectives. Mezirow's (1985) pioneering theory building has stimulated one of the more visible and extensive lines of inquiry in the study of adult learning.

The third goal identified by Merriam, et al. (2007) centers on emancipative learning. This is a perspective that takes into account socio-political factors present in any SDL activity (Brookfield, 1993). Scholars working in this area of SDL cite various shortcomings of the individualistic, positivistic frameworks associated with the first two goals. In contrast, the emancipative learning goal is framed in terms of a critical theory perspective (Collins, 1996; Freire, 1972). Although proponents of this goal acknowledge the individual learner's role, their interest extends to social action as a prospective vehicle of change in systemic factors that influence individual and group learning. This interest extends to ways in which research on SDL is designed and conducted. For example, Collins (1996) and Hammon and Collins (1991) cite participative research methods as preferred ways to study multiple social forces that influence the decisions and actions of self-directed learners.

With regard to the process category of SDL literature, Merriam, et al. (2007) describe three types of process models: *linear, interactive*, and *instructional*. Linear models are illustrated in descriptions of the self-directed learning process described by Tough (1971) and Knowles (1975). Tough identified thirteen steps in self-planned learning. Knowles identified five more commonly recognized steps to planning and conducting self-directed learning activities is an enabling process in which "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). Knowles' steps are augmented by lists of resources that can be used by the learner along the way to a successful learning experience. The steps involved in Knowles' model are discussed later in this article.

Interactive models were developed as alternatives to the linear approach, as the latter was considered an ideal process that rarely depicts what learners actually experience as they decide and act in circumstances that are not always within their control. Interactive model developers cite such factors as context, opportunity, personality, and serendipity as important aspects of SDL, which they claim are not accounted for in linear forms of process. Works that fall into the interactive category include Brockett and Hiemstra (1991), Danis (1992), Garrison (1997), and Spear (1988), among others. For example, Spear and Mocker (1984) took an interactive approach to planning and conducting self-directed learning projects:

1. The triggering event for a learning project stems from a change in life circumstances.
2. The changed circumstance provides an opportunity for learning.
3. The structure, method, resources, and condition for learning are directed by the circumstances.
4. Learning sequences progress as the circumstances created in one episode become the circumstances for the next logical step" (pp. 4-5).

Instructional models were developed in response to the recognition that SDL is not exclusively an informal learning process. It can and does occur in formal educational settings, usually under the guidance of an expert teacher and/or in concert with group learning activities. Instructional models describe various learner characteristics that need to be understood by instructors who are interested in helping students become more self-directed in their academic experiences. The models are also intended to assist instructors and students in their attempt to sort out the respective roles they play in classroom learning environments. This intent is illustrated in the work of Grow (1991) and Hammon and Collins (1991).

The third type of process model, personal attributes of learners, has served as the focus of numerous studies that seek to identify characteristics related to a learner's decisions about what to learn and how to learn it. In recent years, most of this research has been on instrument development and assessment of learner readiness and personality traits (Beswick, Chuprina, Canipe, & Cox, 2002; Guglielmino, 1997; Oddi, 1986).

ACTION RESEARCH

Our discussion of AR is guided by two of the three major categories of SDL identified by Merriam, et al., goals and process. We don't use their third category, attributes, as we could not find literature that addresses the attributes of action researchers. Much more has been written about intended outcomes, strategies, and process models of AR.

AR can be defined as "a practical tool for solving problems experienced by people in their professional, community, or personal lives" (Stringer, 1996, p. 11). Other definitions emphasize its reflective, cyclical, and action orientation (e.g., Kemmis & McTaggert, 1988; Peters, 2009; Whitehead & McNiff, 2006). AR is undertaken by individuals largely

working on their own, by individuals in collaboration with others, or by organizations and communities (Reason & Bradbury, 2001a). The goals of AR projects may be instrumental, social, or transformational. Formal theory development or generalizability of results are important but only secondary outcomes of AR (Reason, 2001).

The origins of AR in the U.S. are traced to the work of Lewin and his wartime research on change and organizational development (1946, 1948). In Europe, features of AR were shown in the work of the Tavistock Institute in London after WWII, work that demonstrated the link between production technology and work organization and their influence on social democracy in Scandinavia (Reason, 2001). During the 1950's in the U.S., AR became associated with school-based inquiries by teachers and university-based educators; however, in more recent times it has spread to applications in various professional practice areas, including health-related occupations, business, higher education, and community education.

Reason (2001) describes three broad strategies of AR practice:

> 1. First person AR/practice skills and methods address the ability of the researcher to foster an inquiring approach to his or her own life, to act awarely and choicefully, and to assess effects in the outside world while acting.
> 2. Second person AR/practice addresses our ability to inquire face-to-face with others into issues of mutual concern—for example in the service of improving our personal and professional practice both individually and separately. Second person inquiry is also concerned with how to create communities of inquiry or learning organizations.
> 3. Third-person research/practice aims to create a wider community of inquiry involving persons who, because they cannot be known to each other face-to-face (say, in a large, geographically dispersed corporation), have an impersonal quality. (p. 185)

The AR literature is replete with studies of projects that have as their intent some form of personal change, individual or group-related change, or organizational change, outcomes that correspond to Reason's (2001) first, second, and third person types of AR, respectively. A closer examination of the literature that relates to these three types of AR reveals parallel goals in the SDL literature; e.g., building people's capacity for learning, transformational learning, and emancipative outcomes. Moreover, when the literature of SDL and AR are examined from the point of view of the learner or researcher, we find an overwhelming emphasis on practical goals and problem solving strategies for achieving them (Jennings, 2007; Peters, 1989; Quigley & Kuhne, 1997).

We have only to examine the tasks involved in process models to appreciate the action-driven, outcome-focused goals and strategies involved in both SDL and AR models, regardless of the model type involved. This was the case in the earliest reports of SDL research that followed Tough's (1971) seminal work on learning projects and it remains the

emphasis of literature in the broadened field of SDL research today (Long, 2007). For example, in discussing the relationship of SDL to reflective practice and the development of personal development plans by medical doctors in the UK, Jennings (2007) observed that "performing well in any task requires … knowledge of the task, and knowledge of one's own motives, resources, and constraints in context, in order to plan strategically … [and] the task of learning is no different (p. 520).

Whitehead and McNiff (2006) point to a fundamentally practical question that serves as the methodological centerpiece of what they call a living theory of AR. The question is "How do I improve my practice" (Whitehead, 1989, p. 42). This how-to question is echoed in Reason's (2001) description of first person AR and its wide-ranging practical orientation to a variety of contexts. According to Reason (2001), first person AR is arguably "… the experiential and practical foundation of all other forms of inquiry … [that] invites the individual – in their personal and professional, public and private lives – to attend to questions," (p. 187), such as the following:

1. Who am I? What is important to me? What is worthwhile engaging with?
2. What frameworks of thinking/feeling do I bring to my life and work? What creative and distorting perspectives do I bring? Am I stuck in one frame or able to appreciate and delight in alternative frames?
3. What is the quality of my behaviour [*sic*]? Do I have a range of behaviours [*sic*] appropriate to the situation? In particular, can I act in such a way as to increase the quality of the conversation? Am I flexible, diplomatic and outrageous, cunning and simple, wise and foolish? Is my behavior congruent with my purposes?
4. Am I awake to what is happening within me and in the world around me?
5. How do I act now to increase the quality of dialogue and inquiry? (p. 187)

A similar practical, problem-focused orientation characterizes second- and third-person AR. Any of these strategies can be driven by the researcher's own agenda, the participants in studies, or both. However, all types of AR involve a process of interacting steps or phases of development. Process models have been advanced in the AR literature by various authors, beginning with Lewin (1948). He characterized AR as a spiral of steps, "each of which is composed of a circle of planning, action, and fact-finding about the result of the action" (p. 206). He further describes the initial cycle of AR:

> The first step then is to examine the idea carefully in the light of the means available. Frequently more fact-finding about the situation is required. If this first period of planning is successful, two items emerge: namely, an overall plan of how to reach the objective and secondly, a decision in regard to the first step of action. Usually this planning has also somewhat modified the original idea. The next step is composed of a circle of planning, executing,

> and reconnaissance or fact finding for the purpose of evaluating the results of the second step, and preparing the rational basis for planning the third step, and for perhaps modifying again the overall plan (pp. 205-206).

This cyclic process came to characterize numerous such process models of AR over the last half-century. For example, Kemmis and McTaggert (1998) developed a model consisting of four steps: plan, act, observe, and reflect. These four steps constitute a cycle of AR that repeats as many times as called for in particular situations. Quigley and Kuhne (1997) adapted this model to a six-step process that evolved around the three basic phases of planning, reflection, and action. Susman (1983) described five phases of a research cycle: (a) diagnosing (identifying or defining a problem); (b) action planning (considering alternative courses of action); (c) taking action (selecting a course of action); (d) evaluating (studying the consequences of an action); and (e) specifying learning (identifying general findings). Finally, Hatch (2002) described a process similar to Susman's:

> ... identifying a problem through careful observation, reflecting on the dimensions of the problem, designing a change that addresses the problem, implementing the change, and assessing its effectiveness through careful observation. (p. 31)

Steps included in this process are the following: developing a plan of action to approach the problem or area of concern, implementing this plan, examining the practical theory based on the study's findings, and modifying the theory as needed. While our article is but a brief overview of models discussed in the AR literature, these examples illustrate how similar the process steps are and how closely akin the overall process is to Lewin's (1948) initial concept of AR.

SDL AND ACTION RESEARCH

The literature in SDL reflects a short but intense history of inquiry into the nature and outcomes of self-directed learning. However, SDL research, like other nascent fields of study, is still attempting to gain its footing. This literature reveals sharp but healthy differences in viewpoints about the goals and process of SDL, as well as a struggle to identify who the self-directed learner really is and how self-directed learning events are conducted. Similar goal and process features characterize the relatively short history of the literature of AR, in that writers in this field are concerned to model the AR process, enable action researchers to plan and conduct action research, and identify the associated appropriate goals. For example, Knowles (1975) and Tough (1968, 1971) discuss linear process models that serve the goal of enhancing learners' abilities to be self-directed, while Quigley and Kuhne (1997) and Susman (1983) offer a similar approach in the area of AR. The work of Danis (1992) and Spear and Mocker (1984) fit the interactive process model and transformational learning goal, and their work is similar in this respect to the AR model authored by Kemmis and McTaggert (1988). Finally, the views of Falls-Borda (2001), Freire (1972), and Hall (2001), among others in the participatory AR literature, are

consistent with the work of Collins (1996), Hammon and Collins (1991), and Mezirow (1985) in terms of SDL as emancipative learning.

Between the two categories of goal and process, the easier comparisons were made in the area of process. We illustrate these comparisons in Table 1. The left column of the table shows the process steps of Danis' (1992) model of SDL, while Susman's (1983) AR model is shown in the right column. Reading left to right with Danis' steps in mind, we can see parallel process steps in Susman's model. We consider the combination of Danis' first two steps (*Reacting to a triggering event* and *Seeking and selecting specific knowledge to be acquired and resources available*) to be essentially the same *Diagnosing* step identified by Susman. Danis' third step (*Organizing and structuring the knowledge to be acquired and the strategies to be used*) has a meaning similar to the second step, *Planning action*, in Susman's model. The Danis model's fourth and fifth steps have similar parallels to Susman's third, fourth, and fifth steps. However, it should be noted that Susman's model does not specify a step that relates directly to Danis' step 6, *Applying the new knowledge*. Our placement of an asterisk next to step 6 and step 4 in the Danis model indicates we believe the two should be placed together next to Susman's step 3, *Taking action*. This somewhat awkward way of indicating the item placement alongside one another illustrates how such models are not necessarily linear in terms of comparisons that can be made.

Table 1. *Self-Directed Learning and Action Research Comparisons*

Danis SDL Model	*Susman AR Model*
1. Reacting to a triggering event 2. Seeking and selecting specific knowledge to be acquired and resources available	1. Diagnosing
3. Organizing and structuring the knowledge to be acquired and the strategies to be used	2. Planning action
4.* Acquiring and integrating the new knowledge	3. Taking action
5. Assessing the quality of the learning outcome and learning strategies used	4. Evaluating 5. Specifying learning
6.* Applying the new knowledge	

*The Danis steps 4 and 6 contain similarities to the Susman step 3.

