

**Measuring Tendencies Toward Self-Directedness of Live
Production Managers and Service Technicians
in the Alabama Poultry Industry**

by

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Abstract

The driving force behind any company's long term success is its ability for its employees to adapt to change. The driving force behind the success of any business is the people (Campbell, 2010). Improving company profit margins through the decrease of input costs is a limited resource. Long term company success and growth are reliant on the quality of the employees and their ability to adapt to change and learn new technologies. Traditionally workforce training is conducted formally in classrooms. Modern workforce training trends are focusing more on self-directed programs that allow individual employees to be in control of their training impact. Creating and implementing effective self-directed adult education training programs are key components of workforce training. Research on this topic is relatively limited in the field of agriculture and more specifically in the live production sector of the poultry industry. Training programs are offered to these employees on farms and in classrooms; however, the effectiveness of these training seminars is not measured, nor is the self-directed tendencies of the employees.

This study focuses on assessing the tendency of live production managers and service technicians in the Alabama poultry industry toward self-directed learning readiness. The conclusions of this research will be used to give company executives, educators, and trainers the necessary information required to tailor educational programs that will be more suitable and effective for these adult learners. Key components of measuring self-directed tendencies and readiness lie in their motivation and self-regulation, cognitive strategies and social environmental elements at work.

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Chapter 1

Introduction

During the 1930s the Great Depression in the United States, poultry meat was considered a premium compared to beef or pork and was primarily a by-product of table egg production (J. Donald, personal communication, May 5, 2010). Herbert Hoover campaigned on a promise of prosperity with the slogan of a chicken in every pot and a car in every garage (Mayer, 1967). Prior to the 1950's, the poultry industry in the United States was fragmented with feed mills, processing plants, hatcheries and independent chicken farmers. Each component was a profit center and cannibalized the other over price. In the 1950's poultry companies experimented with vertical integration and discovered that it was significantly more efficient and cost effective than the independent method of conducting business (J. Donald, personal communication, May 5, 2010). Since the fifties, the poultry industry has become so competitive that profit margins are now measured to the ten thousandth of a cent (Campbell, 2010).

Dwindling profit margins in the United States make foreign production of poultry meat more viable and threatens production of United States meat to be transferred to other countries. Approximately 75,000 people rely on poultry production in the state of Alabama for income (Hall, 2010). The United States relies on foreign imports, such as textiles and other material goods. In addressing the importance of the poultry industry in the United States, Harvey (2009) wrote:

The United States is the world's largest poultry producer and the second-largest egg producer and exporter of poultry meat. United States poultry meat production totals over

43 billion pounds annually; over four-fifths is broiler meat, most of the remainder is turkey meat, and a small fraction is other chicken meat. The total farm value of U.S. poultry production exceeds \$20 billion. Broiler production accounts for the majority of this value, followed by eggs, turkey, and other chicken. (p. 1)

In order for United States industries to remain competitive, new methods and technologies must be acquired and implemented to increase the productivity and efficiency in all functional and technical areas. Training the workforce with more efficient and streamlined production methods, as well as new ideas and technology, requires the trainers to become better acquainted with employee needs. One method that is increasingly used by many companies is self-directed learning. “Self-directed learning is an idea that, at least in the world of continuing education, has come of age” (Brookfield, 1985, p. 1). Major improvements can be made in non-traditional educational and training programs in industry and in more formal educational settings in agriculture, especially in poultry. Increasing efficiency through the education and training of live production poultry industry workforce will ensure that viable poultry production remain profitable in the United States (Campbell, 2010).

Statement of Problem

While literature in self-directed learning in the workforce is increasing, there is a lack of studies in the field of agricultural settings. Developing critical knowledge of motivation and development in self-directedness allows educators and trainers to better design and disseminate programs for employees to learn best practices and implement new technologies. Currently self-directed studies had been conducted in manufacturing, but not in the poultry industry. There is need for further research to be conducted in the agricultural environments to further study employees’ self-directedness. This study provided insight into the differences in self-

directedness and levels of self-directedness as it pertains to the employees in the poultry industry and other agriculture-based working/learning environments.