Another perspective on the similarities of AR and SDL models can be represented in models that identify such steps by different names. This is illustrated in Figure 1 by comparing the widely-cited Knowles (1975) SDL model with the Susman (1983) AR

model. We combined steps in the two models in terms of their intent similarity shown the left side of the figure. We also identified these steps in terms of their essence on the right side of the figure. The result is a list of four core steps that characterize both models: Diagnosing, Action Planning, Taking Action, and Evaluating to broadly represent the AR and SDL models we reviewed. While these core steps resemble commonly accepted models of problem solving and decision making, most SDL and AR authors acknowledge that use of their models rarely follow a simple path from the first step to the last.

COMPARING SDL AND AR

After considering the individual and combined features of various SDL and AR, such as goals, process, and attributes, several observations can be made about the similarities and differences in comparing self-directed learning with action research.

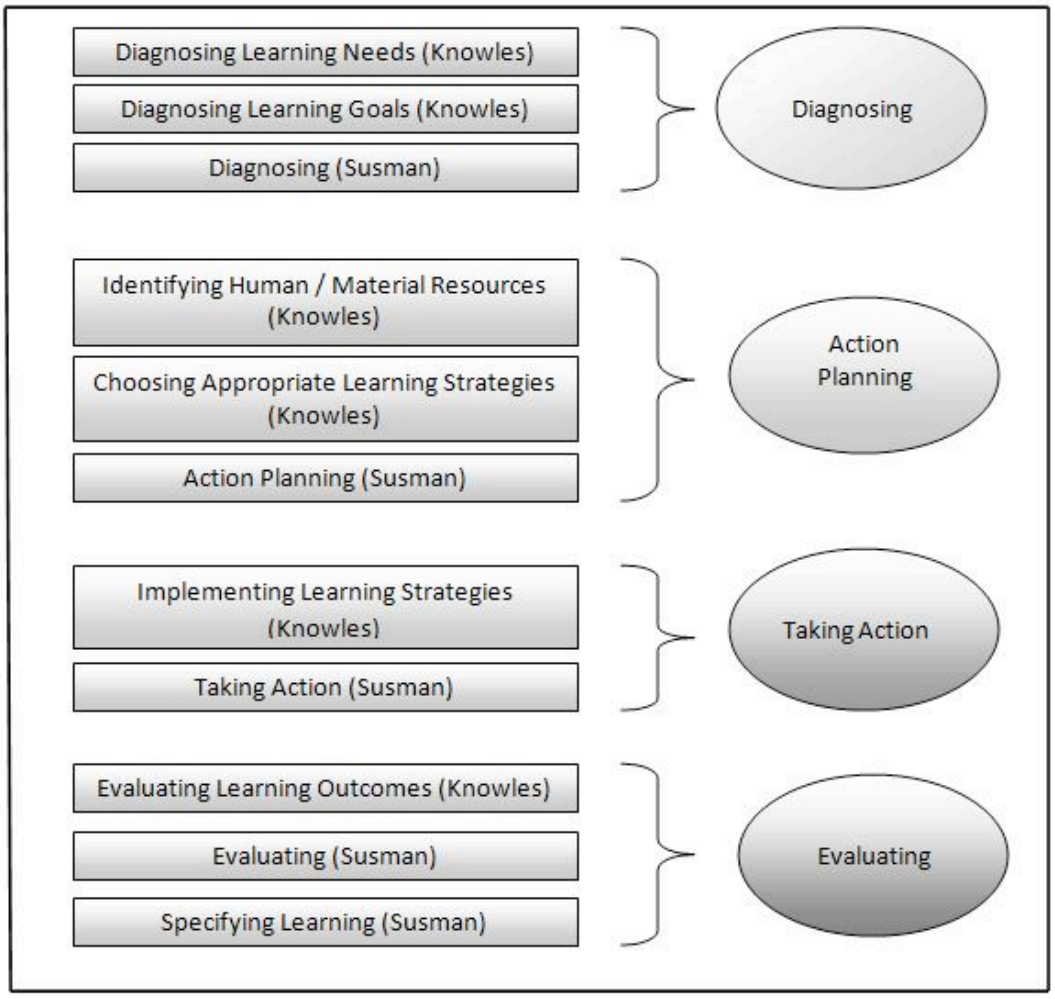

Figure 1. Comparing self-directed learning and action research via two models.

Similarities

Movement Within the Steps of a Model

The SDL and AR processes do not necessarily follow the order of steps described in linear models, but most steps are undertaken by learners or researchers at some point in a completed project. There is pervasiveness of SDL in everyday life as well as a widespread and increasing focus on SDL as a feature of formal instructional environments. We also know that most adults are likely to identify, plan, and conduct one or more learning projects as part of daily living or formal study. However, even though we think about the goals and process of SDL as being in the hands of learners and primarily under their control, our evidence shows that adult learners rarely follow a rigid, lock-step, and predictable path to the outcome of their efforts (Jennings, 2007; Kemmis & McTaggert, 1988; Peters, 2009; Quigley & Kuhne, 1997; Spear, 1988).

One of the important features of the various models discussed in our article is their cyclic process. Authors of all these models have been quick to qualify the linear shape of their step-wise models as constituting cycles of action and reflection (with the possible exception of Tough's steps). That is to say the steps are not necessarily to be followed in the exact order in which they are described in such process models. A learner may step into a given point along the apparent continuum of steps and begin there, only to move backwards to an earlier step and then forward to a step several positions away from the original point. This forward and backward negotiation of steps is characteristic of cyclical models, both in SDL and AR.

Goal Directed Nature

Self-directed learning and action research are both goal directed, even if goals are not always clear, fixed, and fully known in advance by a learner or researcher. One area in which the literature bases of SDL and AR are alike lies in the way that their respective goals and processes are differently understood. Just as in the SDL literature, authors of AR models differ in terms of how they describe the goals of AR. The differences in first, second, and third person research cited by Reason (2001) are illustrative of the differences. However, as is the situation in SDL, philosophical differences among authors account for most of the variety of goals discussed in the AR literature. Some forms of AR are enabling or instrumental, in that an inquiry is intended to show what works and what doesn't in particular areas of professional practice. Other forms, especially first-person AR, may result in a transformation of personal meaning making. Second-person AR is frequently done in the interest of co-constructing new knowledge about some aspect of the lives of both researchers and participants in their studies. Third-person AR involves the researchers as facilitators of others' inquiries while also being self-reflecting subjects of the inquiries.

Reflective and Recursive Processes

SDL and AR literatures also have in common the role of reflection in learning and inquiry projects. Although Knowles didn't stress this aspect of SDL in his widely-cited process description, Brookfield (1985, 1995), Mezirow (1985), Peters (1991), Peters and Gray

(2007), and others included reflection as an aspect of SDL. Similarly, nearly all models of AR contain references to reflection as part of the process of planning and implementing AR projects. In addition to the impetus provided by Lewin (1948) in this respect, works by Kemmis and McTaggert (1988), Peters (2009), and Quigley and Kuhne (1997) can be traced to the influence of Schön's (1983, 1987) seminal writings on reflective practice. According to Peters (1991), reflective practice involves the following:

> [I]dentifying one's assumptions and feelings associated with practice, theorizing about how these assumptions and feelings are functionally or dysfunctionally associated with practice, and acting on the basis of the resulting theory of practice. (p. 89)

To facilitate others designing and conducting AR events, researchers are engaged in interactive phases of action and reflection throughout their inquiry processes. Reflections begin as responses to certain aspects of researchers' or others' practice; they formally and informally reflect on these aspects and their surrounding context. These reflections become stimuli for action, thus setting cycles of actions and reflections in motion. At the end of the study cycle, researchers reexamine their practical theories and make provisional decisions as to their next moves in practice. This results in renewed cycles of action and reflection. Together, reflective and active processes constitute an overall, systematic approach to AR.

Collaboration

Individual learners and researchers have the primary responsibility for planning, implementing, and evaluating SDL or AR projects, but they rarely do so entirely alone. Peters (2009) and Peters and Gray (2006) discuss this apparent paradox in SDL. In explaining their model of AR, Kemmis and McTaggert (1988) put it this way: "It is important to realise [*sic*] that the AR of the group is achieved through the critically examined action of individual group members" (p. 5). However, this collaborative feature that is strongly emphasized in the AR literature is not as prevalent in the SDL literature.

Contextual Factors

Goal and process for both SDL and AR are situated in the particular contexts and stimulated by circumstances in the learner/researcher's environment. While some of the linear SDL process models may fail to account for contextual factors, most interactive models attempt to do so (e.g., Brockett and Hiemstra, 1991; Danis, 1992; Garrison, 1997; Spear, 1988; Spear and Mocker, 1984). AR, by its very nature, emphasizes the importance of context. Reason (2001) provides evidence of this when he suggests questions, such as "Am I awake to what is happening within me and in the world around me?" and "Do I have a range of behaviours [*sic*] appropriate to the situation?" (p. 187).

Differences

Problem-Driven and Action-Oriented

While both AR and SDL are often problem-driven and action-oriented, AR projects are more readily characterized by these two features than are SDL projects. For example, AR

projects usually are undertaken in order to address some practical aspect of life or practice, whether undertaken by an individual, group, or organization. The goal of such projects is to make a change in an area of life or practice that is otherwise problematic, issue driven, or in which there is promise of a constructive improvement. In addition, such projects are action-oriented as the type of research implies.

Of course, SDL projects often are problem-driven and may be undertaken in order that the learner can eventually undertake some different action. However, the goals of such projects are commonly expressed in terms of the knowledge or skills to be gained. In this case, an action might be implied but not the immediate outcome intended by the self-directed project. Moreover, SDL projects may be undertaken to gain knowledge for knowledge sake or for social reasons. These are rarely the goals of action research projects.

Third-Person Inquiry Orientation

In terms of processes and goals, AR models and projects are more likely to take the form of third-person inquiry than are SDL efforts. Third-person inquiry may take the form of an action researcher assisting members of an organization in their attempt to study the effects of some form of planned organizational change. The action researcher's primary contributions would be process facilitation, but they may also be organizational change experts. The goal would be to help organizational members develop their capacity for conducting inquiries into a particular area of concern. More broadly the goal would be for the organization to develop itself as a learning organization, one that includes inquiry as part of its culture. In such an instance, the action researcher is not acting as a self-directed learner, but as a guide, coach, or consultant. While it could be argued that a learning organization is, at some level, a self-directed learning entity, evidence of this concept could not be found in the literature.

SDL and AR Attributes

Thus far more is known about self-directed learner attributes than about action researcher attributes. The only area of interest not shared by the two fields of study is the SDL interest in identifying learner attributes. This rich area of SDL research has lead to several significant discoveries regarding learner characteristics and the development of instruments or scales that identify such self-directed learner attributes as readiness, perceptions, and skills (e.g., Guglielmino, 1997).

The action research literature revealed only two works that suggest an interest in AR attributes, but neither was explicitly framed in such terminology. Rooke and Torbert (1998) focuses on leadership styles and associated action logics, personal characteristics, and strengths of leaders who would utilize AR as a strategy for organizational leadership and development. However, the characteristics look more like stages of ego development theories than learner attributes.

The other study focused on pre-service teachers' images of themselves and their situation while doing action research. Subramaniam (2010) found that the teachers formed a repertoire of images of themselves engaging in action research on some aspect of their

student teaching practices. These images helped pre-service teachers make sense of their research experiences. One such image was termed "self-fulfillment" (p. 541). Some pre-service teachers formed a predetermined image of action research as being crucial to their professional growth. Some imaged action research as a project that would benefit others in their profession.

CONCLUSIONS AND IMPLICATIONS FOR RESEARCH AND PRACTICE

While the two fields differ in several respects, they are more alike than different, and there is much to be gained from an examination of the two areas of study through the same lens. Both SDL and AR are forms of learning and inquiry. As such, when an individual adult, team, group, or organization purposefully inquires into some aspect of their practice, personal life, social environment, or institutional environment, they stand to learn from their experience.

Various models of AR and SDL provide guidance for those who wish to take a systematic approach to learning from experience, even though AR models tend to focus more on the formal methodological aspects of inquiry than do most SDL models. In either case, the linear appearance of most models gives way to the actual non-linear choices that more readily characterize the real world of self-directed learners and action researchers. A forward-backward movement over the various process steps and over the course of time encourages reflection on such factors as context, personal belief systems, political and ethical consideration, and changing conditions that affect future decisions.

In addition, SDL and AR models are more flexible than they appear. Notwithstanding the fact that most steps in such models are undertaken at some point in the process, the models are most useful when their linear form is de-emphasized and they are seen as an expression of an attitude toward inquiry instead. Such an attitude is conducive to learning from experience in the moment of action and openness to new possibilities.

The review presented in this article is obviously limited in terms of including the varied array of SDL and AR examples. There are many forms of AR and there are multiple viewpoints from which SDL is understood. Thus, we encourage others to share our interest in looking at the two fields as distinct enterprises that share much in common for the sake of expanding our overall knowledge. Scholars and practitioners in both fields of inquiry and learning have much to gain from each other.

However, despite similar interests, especially in terms of a mutual interest in goal and process, it is rare that scholars in either field cite each other's literature. This lack of mutual acknowledgement is no less apparent or needed in areas in which the fields are different in terms of research focus, such as learner or researcher attributes. There is also little evidence that scholars in either field are aware of the theory building that goes in the other. For example, Reason and Bradbury's (2001b) distinction between first, second, and third-person AR may be a useful framework for sorting out similarities and differences in SDL

projects in terms of goals and process. One of the more interesting aspects of the different forms of AR in this model is the action researcher's relationship with other people and institutions directly or indirectly involved in the research. Several scholars have noted that self-directed learners almost always involve other people or organizations, directly or indirectly, in pursuit of their goals (Brookfield, 1985; Candy, 1991; Donaghy, 2005; Peters & Gray, 2006). We suggest that more needs to be done in this area of SDL study and the rather extensive work on first, second, and third-person AR can help SDL scholars advance their own studies of self-directed learner relationships to people and organizations.

In this article we have cited and compared examples of instructional models of self-directed learning and their counterpart models of action research methodology. These models are intended to depict a systematic process, often containing distinct steps, that may be used as guides to the work of AR and SDL researchers (e.g., Florida Department of Education, 2006). Such models may also serve as a focus for courses, workshops, and other professional development activities intended to help learners plan and conduct their own learning projects or action research projects. There is some AR literature that addresses examples of how model-based methods are taught as guides for students to use in planning and conducting their own action research projects (Levin & Martin, 2007; Peters & Gray, 2007; Peters, Doi, & Taylor, 2010;), but no counterpart to this effort was found in SDL literature. This is another promising area of work for SDL and AR scholars and program developers whose interests lie in how process models may become the focus of formal and informal teaching and learning activities.

The models can also serve as the focus of research in various areas of professional practice, personal growth, problem solving, and other areas of learning and inquiry. For example, one model of AR, called the "DATA-DATA" model (Peters, 2009), has been used by several practitioners as a guide to planning AR projects, and other practitioners in business, higher education, and community education organizations have utilized the model as a framework for their doctoral dissertation projects related to aspects of collaborative learning. For example, Duncan (2009) utilized the DATA-DATA model to investigate his practice as a personal development coach. Based on the first few years of such coaching experience, Duncan realized that his approach fell short of personal expectations in terms of helping clients engage in critically reflective practice. He adopted a particular approach to reflective practice that promised to help him and his clients think together more critically at several levels of reflection, framing, and theorizing about alternative courses of action. Duncan designed and conducted an action research project on his practice, using client interviews, a reflective journal, and audio tape recordings of coaching sessions as sources of data.

The results of a thematic analysis of the data revealed that he was successful in promoting more critically reflection on their thinking and actions, but that they were not able to consistently reflect at higher levels of critical reflection. This result challenged Duncan to continue tweaking his coaching practice in search of ways he could build on successful changes that came from his initial project. However, even though Duncan's study and the other AR dissertation studies informed the practitioner-researchers' own practices and

helped advance our knowledge of related practices, none of the studies cited SDL literature. Once again, we see little evidence of cross-pollination between the two fields, even as their scholars and practitioners pursue similar goals. Thus, we argue that each community can benefit by examining work being done in the other and perhaps develop new theories and applications that draw their strength from both fields. This is the challenge we accept for ourselves and lay before our colleagues in the two fields of study and practice.

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THE CONFERENCE COURSE: INSPIRING STUDENTS TO SELF-DIRECTED LEARNING

Jeannine Kranzow
Nancy Hyland

This article discusses an innovation in graduate course curriculum which is grounded in the professional conference. The goal for the course was to increase self-directed learning for students. Details of the syllabus components, co-constructed assignments, impact of professional learning communities, formal and informal networking opportunities, and the importance of incidental learning are presented. The conceptual framework is rooted in the multiple and interdependent lenses of self-directed learning, constructivism, and professional development. After assessing the course through various types of data collection activities, the conference-based course was perceived to be effective in terms of making a meaningful contribution to graduate student learning in terms of self-directed learning.

OVERVIEW

This action research effort (Herr & Anderson 2008; Stringer 2007) explores the power of the professional conference to inspire graduate students toward self-directed professional development. The study's purpose was to determine whether a course designed around a professional conference would be an effective mechanism for increasing self-directedness in graduate students who have limited experience with research and conferences. The course's conceptual framework was supported by theories of constructivism (Windschitl, 2002), critical thinking (Brookfield, 2005; Johanson, 2010), and motivation (Ponton, Derrick, & Carr, 2005; Wlodkowski & Westover, 1999). Wlodkowski and Westover (1999) note the following:

> Most people are highly motivated to learn when they feel included (respected within the learning group), have a positive attitude (find the subject matter relevant), can make learning meaningful (find learning engaging and challenging), and are becoming competent (effective at what they value). (p. 1)

Two faculty members (the authors) designed a meaningful course around a professional conference and considered how to gain the greatest advantage from the experiences of other professionals recognizing that, "the university culture needs to change and grow with the students" (Boden, Smartt, Franklin-Guy, & Scudder, 2006, p. 138). Growing with the students as they become more self-directed and motivated to learn can enhance instructional effectiveness.

CONCEPTUAL FRAMEWORK OF THE STUDY

Nearly all graduate students in the education programs at the institution involved in this research are practitioners in fields of education and social services. "They are people for whom the development of an ongoing story of self is an active project" (Warin, Maddock, Pell & Hargreaves, 2006, p.234). Although we want to believe that they are students who are likely to be, based on professional and academic credentials, capable of and accustomed to self-motivation, self-direction, and internal striving toward excellence, all too often upon their arrival in our graduate program, we discover the contradictions. Many of the students display characteristics of a dependent learner. Bureaucratic directives and endless demands on time lead many capable professionals further and further away from professional development and self-directedness (Doolittle, Sudeck, & Rattigan, 2008). Frequently they are so overwhelmed by the demands of the workplace that their professional development focus becomes the quick fix for the next day. As Martin and Kragler (2009) have noted about teachers in their school reform research, "They did not want to 'waste time' discussing theory or rationales behind strategy use or reflect on their own instructional practices" (p. 242).

Furthermore, none of the students in the course had published, only one had presented at a conference, and only a handful had previously attended a professional conference. With networking opportunities and professional relationship opporunities being plentiful at a conference, the course faculty felt it was imperative for students to experience a national or international conference. For many teacher educators, collaborative research is more pragmatic than individual research (Lunenberg & Willemse, 2006), but connecting with others who have similar interests is critical if that is to happen.

It was with this in mind that the authors agreed with Pata (2009) that "rapidly changing business and social environments require the development of constantly learning and creative, independent, responsible, and autonomous people" (p. 24). This allowed students to participate in the syllabus planning and in co-constructing their own goals and expectations which they wished to have met by the end of the course. Students actively participated in directing their own learning throughout the course to a degree not often required, and, as will be discussed further, to a degree with which not all students were comfortable. Constantly evaluating their own work expectations and learning achievement required an emotional willingness and commitment to self-directed learning (Johansen, 2010). Many students arrived at that emotional state at different speeds.

In addition to understanding the emotional impact from the level of critical thinking required of students in this course, faculty were committed to what Boden, et al. (2006) point out, "Curriculum must intentionally move students toward the goals of epistemological sophistication and self-directedness" (p. 138). The course syllabus required that students begin to manage both time and emotions from the outset, including working within a self-directed learning framework. The results of this style of curricular applications are discussed later in the article.

METHODOLOGY

The Sample

Forty one students from the School of Education Leadership program at a Florida university took part in a unique course offering in the spring of 2009. Faculty (the two authors as well as two other faculty involved in the course instruction) sought and received the permission of the students involved to study various aspects of the course including its implementation, impacts, and outcomes. Furthermore, permission to report this information, including the use of direct quotations when deemed appropriate, was granted. Participation was voluntary and had no impact on student grades. Survey portions of the study were completed anonymously and students were not identifiable by information requested (although in a few cases, students self-identified in a comments section). Faculty had the permission and financial support of the institution to conduct the study.

Thirty one of the students were female; ten were male. The majority were African American and first generation college graduates. Thirteen were master's students and the remainder were in either the specialist or the doctoral education leadership program. There were no prerequisites for the course, so participants ranged from new students in their respective graduate program to near graduates.

Instrumentation

The course design itself became the instrument developed for students, but the findings came from a combination of feedback mechanisms. One important measure of the ultimate success or failure of the curriculum trial was the final project. The final project consisted of an individually designed course. This included the following aspects: (a) an identified conceptual framework; (b) designated Florida Leadership Standards (or alternative administrative standards) integrated into rubrics for assessment; (c) detailed assignments and subsequent artifact evidence of learning (correlated with student objectives identified in the rubric); (d) agenda logs (which tracked student conference session selections, interviews with presenters, and critical friends meetings); and (e) a final theory and critical reflection paper in which students reported on their experiences, impacts, and perceived self-directed learning. All this material was submitted at the end of the course.

A second measure was a student survey (containing both open and closed-ended questions) which was distributed electronically (via Zoomerang™) after the course was completed and grades were submitted. Of the forty one students who completed the course and who were asked to participate in the survey, twenty five responded.

A third measure of effectiveness and possible success was the unsolicited feedback received from the students. In addition, feedback from the small group meetings at the conference, discussions with the faculty guide during the conference, and peer to peer interviews provided further insight into the learners' experiences. The data collected are, therefore, a

result of the surveys, interviews, unsolicited student responses, feedback from faculty teaching the course, and faculty evaluation of the final student projects.

The Procedures

Faculty initially conducted a needs analysis to determine the interest in a course grounded in a national conference. When it was determined that the interest level was high, a process of fleshing out the specifics began. Since this was an innovation for the institution, it was important that the details (not typically relevant for a class) were distributed and explained to students as well as other stakeholders. Administrative approval was sought for academic and budgetary concerns (costs primarily related to conference registration and faculty expenses). Separate from course registration procedures, students required clarification about conference registration procedures, accommodation information, and explicit course requirements.

Syllabus

The syllabus discussion is significant because it was essential to the course's success and had to be designed such that it was both specific in terms of expectations (encouraging academic excellence) and flexible enough to allow for creativity. Most importantly, its construction had to be the springboard by which students would develop an intrinsic experience of self-direction which as Garrison (1997) insists must include "integrating the cognitive-motivational and social dimensions of self-directed learning" (p. 2). The faculty syllabus framework, to use an artistic analogy, provides the basic canvas from which students create their own masterpieces. In essence, this syllabus framework was the context in which each student-created syllabus was grounded in common academic elements, but individualized such that it was focused on specific student interests and goals. Sanacore (2008) states, "successful teachers and students realized that motivation and performance are predicated more on freedom and autonomy than on coercion and constraint" (p. 42). Sanacore makes an important point; however, the authors were cognizant of the fact that not all students are ready to be challenged for self-motivation and self-direction to the same degree (Chu & Tsai, 2009). Recognizing that students start and develop on different time tables (Johanson, 2010), the development of critical thinking and self-direction could occur for each student in an individualized way through the syllabus framework, with specifics being detailed by the students themselves.