Purpose of Study

The purpose of this study was to gain a better understanding of self-directed learning traits in the Alabama live production poultry industry. The data retrieved from this study will aid educators and trainer's ability to create more effective educational training programs in the poultry industry. By examining differences in self-directedness, education, position type and years of service, training programs can be better designed to fit the needs of the poultry industry. Information learned about self-directed learning traits in the poultry industry will enable workforce education and training programs to be tailored to fit those needs. Training programs in the poultry industry and other agricultural based programs benefit from this study to better accommodate these employees and sustain agriculture-based production through education in the United States.

Research Questions

The following research questions guided this study:

1. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on position type?
2. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on level of education obtained?

3. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on years of employment?

Significance of Study

There is limited research concerning self-directedness in the live production sector of the poultry industry. This current research provided useful information to company executives, educators, and trainers in the poultry industry to help in designing more effective learning programs for their employees. Additionally, this study may improve the level of job performance and production to ensure the long-term economic viability of the poultry industry in the United States. This agricultural based study contributed to the understanding of employees and contributed to adult education knowledge and non-traditional educational settings.

Limitations/Delimitations

The participants in this survey were integrated live poultry production managers and service technician employees in the state of Alabama and surrounding areas. This extremely competitive industry is an agricultural based working environment managing the rearing of poultry on a large scale. Job requirements and competencies in agricultural are uncommon compared to other non-agricultural based working/learning environments. Findings from this particular research may not be applicable to other environments of agricultural based groups outside of this geographical area and setting.

Truthfulness of the participants in this study was a concern. Self-evaluation may have errors because individuals may not accurately view themselves. Self-directedness may not be understood accurately between subjects and, therefore, incorrect assessments may have occurred.

Definition of Terms

Adult – “Biologically: We become adults when we reach the age at which we can reproduce for example in early adolescence. Legally: We become adults when we reach the age at which the law says we can vote, get a driver’s license, marry without consent, and the like. Socially: We become adults when we start performing adult roles, such as the role of full-time worker, spouse, parent, voting citizen, and the like. Psychologically: We become adults when we arrive at a self-concept of being responsible for our own lives, of being self-directing” (Knowles, Holton & Swanson, 2005, p. 64).

Manager – A person typically employed by an integrated poultry company with the responsibility of managing the service technicians (Lien, 2003).

Non-Traditional Student – This is an adult student, age 25 or older, who has returned to school either part or full time. While attending school non-traditional students maintain additional adult life responsibilities such as employment, family and financial commitments (Ely, 1997).

SALT – Survey of Adult Learning Traits – Instrument used to collect data on the level of performance of a person based on a survey with a series of questions based on self-directedness (Hogg, 2008).

Service Technician – A person typically employed by an integrated poultry company, under the manager, with responsibility of managing the live production of poultry through contract poultry growers in the United States (Lien, 2003).

Self-Directed Learning (SDL) – “...a process in which individuals take the initiative without the help of others in diagnosing their learning needs, formulating goals, identifying human and material resources, and evaluating learning outcomes” (Knowles, 1975, p. 18).

Vertically Integrated Poultry Company – A integrated poultry company is a group of smaller specialized organizations joined together that perform or control each production phase in a broad process of operations that are synchronized to efficiently produce an end product of poultry meat. These operations are unified under one company’s management (Lien, 2003).

Organization of the Study

This research began with Chapter 1 organized by addressing the statement of the problem, purpose of the research, research questions, significance of the study, limitations and delimitations of the study, definition of the terms, and organization of the study. Chapter 2 was the literature review of self-directedness learning, survey of self-directed tendencies, and a descriptions of the instrument used in this research. Chapter 3 was the methods used or procedure of this research study including research design, questions, samples, the instrumentation, collection of data, and the final analysis of data collected from participants in the survey. Chapter 4 discussed the analysis of the collected data, the statistical analysis and its interpretations and participant demographics. Chapter 5 addressed the research including findings, the data conclusions, analysis of implications, and any further recommendations for future research on self-directedness of participants in the live production or other agricultural based employees.

Summary

Raising the standard of performance and increased efficiencies will sustain or increase profit margins for United States based companies as well as retain essential jobs in the United States from becoming outsourced to other countries. The industry’s ability to learn new technologies is imperative and more emphasis must be placed on effectively training the workforce as new technologies arise. Only through effective, rapid, and thorough education of

these new technologies can the live production poultry industry survive in the global market.