Since it is critical to allow students to be challenged incrementally and at an appropriate starting point early in the semester, approximately one month before the conference began the first class session was held. It was at this first session that the co-constructive nature of the syllabus and course requirements were discussed. As expected, students had questions about this co-constructive aspect. It was largely unfamiliar and students accepted responsibility for their own learning to differing degrees. Faculty hoped that students would be intrinsically motivated but clearly understood their support role in fostering such motivation. Encouraged by Murphy and Roopchand's (2003) indication that "positive feedback has an important role for individuals in continuing to engage in challenging

tasks," (p. 254), course instructors were present to answer questions and encourage students as they prepared for their conference-related course experience.

As this was a new learning mode for students, faculty appreciated the potential student distress in developing a tolerance for ambiguity and their communicated lack of confidence to willingly embrace confusion. However, faculty were confident that the faculty guide approach would support the academic viewpoint of learning in a community versus teacher directed learning (Guldberg, 2008). Faculty members were confident that this learning community would provide the strategies required to move to not only tolerance but also an appreciation for the deconstruction of assumptions in this disequilibrium.

The delineated portions of the syllabus included the following: (a) the number of required conference session hours; (b) details of the mandatory group meetings with each student's small group and faculty guide; (c) required documentation which would serve as validation for attending; and (d) aspects of a final project (requiring a reflective paper, journal submission, and evidence of objectives achievement). Student co-constructed final project aspects included locating a theoretical framework from which to ground their work surrounding the conference and selection of conference sessions which they desired to attend. Beyond that, students identified elements such as additional interviews or email communications with conference presenters. They also identified research support pieces such as selected text from the literature and annotated references for both their journal and final project. As Sanacore (2008) suggests, "when teachers incorporate learners' interests and proclivities into the curriculum learners are more apt to be motivated and engaged, and their achievement is more likely to improve" (p. 41).

At the end of each conference session they attended, students were required to ask presenters for a signature. This course element was primarily intended to verify student presence at various points in the conference, but the unexpected learning derived from this assignment was notable. Importantly, students made meaningful connections with other professionals and practitioners excited about their work. Students met others in positions similar to themselves (with similar challenges and rewards found in their work) who were experts in their fields, and faculty began to sense a change in students' professional identities. It seemed that students were encompassing a broader understanding of themselves as professionals reflective of the delineation made by Thomas and Gadbois: "While self-esteem refers to global evaluations of oneself, self-concept includes both evaluation of and knowledge about oneself" (2007, p. 102).

The opportunity for students to make decisions about their own learning community and to engage colleagues and peers in critical reflection empowered them to value their own expertise while evaluating others. They also began appreciating their own need for new or deeper learning. The variety in relationships they created demonstrates Baker's (2004) suggestion:

> Predominant reliance on socialization theory fails to capture the importance of the variety of relationships, within and outside of the academic

> community, that are important to students' 'communication strategies' and there is a need for alternate theoretical frameworks to enhance the perspective socialization theory provides. (p. 4)

Networking and Professional Learning Communities

The conference site, while local enough to make air travel unnecessary, was still about an hour and a half away from most students' homes. This meant that nearly all students arranged to carpool and share rooms at or near the conference site. It was expected that engaging with others during the conference would increase the satisfaction which students derived from their participation experiences. The syllabus design required networking and interacting at different points during the conference, but beyond that the sense of camaraderie built during travel and accommodation arrangements was noteworthy.

The first formal step in building a professional learning community (PLC) was an on campus meeting with students in the course and faculty who were scheduled to teach. This first meeting clarified the PLC concept as one in which "the focus is not just on individual teachers' professional learning but of professional learning within a community context – a community of learners, and the notion of collective learning" (Stoll, Bolam, McMahon, Wallace, & Thomas, 2006, p. 225). Equally important to the PLC concept was a discussion of the nature of professional learning communities in relation to commitment. This was recognized by Doolittle, Sudeck, and Rattigan (2008) as an essential element, and viewed by the authors as critical to the success of this curriculum design.

Within the context of self-direction, it seemed imperative to address the role of the professor both in language and responsibilities. Faculty guide (FG) was the name chosen as it seemed to indicate the importance of the faculty position while also acknowledging the desired function. At the first meeting faculty guides began the process of building a professional learning community through validating students' commitment to an innovative course curriculum. The students recognized that other students would be contributing to a learning community, making travel plans and arrangements, and that a strong commitment to the course benefitted everyone. Students were then asked to sign a pledge of commitment (confirming their choice to participate and attend the conference) which immediately engaged them in thinking about their responsibilities.

It was in this initial engagement with students that the foundation of self-direction was unveiled and shared. Students were presented with expectations which would include many student-directed learning assignments and require them to discuss their personal journeys in the conference-based course. Faculty shared with students that the networking and social aspects of the course would help them develop as professionals in ways they could not yet recognize or appreciate. While students initially did not value or deeply grasp the essential interconnectedness of the social and academic experience, the faculty did. Toward that end, in addition to other smaller group meetings (to be discussed below), a reception held at the conference site was incorporated into the syllabus. This provided yet another chance for the professional learning community to experience shared goals, aspirations, and celebrations. Nathan (2008) points out the value of developing such a learning community:

> Teachers must have structured time to share, write, and talk about their teaching and their students. Otherwise, teaching is a solitary activity, all too often leading to unsatisfactory results for both teachers and students. A school with a healthy professional learning community will maintain a razor-sharp focus on student achievement; its faculty will feel a common ownership and responsibility for that achievement; and its students will achieve success. (p. 3)

One goal held by the faculty was that students would begin to see the value in discussing their experiences both in their jobs and at the conference. While the faculty wanted students to feel the energy which can be derived in gatherings of the larger community, logistically and for reasons of academic quality, graduate students were placed into groups of four or five, which served as their critical friends group (CFG). "The primary aim of a critical friendship is seen as supporting improvement through empowerment, demonstrating a positive regard for people, and providing an informed critique of processes and practices" (Swaffield, 2005, p. 45).

The assignment of students to each faculty guide group was a simple, alphabetical decision. Groups were not arranged by program or class standing. As a consequence, each group was composed of masters, specialists, and doctoral students. Given the rather rigid nature of traditional courses, the authors believed this type of grouping would offer students the rare chance to practice interdisciplinary student scholarship with a less heterogeneous population to which students are not typically accustomed. This was a unique opportunity given the rigidity of traditional course structures for registration. The integration of masters, specialists, and doctoral students into the CFG also provided a chance to challenge and examine how students viewed various professional issues, including issues of power, ideological differences, and disagreement within their professional learning communities (Hargreaves, 2003; Stoll et al., 2006). Each CFG and FG met both prior to and during the conference. These meetings provided a forum for students to communicate growth, confusion, and frustration, and to collaborate with others in their journey. Garrison (1997) stated that "responsibility for self-monitoring reflects a commitment and obligation to construct meaning through critical reflection and collaborative confirmation" (p. 26). Faculty observance of students rushing to attend the CFG meetings and excitedly dialoguing with the FG's afterwards were testament to student commitment to such critical reflection and collaborative confirmation.

Assessment

The School of Education uses a rubric which allows work to be scored according to documented outcome objectives. Therefore, student work was assessed according to this rubric. Evaluations were both formative and summative. The formative assessment focused on student feedback through the following: (a) the small group sessions once at the conference site; (b) individual discussions and interviews with the faculty guide throughout the conference; and (c) the peer to peer interviews. Beaver's (2009) assertion that "providing an environment that allows for these teachers, who share similar experiences, to

brainstorm and problem solve not only creates solutions, but it also builds a community atmosphere of trust and appreciation" (p. 27) supports the multiple measures within the formative assessment. Some students acquired information at the conference which led them to intentionally deviate from their original self-directed syllabus for this course. As long as the changes were academically sound and were discussed with the faculty guide, in keeping with the co-constructive nature of the course, they were permitted.

The summative evaluation consisted of the following activities:

1. A conceptual framework composed of a set of leadership standards, critical reflection theory, and a specific content topic lens (such as curriculum design, diversity, leadership, and teaching strategies, leadership, etc.) drawn from the conference content and matched to the area of study required by the academic plan of study.
2. Session chart noting times, dates, and presenters of each session attended.
3. A student journal noting critical reflection elements along the journey.
4. A summary paper centered on the selected content topic (completed in an APA format and supported with a minimum of 10 current references).

The final work product was submitted at the conclusion of the term, well after the conference itself, giving students ample time for reflection and project completion. After the conference, faculty and students communicated through email and feedback on student projects.

Survey Instrumentation

After the grades were submitted an online software tool, Zommerang™, was used to survey the course's conference attendees. It was designed by faculty to obtain formal and informal feedback via both open and closed-ended questions. Of the forty-one students who participated in the conference-based course, twenty five completed the survey. The outside parameters of a five-point Likert scale used for several questions were *Strongly Agree* and *Strongly Disagree*. Other closed-ended questions required either a *yes* or *no* response. Data analysis and percentage evaluation was conducted for each question. Survey results which indicate that students increased their self-directedness as a result of the course include the following:

- Ninety-six percent of the students completing the survey either strongly agreed or agreed that the course increased their interest in the field;
- One hundred percent said they would consider attending a future conference.

While increased interest is not a guarantee of increased self-directedness, it is likely that increased motivation and self-directedness are closely tied. Ponton, Derrick, and Carr said this about a related concept, self-image: "Also, because activity choice is related to self-image, educators should reinforce their students' definition of themselves as continual, lifelong learners so that future learning activities are chosen to reinforce this ingrained self-image" (2005, p. 126).

When asked how what they learned will affect future practice, one student commented, "I'm more inclined to join other professional development programs," and another stated, "What I learned will assist me in effectively applying the latest information to further strengthen my instruction and increase relevancy to my students." Still other students talked about their enthusiasm for the professional connections and relationships built within their field. One notable comment was the following: "The networking was phenomenal. The workshops were inspiring and facilitated higher order learning. I became more convinced that education was to be my next field." Beavers (2009) posits, "Learning that takes place from personal inquiry is often the most effective and lasting" (p. 27), and the student comments seem to support this concept.

Unsolicited student feedback

Upon returning from the conference site and prior to receiving the survey, some students sent emails to the campus administrators and faculty guides to express their feelings. Their feedback was supportive and complimentary in nature, and provided confirmation of the apparent meaningfulness of the conference-based course for students. Two excerpts are noted below (pseudonyms are used to protect the confidentiality of participants and faculty). Mark stated the following:

> Having the opportunity to go and learn best practices in multiple areas and talking with colleagues from around the world was an awesome experience; moreover, getting the chance to meet together in our small groups and share our experiences of the conference was most meaningful (for me).

Patricia stated other positive things in her email communication which said this:

> Thank you! What a wonderful opportunity this was to participate in a conference where we were able to network with other professionals in our areas of interest….The best part was I learned how to create a wiki and have been able to create one for Dr. Peter's group analysis of the conference to share information with all the students. I invite you to view it. I will be sending you an email from my wiki which should allow you to access the page. It is my hope that other students get the opportunity to participate in a professional conference such as this one and again thank you for allowing us to participate.

Unsolicited Faculty Feedback

Immediate faculty feedback came after the first meeting of the small groups, and continued throughout the conference and after the formal reception at the conference site. Faculty sensed that something important was happening and that students were growing more than they normally do in a single class. Participating faculty requested of the department chair early in the course to continue the following year and utilize what would be learned during the entire experience for future improvements. They were encouraged by the quality of the student engagement during the group meetings, the celebratory events, and the capacity of

the students to develop professional connections. Faculty commented on the sophistication and academic excellence displayed in all points of assessment. One faculty member stated, "the level of critical thinking that emerged as a result of the conference-based course had an immediate impact on academic advising conversations." Another faculty member observed that "there was an internalization of students' commitment to lifelong learning within their practice." This reciprocal excitement for learning has the potential to translate into more effective advising for both students and faculty.

DISCUSSION

The effectiveness of the conference as a vehicle for moving students toward self-directedness was confirmed by the results of the various assessment measures. A future consideration to gain a deeper understanding of the effectiveness of the course in relation to self-directed learning (SDL) would be to have the students complete an SDL pre-test and post-test. This would provide focused insights into specific characteristics which could then be used to make curricular adjustments. Networking and community building were critical elements of the course, and students seemed to understand that concept at the course's conclusion (although they did not see that at the beginning). Comments indicated that a conference-based course has the potential to motivate students to better themselves and continue in their practice. When students see peers excelling in areas in which they also have the capability of excelling, they appear to view themselves in a new way. This was clearly evident in the confidence that students exhibited. One student proudly declared, "I told the presenter that I had read his book and I even asked if he would give me feedback on my dissertation topic."

As this was the first attempt for the researchers at this type of course, there are certainly areas for improvement and refinement. One item students cited as an item for future improvement was that they wanted to meet on campus after completing their final projects. Students might benefit greatly from a presentation of their final products to each other, and a chance to discuss the most meaningful experiences within the course.

A second item students brought to faculty attention was the importance of the presenter signature. Acquiring a presenter's signature required that student initiate at least a small conversation and students reported than many of the conversations grew into much more meaningful connections and networks. Faculty did not realize initially how this seemingly minor activity (initially required simply to document the time spent at various sessions) would often transform into a gateway for professional connections, conversations, and supportive networks. Many of the graduate students in this study hold positions of authority and control in their day-to-day lives, but when placed in the academic environment, the faculty members observe their tendency to dismiss their own expertise and exchange it for the expertise of a presenter. After numerous discussions with various presenters, students appeared to view themselves as equal participants in conference-related discussions.

Such critical discourse was evident in the nature of discussions in the CFG's and the types of questions they were asking faculty and peers. Students used the CFG's to expand their networks and were inviting nationally known conference presenters (now apparently seen as professional peers) to join them in discussing topics. Future research efforts could examine this topic of professional identity formation through attendance at a conference.

As students began to see themselves as more influential practitioners and formed new identities, they seemed to take more ownership for their actions. One CFG even invited peers from another state to attend the celebration event planned just for the course participants. The power dimension between faculty and student was seemingly changed and self-directedness emerged on multiple levels. It makes sense that this effect flows not only into their graduate student experiences, but also into their professional decision making. As the authors reflect on this conference-based course, we have seen much evidence of what Pearson and Somekh (2006) claim as criteria for experiencing transformative learning:

- learning creatively: contributing, experimenting, solving problems;
- learning as active citizens: acting autonomously, taking responsibility for their own learning;
- engaging intellectually with powerful ideas: using thinking skills, grappling with ideas/concepts; and
- reflecting on their own learning: evaluating their own learning through meta-cognition. (p. 520)

Perhaps future research will extend this discourse through a focused study on the relationship of transformative learning and self-directedness in graduate education. Such information could lead to changing practice and a new transformed sense of professional identity.

This research on curriculum effectiveness was an attempt to create interdependence among student, faculty, and a course experience through self-directed learning. As educators look to the future of higher education, it is prudent to contemplate the power of a range of curricula extensions such as the one described in the article to contribute to changing the learning culture. Johanson says something similar this way: "Learning communities and peer learning bring social interaction to the learning context, and such a connection is vital" (2010, p.28). Perhaps it is through the intersection of self-directed learning, critical thinking, and learning communities we believe exhibited via our conference-based course that graduate students will discover their professional voice. Institutions interested in re-inventing the higher education experience need only to listen.

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A CITATION ANALYSIS OF SELF-DIRECTED LEARNING LITERATURE: 1980-2008

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Steven L. Carter
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This article investigates and reports on a citation analysis of self-directed learning literature from 1980-2008. It updates a previous analysis conducted by the University of Tennessee Self-Directed Learning Research Group. Researchers report on the top publications and authors and remark on the influence of self-directed learning scholars over the past three decades. Recommendations for future research in this area also are offered. This research provides another look at the literature and presents information about sources and contributors that have influenced development of the SDL knowledge base. The process that we and our predecessors used to determine which items to consider for analysis necessarily limits the findings. Future research that extends the discussion by looking at SDL literature from other sources, such as proceedings of the International Self-Directed Learning Symposium, the *International Journal of Self-Directed Learning*, ERIC documents, dissertation abstracts, and other periodicals may provide additional insights.

OVERVIEW

One way to understand the state of the art of a field is to examine its literature. In the area of self-directed learning (SDL), there have been several efforts to study the literature. These have included content analyses of journals (Brockett, Stockdale, Fogerson, Cox, Canipe, Chuprina, Donaghy, & Chadwell, 2001), proceedings of the International Self-Directed Learning Symposium (Stockdale, Fogerson, Robinson, & Walker, 2003), dissertation abstracts (Canipe & Fogerson, 2004), and ERIC documents (Canipe, Fogerson, & Duffley-Renow, 2005). Such studies have provided information about the contributors to and content of the SDL literature.

Another way to gain insight from the literature is to examine patterns and trends relative to work that has been cited in that literature. A citation may be viewed as an institutional form of recognition and reward to others for their previous work. Citation analysis has often proved to be a "meaningful research tool" (Peritz, 1992, p. 448), making it possible to identify those publications and contributors whose work has most influenced subsequent writing on a topic (Garfield, 1979a). As such, citation analysis provides quantitative evidence about the relative influence of publications on a given field. Several years ago, Donaghy, Robinson, Wallace, Walker, and Brockett (2002) conducted a citation analysis of the articles identified in the study by Brockett et al. (2001). While the Donaghy et al. study provided some basic information about citation trends, the authors acknowledged concerns

with their data analysis and suggested that the findings be interpreted in a tentative way. Despite its limitations, the study demonstrated the potential value of citation analysis as a way of gaining insight into the literature of self-directed learning.

In the present study, we extend the work described in Brockett et al. (2001) and Donaghy et al. (2002) through a citation analysis of self-directed learning literature published in selected journals between 1980 and 2008. A review of 18 journals in the field of adult and continuing education yielded 158 articles (referred to as primary articles). The articles' reference sections were analyzed in order to uncover trends concerning the publications and contributors that have most influenced subsequent research on self-directed learning. The following questions guided this citation analysis:

1. What do the primary articles' publication and citation patterns reveal about the study of self-directed learning?
2. What can the patterns, frequency, and chronological distribution of citations among the 158 primary articles say about the study and students of self-directed learning?
3. What works and persons have been most influential?

DESIGN AND METHOD: EVOLUTION OF A RESEARCH PROJECT

Identification of Primary Articles

According to Redman, Manakyan, and Tanner (1999) "the first step in the citation analysis process is to select a base set of journals from which to collect the citations" (p. 170). Guided by expert opinion and a commitment to consensus-based decision making, members of the Self-Directed Learning Research Group at the University of Tennessee—Knoxville, under the direction of Dr. Ralph Brockett, chose a mix of 18 academic- and practitioner-oriented journals. These served as the starting point for the group's first research project—a content analysis (Brockett et al., 2001).

After eliminating journals that did not contain SDL articles, our base set included thirteen periodicals:

1. *Adult Basic Education and Literacy Journal* (this journal's title changed during the study period).
2. *Adult Education Research Conference Proceedings.*
3. *Adult Education Quarterly: A Journal of Research and Theory* (this journal's title changed during the study period).
4. *Adult Learning* (this journal's title changed during the study period).
5. *Advances in Developing Human Resources* (this journal was not included in the original content analysis effort by Brockett et al., 2001).
6. *Continuing Higher Education Review* (this journal's title changed during the study period).

7. *Educational Gerontology.*
8. *Human Resource Development Quarterly.*
9. *International Journal of Lifelong Education.*
10. *Journal of Continuing Education in Nursing.*
11. *Journal of Continuing Higher Education.*
12. *Mountain Plains Adult Education Association Journal.*
13. *T+D* (this journal's title changed during the study period).

A limitation to our study was the lack of exclusionary criteria for journals. In attempting to duplicate the work of Brockett et al. (2001), we chose to examine the same journal titles. Future citation analysis should incorporate the breadth of journal titles within the fields of adult education, general education, educational psychology, and human resources development and utilize various inclusion and exclusion criteria.

Brockett et al. (2001) reviewed all articles published in the base set of journals between 1980 and 1999. Teams of three researchers reviewed each issue of a journal for SDL articles. If group members agreed that an article was related to SDL, it was included in the content analysis. In total, Brockett et al. identified 127 SDL-related articles. Those 127 articles then became the primary articles for the citation analysis conducted by Donaghy et al. (2002).

The current study began where those two studies ended. Using the same journals as in the Brockett et al. (2001) study, the current authors reviewed volumes published from 2000 through 2008. For our study, we added one additional journal, *Advances in Developing Human Resources*, which began publication in 1999. The process for determining whether an article would be added to the list of SDL-related primary articles was similar to that used by Brockett et al., but differed due to the size of the respective research group (eight versus four people) and the change in focus (content analysis vs. citation analysis).

Two members of the research team reviewed the table of contents for each issue since 2000. If an article title suggested that it might have something to do with SDL or if the subject of the article could not be determined from the title alone, reviewers looked at its abstract or the article itself. If reviewers could not agree as to whether an article should be included or not, an additional member of the team reviewed the article and a majority vote determined whether it was included or excluded. Ultimately, this search added 31 articles related to SDL to the 127 found by Brockett et al. for a total of 158 primary articles in this study.

Identification and Storage of Citations

The next procedure in citation analysis involves the recording and storage of all references found within the primary articles. The authors of the current study inherited the Microsoft Excel® spreadsheet file used by Donaghy et al. (2002) that stored the bibliographic information of every citation in their 127 primary articles. These data were imported into a Microsoft Access® database constructed for this study.

The basic principle behind relational databases such as those built with Access® is that unique data are entered only once and then linked to other data via indexes. Eliminating redundancy reduces the likelihood that data entry errors will confound analysis. The exporting and importing process identified and allowed correction of numerous inconsistencies (e.g., copyright vs. printing dates used for the date of publication, titles with and without subtitles, authors' full names versus when initials were used) that would have made automated data analysis impossible. The research team performed exhaustive quality control checks—comparing printout to printout—to ensure faithful reproduction of the Donaghy et al. (2002) study data in the new Access® database. Following the import and clean up of the previous study's data, bibliographic information from the newly identified primary articles (2000-2008) and their citations were entered into the database.

The following principles guided the team throughout the data import and entry process:

1. Use first edition titles, unless the first edition was not cited elsewhere in the database. For the purposes of this study, we treated various editions and printings of a work as a single unit. For example, all 18 references to Houle's The Inquiring Mind (1961, 1988) were recorded in the database as the 1961 version regardless of the edition cited by the primary article.
2. Use both initials of an author whenever possible. It was impossible to be familiar with all of the 1738 authors referenced by the 158 primary articles. Recording as much information as possible about each author in the database reduced the likelihood of misattribution.
3. References to raw data or personal communication were not included. One goal of citation analysis is to identify the most influential works in a field so that future researchers can study them, and citations should enable readers to access source documents on their own. Therefore, this study dealt only with publicly accessible works.
4. Provide up-to-date publication information for items that were in-press at the time they were referenced. This principle led to a few counterintuitive instances in which the referenced work was dated later than the article that cited it. However, this principle is consistent with the public accessibility principle that led us to remove works for which publication information could not be found.

Adherence to these principles ensured consistent treatment for all publications and authors, and increased the likelihood that the analysis phase would produce usable results. As is illustrated in Figure 1, the database contained bibliographic information about the 158 primary articles and the 1599 distinct works they cited.

Data Preparation

The third study phase involved querying our data to produce reports answering the research questions noted earlier. Before this could be accomplished, research group members had to determine circumstances under which any references would be counted and to whom credit

Figure 1. Progress and results of data collection (steps 1 & 2).

would be given. Table 1 summarizes the three approaches considered while Table 3 later in the Findings section demonstrates the effect calculations have on rankings. Rather than using all three methods, the authors chose to use the most conservative definition (Times Cited—Self Citations Excluded) to govern citation counting.

Table 1. *Three Approaches Considered for Counting and Crediting a Reference*

Approach Name	*A Reference is Counted*	*Who Receives Credit*[1]
All Times Cited[2]	Every time it is cited by a primary article	Everyone associated with the publication (i.e., authors and editors)
Times Cited As Author[3]	Every time it is cited by a primary article	The publication's author(s) or, in the case of edited works, when the entire volume is referenced, the editor(s)
Times Cited With Self Citations Excluded[4]	If the referenced work and the primary article have no authors (or, in the case of edited works, editors) in common	The publication's author(s) or, in the case of edited works when the entire volume is referenced, the editor(s) as long as the referenced work and the primary article have no authors (editors) in common

[1]The table denotes elements of consideration for determining whether credit was given or not given to authors or editors

[2]This approach treats the contributions of authors and editors as equal, which could lead to the overstatement of an editors' contribution to the field.

[3]This approach differentiates levels of influence by focusing on those who did the writing whenever possible, but authors can increase impressions of influence in the field by simply padding the reference section of a primary article with works they have written.

[4]Assuming that citing oneself does not indicate influence of one person's work on another, but rather individual recall, this approach provides a measure of influence in a field that is less prone to bias. Furthermore, this metric is widely adopted by other citation analyses (Carol Tenopir, personal communication, September, 2009).

FINDINGS AND DISCUSSION

Primary Articles

The first part of our data analysis centers on information about the 158 primary articles from which citations were derived. Again, these included the articles originally identified by Brockett et al. (2001) along with the more recent articles included by this study's authors.

Publication Patterns

The base set of journals yielded 158 primary articles—an average of 5.64 per year—over the 28-year period. Between the years 1983-1991, SDL literature noticed a marked increase, with an average per year publication rate of 9.9 (see Figure 2). This level of publication has not been reached since then, although 2003 came close with a total of nine articles. Furthermore, in 2002, none of the journals investigated published articles on SDL. It is important to remember that these findings pertain to only the small group of journals included in the study and may not reflect an overall decline in the literature of SDL.

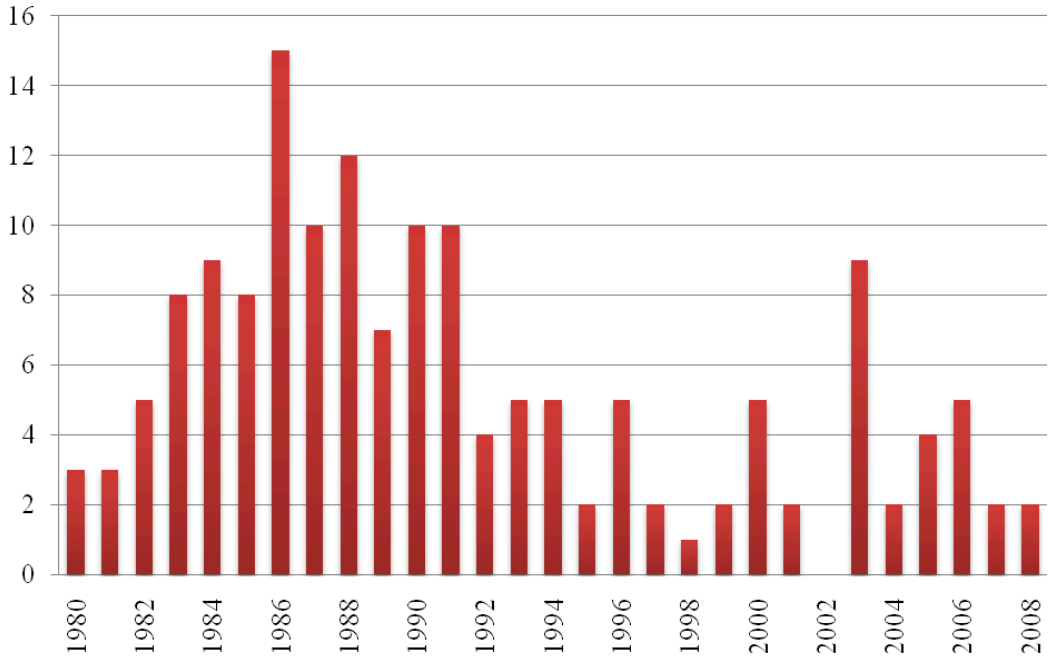

Figure 2. Number of primary articles published annually in journals studied by year.

The number of primary articles we found varied widely from journal to journal. Figure 3 focuses on the top six journals investigated and their support of SDL literature in terms of the number of articles each published over the 28-year period. The top sources for articles on SDL between 1980 and 2008 were the *Adult Education Research Conference Proceedings* (47), *Adult Education Quarterly* (34), *Journal of Continuing Education in Nursing* (20), *Adult Learning* (16), *Human Resource Development Quarterly* (10), and *International Journal of Lifelong Education* (10). Together, AERC and *Adult Education Quarterly* accounted for more than half of all the primary articles. Meanwhile, *Advances in Developing Human Resources*, *Continuing Higher Education Review*, and *Mountain Plains Adult Education Association Journal* published just one article each in 28 years.

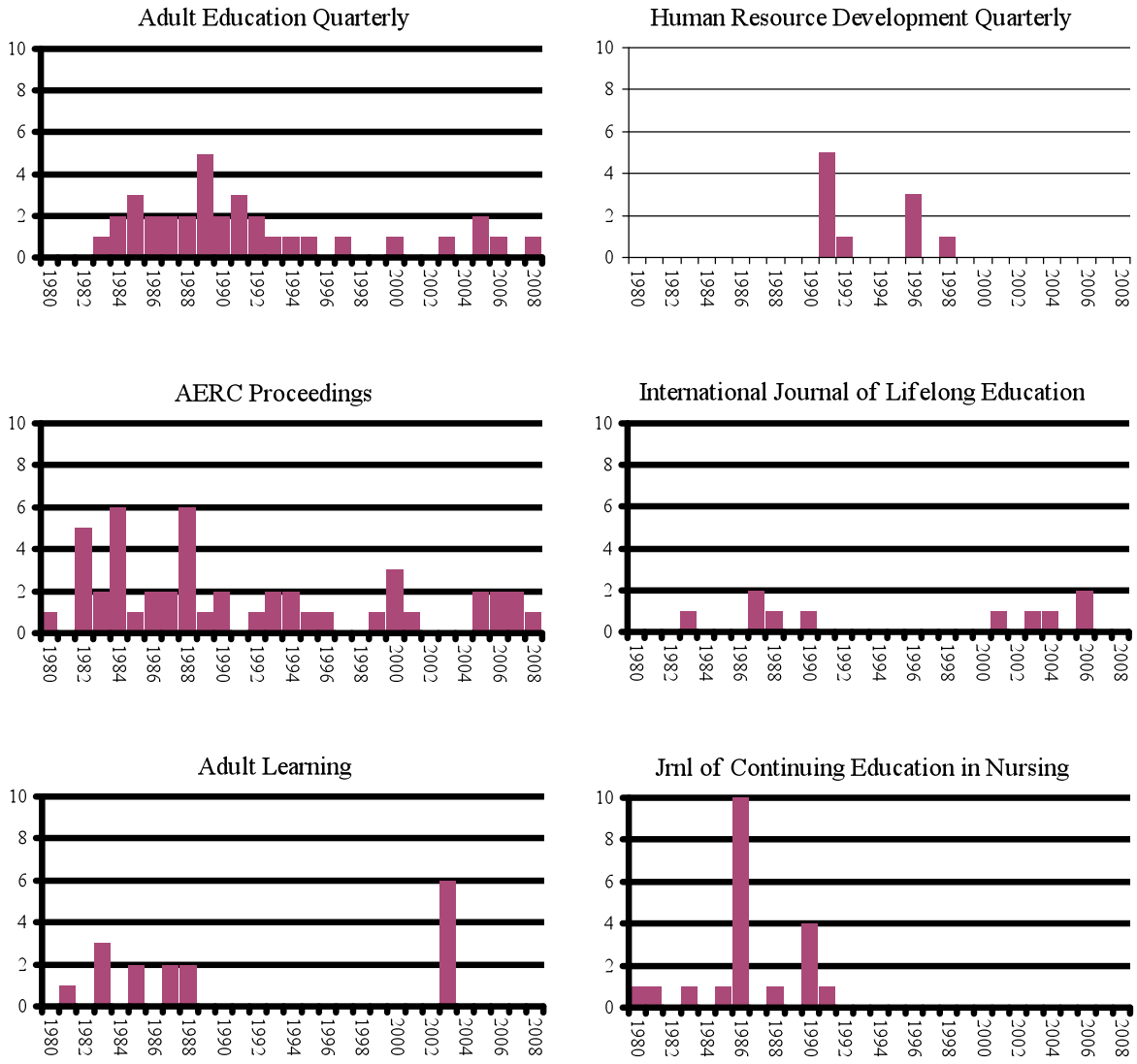

Figure 3. Number of primary articles published per year in the top six journals.

The consistency with which journals published articles on SDL also varied over time. As the six graphs depicted in Figure 3 demonstrate, some sources, like *Adult Education Quarterly* and the AERC Proceedings, disseminated works on self-direction more or less consistently throughout the study period. Dramatic spikes, on the other hand, characterized the publication patterns of *Adult Learning* and *Journal of Continuing Education in Nursing*. While the *Journal of Continuing Education in Nursing* published the majority of its articles on SDL in 1986, it has not published anything related to the topic since 1991. For the rest of the journals, interest in SDL research seemed to ebb and flow or show no pattern at all.

Citation Patterns

In terms of the citations included in the articles described above, here is how the primary articles were cited by each other. Of the 158 primary articles, only 68 were referenced by at least one other primary article. This study's dataset is neither large nor comprehensive enough to argue conclusively that these 68 publications have exerted more influence on the SDL knowledge base. However, these articles (especially the most cited among them) deserve special attention in the search for SDL's foundational documents. Following is a profile of these 68 articles:

- 26 were from *Adult Education Quarterly*
- 17 from the AERC Proceedings
- 8 from the *Journal of Continuing Education in Nursing*
- 5 from *Human Resource Development Quarterly*
- 5 from *Adult Learning*
- 3 from *International Journal of Lifelong Education*
- 2 from *Educational Gerontology*
- 1 from *Advances in Developing Human Resources*
- 1 from *T&D*

Nearly two-thirds of these articles (44) were published between 1980 and 1989, and over half (35) are cited more than once. Collectively, they were referenced a total of 208 times, but only four are among the 25 most cited publications in this study: (a) Brookfield (1984), which was cited by 20 primary articles in 13 different years; (b) Spear & Mocker (1984), cited 16 times in 11 years; (c) Brockett (1985), cited 11 times in eight years; and (d) Oddi (1986), cited 10 times in seven separate years. This finding is not surprising, as older publications would have more time to be cited than recent articles.

Analysis of Citations from the Primary Articles

The 158 primary articles reference 1,599 unique publications 2,509 times. A few articles (12) did not include any reference section and the article with the most references cited 84 of them. The average primary article cited 18.7 publications (the standard deviation = 15.7). The oldest work cited was published in 1762 (Rousseau, 1762) and the most recent in 2007, but most were produced between 1965 and 1995 (the mean = 1981; the mode = 1981; the median = 1982; and the standard deviation = 14 years). Figure 4 portrays the works published each year.

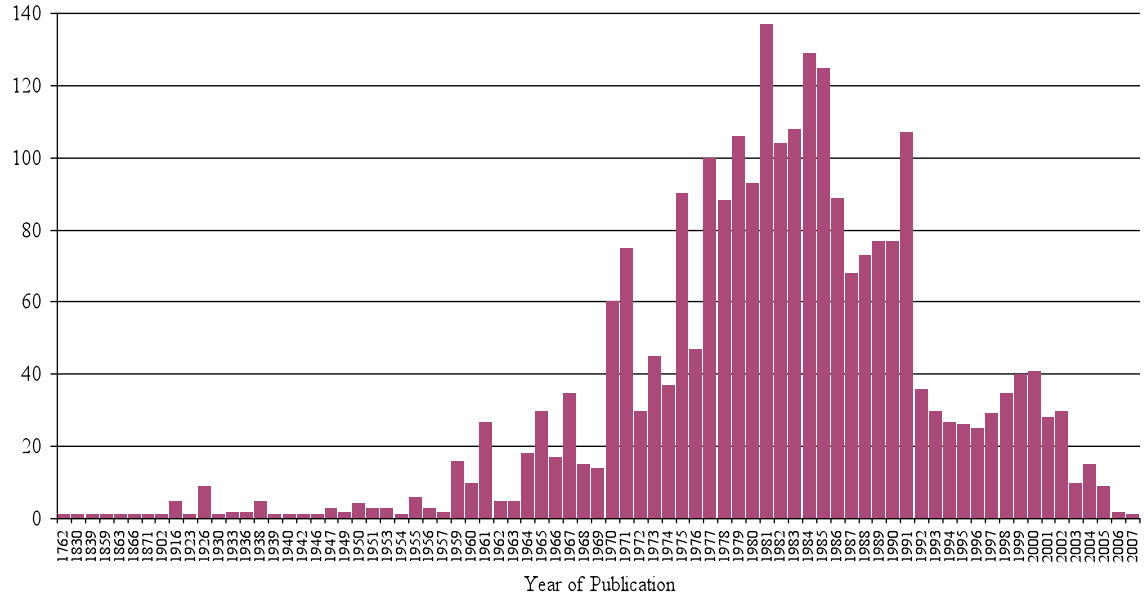

Figure 4. Number of cited works published per year.

The sections that follow provide more details about the most referenced of these works as well as the most cited authors and sources.

Most Frequently Cited Publications

Table 2 lists the 15 publications cited most often in this study, all published prior to 1992. Eight of the 15 are books, four are journal articles, and three are dissertations. Nine of the articles report original research, one is classified as commentary or critique, and five are works that provide a topic overview or summary.

Tough's (1971) book was the most frequently cited source, while two of Knowles' books (1970, 1975) were among the top four publications cited most often. Three of Brookfield's publications (1981, 1984, 1986) were among the 10 most frequently cited sources. Guglielmino's dissertation (1977) was the third most cited publication.

That Tough (1971) is the most cited publication by an overwhelming margin reinforces the arguments of scholars who point to *The Adult's Learning Projects* as the beginning of the growth in SDL research. Still others find the SDL's genesis in Houle (1961) or the Johnstone and Rivera (1965) book. The fact that both these latter works are found among the top ten cited books lends credence to these positions.

The 40 references to Guglielmino's dissertation (1977) testify to the prevalence of the SDLRS as a measurement tool in SDL research. Oddi (1986) authored the next most cited work dealing with a measurement tool; however this work was cited just 10 times, only one fourth as many times cited as Guglielmino's dissertation.

Table 2. *Fifteen Most Cited Publications* (some titles are abbreviated)

Rank	*Times Cited*	*Bibliographic Citation*
1	50	Tough (1971). *The adult's learning projects*
2	44	Knowles (1975). *Self-directed learning*
3	40	Guglielmino (1977). *SDL readiness scale*
4	25	Knowles (1970). *The modern practice of adult education*
5	20	Brookfield (1984). *Self-directed adult learning*
6	18	Houle (1961). *The inquiring mind*
7	16	Candy (1991). *Self-direction for lifelong learning*
7	16	Spear & Mocker (1984). *The organizing circumstance*
9	15	Brockett & Hiemstra (1991). *Self-direction in adult learning*
9	15	Johnstone & Rivera (1965). *Volunteers for learning*
9	15	Hassan (1981). *An investigation of learning projects*
12	14	Brookfield (1986). *Understanding/facilitating adult learning*
12	14	Sabbaghian (1979). *Adult self-directedness and self-concept*
14	13	Brookfield (1981). *Independent adult learning*
14	13	Tough (1978). *Major learning efforts*

Most Frequently Cited Authors

A total of 1,738 authors and editors were associated with the 1,599 works cited in this study. Table 3 lists the 25 contributors cited most frequently in the 158 primary articles. It also illustrates the outcome of the three methods for calculating credit described earlier for Table 1 where the total number of citations as well as ranking can be affected. For instance, overall ranking, which includes self-citations and all editor roles, yields the top five authors in descending order as Brookfield, Long, Knowles, Tough, and Brockett. However, excluding self-citations and only giving credit to authors and not editor roles changes the top five contributors to Brookfield, Knowles, Tough, Brockett, and Guglielmino.

Table 3 lists some prolific authors. For example, the 158 primary articles reference 23 different publications by Brookfield, 31 by Long, 19 by Guglielmino, and 17 each by Houle and Brockett. However, number of publications is not the only factor affecting the frequency with which an author is cited and, thus, a person's ranking among the top 25 most cited authors. For example, 11th ranked Spear (29 citations) and 13th ranked Mocker (27 citations) are associated with just four and three publications, respectively. Similarly, Hassan, Johnstone, and Rivera, cited 15 times each and tied for 23rd most cited, have just one publication cited in this study. The Pearson r correlation coefficient for the relationship between the number of times an author from the top 25 list was cited and the number of referenced publications written by that author was 0.72, meaning that the variation in number of publications authored accounts for about 52% ($r^2 = 0.5184$) of the variance in number of citations. Clearly, the number of publications increases an author's chances of

being considered influential in the field, but the relative importance of a publication also factors in determining the amount of influence an individual exerts.

Table 3. *Twenty-Five Most Cited Authors and Illustration of Outcome of Calculation Credit*

	All Times Cited		*Times Cited as Author*		*Times Cited, Self-Citations Excluded*	
Author Name	*Rank*	*Times Cited*	*Rank*	*Times Cited*	*Rank*	*Times Cited*
Brookfield, S. D.	1	138	1	116	1	102
Long, H. B.	2	130	5	80	6	56
Knowles, M. S.	3	98	2	96	2	96
Tough, A. M.	4	95	3	95	3	94
Brockett, R. G.	5	94	4	92	4	66
Guglielmino, L. M.	6	76	6	76	4	66
Hiemstra, R.	7	56	7	53	8	42
Caffarella, R. S.	8	53	7	53	9	36
Houle, C. O.	9	47	9	47	7	47
Merriam, S. B.	10	42	11	30	14	24
Mezirow, J.	11	35	10	32	10	32
Spear, G. E.	12	29	12	29	11	29
Candy, P. C.	13	28	13	28	12	28
Mocker, D. W.	14	27	14	27	13	27
Smith, R. M.	15	26	20	18	18	17
Penland, P. R.	16	24	15	24	14	24
Oddi, L. F.	17	23	16	23	18	17
Mourad, S. A.	18	19	17	19	16	19
Kasworm, C. E.	19	19	17	19	18	17
Agyekum, S. K.	20	19	17	19	-	9
Freire, P.	21	18	20	18	17	18
Guglielmino, P. J.	22	18	20	18	-	10
Donaghy, R.C.	23	18	20	18	-	3
Garrison, D. R.	24	17	24	17	-	9
Darkenwald, G. G.	25	17	-	15	-	14

The list of the 25 most cited authors from this study provides some important insights about the nature of the authors in SDL. Most of those on the list have done research on SDL at one point in their careers. Some, like Brookfield, Caffarella, Houle, Knowles, Merriam, and Mezirow are better known (or at least as well known) for contributions they have made to other areas of the adult and continuing education literature. Meanwhile, Brockett, Candy, Gibbons, Guglielmino, Hiemstra, and Long are primarily identified through their work in SDL.

A few of the 25 most cited authors are or were not associated with SDL at all. For example, the presence of Freire, known for his work in critical pedagogy, and the humanist psychologist Rogers, hints at the content, direction, and emphases of SDL research. In fact, it is telling that Brookfield is the most cited author in this study for he has often been highly critical of SDL research (e.g., 1984). In addition to Freire and Rogers, other authors not usually directly associated with SDL research or adult education who were cited more than 10 times in this citation analysis include Bandura, Cross, Dewey, and Erikson.

Most Frequently Cited Sources for SDL Publications

Though book chapters, conference papers or presentations, and journal articles are usually cited as individual publications, they can be conceived as and are sometimes referenced as a single, collected work. In this study, we analyzed three types of compilations, conference proceedings, edited works, and journals which we referred to as source publications. Though always well informed and well intentioned, the choice of category for some source publications was nonetheless arbitrary. For example, individual volumes in the *New Directions for Adult and Continuing Education* series were considered separate edited works; however, the entire series could have been treated as a single, continuous journal. Similarly, the works by Long and Associates (1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, and 2002) are often thought of as conference proceedings, since they are comprised of chapters which were presented in earlier forms at the International Self-Directed Learning Symposium. For purposes of this study, however, the collections by Long and Associates were labeled as edited works for the following reasons:

1. Chapter authors had the opportunity to significantly revise the material prior to publication.
2. The collections themselves make no mention of the Symposium in their titles or elsewhere.
3. The volumes do not necessarily represent all of the presentations made at a given Symposium (publication was neither required nor guaranteed to Symposium presenters).

Obviously, categorization choices such as these could have a major effect on the analysis and interpretation of data in this study, so known instances in which this occurred are noted below.

In total, this citation analysis study included the following: (a) More than 230 journals and other serials whose articles were cited 801 times; (b) eighteen conferences, meetings, and associations which were cited 111 times; and (c) at least 184 edited works that were cited 319 times. The most cited journals and edited works are listed in Tables 4 and 5, respectively.

Table 4. *Journals Cited Five or More Times*

Rank	*Times Cited*	*Journal*
1	183	*Adult Education Quarterly: A Journal of Research and Theory*
2	63	*Adult Education*
3	48	*Journal of Continuing Education in Nursing*
4	23	*Adult Learning (formerly Lifelong Learning)*
5	16	*Studies in Adult Education*
6	12	*Human Resource Development Quarterly*
7	11	*Journal of Humanistic Psychology*
8	10	*Higher Education*
8	10	*Psychological Reports*
10	9	*International Journal of Lifelong Education*
11	8	*Canadian Journal for the Study of Adult Education*
11	8	*Psychological Bulletin*
11	8	*Journal of Gerontology*
14	7	*American Psychologist*
14	7	*Educational Gerontology*
16	6	*Studies in the Education of Adults*
16	6	*Journal of Higher Education*
16	6	*Review of Educational Research*
16	6	*Psychological Monographs*
16	6	*T&D*
16	6	*Psychological Review*
16	6	*Nurse Educator*
16	6	*Nursing Outlook*
24	5	*Innovative Higher Education*
24	5	*Harvard Educational Review*
24	5	*Journal of Educational Psychology*
24	5	*Nursing Research*
24	5	*Self-Directed Learning and Health Professionals*

The *Adult Education Quarterly*, cited 183 times, and the *Adult Education Research Conference Proceedings*, cited 50 times, have played significant roles in the dissemination, evolution, and continuation of SDL research (see Figures 5 and 6). Not only are these sources cited most frequently in their categories, their support has been more or less continuous across time. Each was cited at least once in most of the years covered by this study.

Table 5. *Edited Works Cited Five or More Times* (some titles are abbreviated)

Rank	*Times Cited*	*Edited Work*
1	29	Brookfield (1985). *Self-directed learning: From theory to practice*
2	17	Long & Associates (1988). *Self-directed Learning: Application and theory*
3	12	Straka (2000). *Conceptions of self-directed learning*
4	9	Long & Associates (1989). *Self-directed learning: Emerging theory*
5	7	Confessore & Confessore (1992). *Guideposts to self-directed learning*
6	6	Smith (1983). *Helping adults learn how to learn*
7	5	Boud (1981). *Developing student autonomy in learning*
7	5	Chickering & Associates (1981). *The Modern American College*
7	5	Keeton & Associates (1976). *Experiential learning*
7	5	Long & Associates (1990). *Advances in research and practice*
7	5	Merriam (2001). *The new update on adult learning theory*
7	5	Mezirow & Associates (1990). *Fostering critical reflection in adulthood*

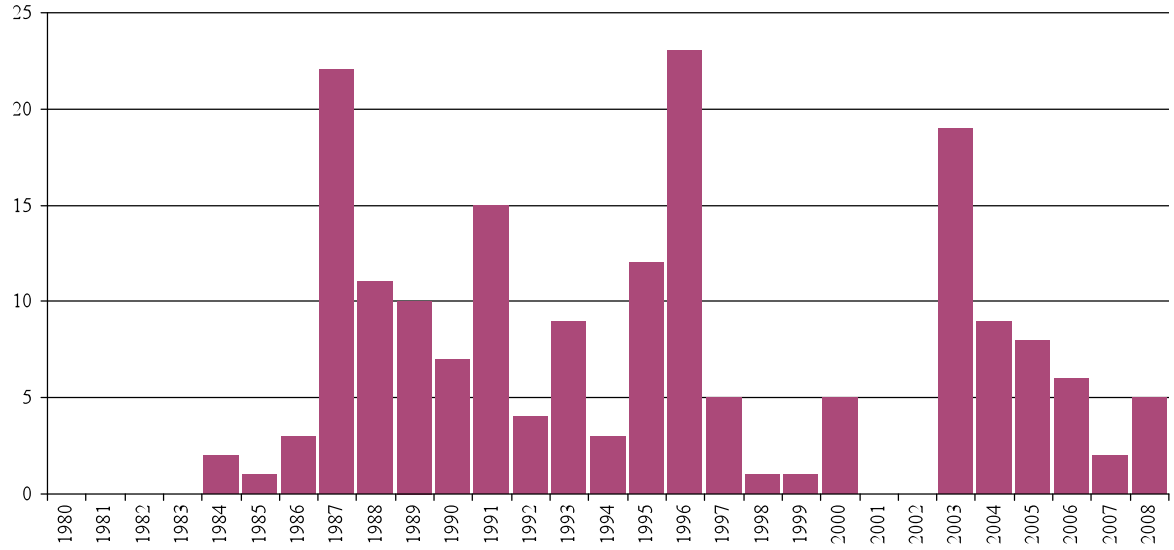

Figure 5. Number of times *Adult Education Quarterly* was cited each year.

Anomalies in the Most Frequently Cited Sources for SDL Publications

In considering the results, we believe it is important to add three caveats. First, the *New Directions in Adult and Continuing Education* series published by Jossey-Bass has also played an important role in the dissemination, evolution, and continuation of SDL research. Had this series been treated as a journal in our analysis—we chose to treat each individual volume as an edited work instead—with a total of 49 citations, *New Directions* would have

ranked third, just ahead of the *Journal of Continuing Education in Nursing*. Not only is the series represented in the top 10 most cited edited works by Brookfield (1985), Smith (1983), and Merriam (1993, 2001), but eight other books from this series (Brockett, 1987; Cahoon, 1998; Cavaliere & Sgroi, 1992; Darkenwald & Larsen, 1980; Fisher & Wolf, 1998; Flannery, 1993; Hiemstra & Brockett, 1994; and Rowden, 1996) were also cited in the study. Interestingly, however, the other *New Directions* book that was specifically dedicated to SDL issues (Hiemstra & Brockett, 1994) was only cited once.

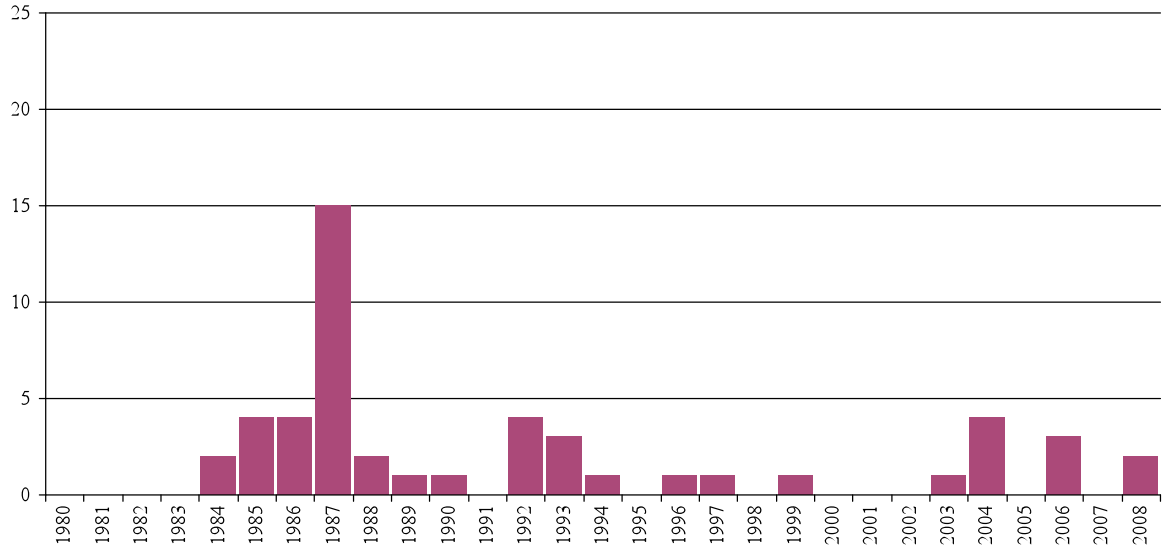

Figure 6. Number of times *AERC Proceedings* were cited each year.

Our second caveat is that the International Society for Self-Directed Learning (ISSDL), the organization that sponsors the International Self-Directed Learning Symposium (ISDLS) each year, also exerts substantial influence; but as with the *New Directions* data, this may not be readily apparent. Table 6 shows that presentations made at the ISDLS were cited 12 times, making it the third ranked conference in this study. It is less clear, however, that two of the publications listed among the top 10 edited works (Long & Associates, 1988, 1989) are also products, essentially proceedings published post-conference, of the ISDLS. In addition, ten more ISDLS-inspired volumes (Long & Associates, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 2002) were cited by at least one primary article. Taken together, these compilations were cited a total of 48 times.

Oddly, none of the primary articles cited an article from the *International Journal of Self-Directed Learning*, which is also published by the ISSDL. Possible reasons include the fact that the journal is so new, having begun publication in 2004, that it is not indexed in article databases, or because it only appears as a PDF document from the sdlglobal.com website, a condition that restricts search engines from easily locating articles online.

Table 6. *Conferences Referenced Five or More Times*

Rank	*Times Cited*	*Conference Name*
1	50	Adult Education Research Conference (AERC) Proceedings
2	14	Lifelong Learning Research Conference
3	12	International Self-Directed Learning Symposium (ISDLS)
4	10	American Educational Research Association (AERA) Conference
5	5	American Association of Adult and Continuing Education/Commission of Professors of Adult Education (AAACE/CPAE) Conference

Our final caveat pertains to the collection of essays edited by Straka (2000). Although it is considerably newer than the other edited works that were cited five or more times, the book seems to have become central to the discipline since its publication. Six of the 31 primary articles that have been published since 2000 referenced chapters from the work 12 times.

Additional Observations

The list of journals cited five or more times (Table 4) includes titles from multiple academic domains, including business (human resource development), education, gerontology, higher education, nursing, and psychology. It is by no means clear, however, that all of these fields are contributing to developments in SDL. We have observed that the authors of the primary articles cited other works for at least three different reasons: (a) because the cited work has influenced the author's thinking about SDL, (b) because the cited work has influenced the author's thinking about the primary article's main topic (e.g., aging, business, nursing), or (c) because the cited work provides information about how to conduct a particular kind of research (e.g., a handbook of qualitative methods). In other words, the high number of references to articles in *Nursing Outlook* more likely reflects the fact that many of the primary articles come from nursing journals rather than indicating *Nursing Outlook's* contribution to the SDL knowledge base. For other journals, like *Higher Education* and *Psychological Reports*, it is more difficult to speculate on the reasons the journal was cited so many times.

Ultimately, a much closer, citation-by-citation review is required to differentiate those journals that are contributing information about SDL from those that are cited for other reasons. Such a meticulous review would have the added benefit of identifying periodicals to add to the base set of journals for future iterations of this project.

CONCLUSION AND FUTURE RESEARCH

We are confident that the findings reported above support our claim about the usefulness of citation analysis as a way of gaining insight into a body of literature. While it comes as no real surprise to scholars in our field that works by Brookfield, Long, Knowles, and Tough have had a clear influence on subsequent scholarship, or that Guglielmino's SDLRS has

been a cornerstone of research on SDL for nearly 35 years, our findings offer support for the relative influence of these and other works.

At the same time, we recognize that citation analysis is fraught with concerns that limit its effectiveness. Criticisms regarding the validity of citation counts include the influence of negative reasons for citations, the use of self-citations, and citations from methodological reports. We believe it is important to consider these potential limitations.

According to Carter (1974), Garfield (1979b), and Meadows (1974), high citation counts due to negative reasons, such as criticisms, incorrect results, or inferior quality are rare and unlikely to distort frequency. Furthermore, criticism of another's work may clarify, focus, and stimulate discussion leading to supplementary knowledge creation in that field. Citation statistics are not meant to gauge how often an author was correct but rather as a "very general measure of the level of contribution an individual makes" (Garfield, 1979b, p. 362). Even negative citations can contribute to the body of knowledge. As demonstrated in this study, Brookfield, usually a critic of SDL, was the most cited author regardless of the method used for the citation count.

Another criticism of this type of analysis is that self-citations artificially inflate citation counts, accounting for at least 10% of all citations (Garfield, 1979b). However, since many authors tend to build on their own work, a high self-citation count may indicate nothing more than an author's specialty within a field. Given that many journals, including those in this study, are peer reviewed to control for quality, a high self-citation count may simply indicate that the author has made a significant contribution (Garfield, 1979b). We attempted to overcome this criticism by eliminating self-citations by authors in our citation counts (see Table 3 above for more information). In the present study the top six authors for all times cited remained consistent even when excluding self-citations, although the order changed.

Garfield (1979b) suggests that citation counts do not measure importance or impact but rather the utility of a publication. In fact, Garfield argues that a "highly cited work is one that has been found to be useful by a relatively large number of people" (p. 363). Thus, citation analysis provides quantitative evidence about the relative influence of publications on a given field. However, the impact and importance of citations can be viewed from a variety of disciplines and perspectives. For example, Garfield focuses on citations as indicators of the quantity of information use, Zuckerman (1987) sees citations as surrogates of intellectual influence, and Gilbert (1977) indicates they represent authoritativeness or act as tools of persuasion. Moed (2005) discusses the disciplinary approaches to citation analysis in the book *Citation Analysis in Research Evaluation*. These disciplinary approaches include physical, sociological, psychological, historical, and information-and-communication-scientific (Moed, 2005). Thus, a true investigation into the utility, influence, importance, or impact of scientific work within a field would require more investigation than our current study. In recognizing the limits of our study, we developed several areas for future study.

1. One area centers around the need to better understand the idea of assimilation. In other words, when an author's work becomes so integrated into the field that other authors neglect to cite it, it could be considered assimilated. According to Garfield (1979b), "when this happens, the long-term citation count of the scientist responsible for the work may fail to reflect the full magnitude of his [*sic*] contribution" (p. 365).
2. Because most of the journals we investigated in this study do not appear in the *Journal Citation Reports*®, we could not adequately compare our results to the relative standing of journals in the fields of adult education, educational psychology, or general education. Another future study would address a question regarding the standing of certain journals in the field of SDL.
3. We were also curious about how pervasive SDL has become in other disciplines. We found several leads into the areas of business and nursing, but would like to look at the impact SDL has had beyond our own discipline.
4. Finally, we would like to address the idea of longevity of publications or authors. We remain curious about the distinctions between an author who was cited more times in a shorter period from one that was cited less often but over a longer period and how citation counts might inform or modify the longevity of an author or publication.

At the close of the first decade of the 21st Century, we believe that the current state of the research in self-directed learning is strong. The International Self-Directed Learning Symposium has been in existence for a quarter of a century and the *International Journal of Self-Directed Learning* for six years. According to Long (2010), current research in SDL can be characterized by five major directions: (a) measurement as an individual variable; (b) within institutional settings; (c) via electronic media; (d) in relation to notions such as self-efficacy, self-esteem, and performance; and (e) research on "volition, conation, and autonomy" (p. 31).

In terms of the future, Brockett (2009) suggests that "although we have made important inroads toward understanding the phenomenon of SDL, many important questions remain" (p. 37). He identifies several possible avenues for future research that would encourage a closer look at the foundations of self-direction, create new ways to measure self-directedness, look at SDL through different research methods including phenomenology and critical theory, build bridges across different fields to understand SDL in a broader context, and encourage future generations of scholars to continue focusing on SDL.

After nearly four decades of scholarship, much is known about the phenomenon of SDL. Yet there is still much to learn. Self-directed learning is one of the very few areas of research in the adult education literature that has been studied in a systematic and sustained way. For this reason, it is important that this area of inquiry continue to develop in the future. The findings of this study provide evidence that there are key scholars and publications that can serve as a foundation for future scholarship.

In conclusion, studying SDL literature is a useful way of understanding the state-of-the-art of this field. This study provides another look at the literature and presents information about sources and contributors that have influenced the development of the SDL knowledge base. The process that we, and our predecessors, used to determine which items were considered for analysis necessarily limits the findings. Future research that extends the discussion by looking at SDL literature from other sources, such as proceedings of the International Self-Directed Learning Symposium, ERIC documents, dissertation abstracts, and other periodicals (most notably the recently established *International Journal of Self-Directed Learning*), may provide additional insights. Nonetheless, we are confident that the analysis presented in this study is reflective of many of the major authors in SDL literature.

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