Learning the self-directed tendencies of live production poultry managers and service technicians will aid in the development of more effective training programs on improved technologies of poultry production in the United States. Improved self-directed training programs could be an effective method of training these employees through interactive television, online training, and other distance training-oriented programs.

Chapter 2 Review of Literature

Introduction

“Every man who rises above the common level has received two educations: the first from his teachers; the second, more personal and important, from himself” (Gibbon, 1923, p. 66).

One essential aspect of becoming mature is the requirement to develop the ability to take increasing responsibility of our own lives or to become more self-directing (Knowles, 1975).

Malcolm Knowles (1970) portrayed self-directed learners as needing to know how learning will affect or have an impact on their lives in order for them to be motivated to learn new material.

Adults are more interested in learning things that have the potential to improve quality of life.

Warmbrod (1972) stated:

Most practitioners in agricultural education accept without question the necessity for adult education in agriculture. Few teachers or county agents will argue with statements like the following:

1. To remain a productive citizen, an individual must be engaged actively in continuous learning throughout his lifetime.
2. The teacher’s degree of commitment to adult education determines his effectiveness in developing relevant and meaningful programs.
3. Much of the success or failure in education depends upon the quality of teaching; adult education is no exception.

4. Adults will participate in educational programs if the programs are designed to meet their needs to improve their businesses or to be more successful citizens.
5. Most successful programs make use of planning or advisory committees to meet the interests and needs of those being served.
6. Generally the adult program in agriculture is not the teacher's program; it is shared with the students. (p. vii)

The goal of education and training is to bridge the gap between current knowledge and needed skills. This can be done by teaching adults to become better self-directed learners. Knowles (1975) explains that as adults grow and mature there becomes a need to be independent for parental control initially and then for control by teachers and other adults. Knowles (1975) believed that SDL might be the best way to learn.

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Agricultural Education History

Major advances in adult educational programs in agricultural have occurred in the past 150 years in the United States. One of the most important agricultural legislation bills passed was the Morrill Act of 1862, which established Land-Grant Colleges and United States Department of Agriculture, to give easier access to higher education in mechanical arts and agricultural research. This marked the beginning of extension programs in the United States. Bender, McCormick, Woodin, Cunningham, and Wolf (1972) found the formation of these agricultural support programs was designed to improve the social and economic conditions for rural population in the United States. The Hatch Act of 1887 established Agricultural Experiment Stations to provide more research and education in agriculture. These experiment stations linked scientific data with real world solutions to farming problems. "The Smith-Lever Act of 1914 established the Cooperative Extension Service with a cooperative relationship between federal,

state and local governments. Later the Smith-Hughes Act of 1917 provided vocational educational programs in agriculture in the public schools” (Bender et al., 1972, p. 3). The Smith-Hughes Act of 1917 was a specific response to the need for adult education in agriculture.

The Cooperative Extension System (CES) is listed as one of Cyril Houle’s major categories of Educational Design Situations as an institution. Houle (1961) describes CES:

For almost three-quarters of a century, Americans who live in rural areas and small towns have been familiar with what they usually called extension. In its service, the program has been massive in size and pervasive in spread, reaching virtually all of the nation’s 3,000 rural counties; but it is intensely local in both governance and service. (p. 81)

Many states have extension programs that support what each state believes are essential to its enrichment and serve the needs of the local population. The extension members deliver university-based research information from the land-grant universities and implement the information into practical uses that help improve the lives of the people in the community. The CES in Alabama is named the Alabama Cooperative Extension System (ACES). ACES offices exist in each of Alabama’s 67 counties and offer educational programs to the people living in and surrounding communities (ACES, 2011). The county offices provide educational resources in a broad range of subjects common to the area needs. Some examples of extension programs that are popular in the state of Alabama are: agriculture, forestry, wildlife, natural resources, urban affairs, new nontraditional programs, family and consumer sciences, economic and community development, and 4-H youth development.

ACES traditionally provides publications, but more recently made outreach efforts such as, online services and videoconference sites where additional and more specialized information can be accessed. There are 44 possible video conferencing sites in Alabama where clients

participate in educational and certification programs without the inconvenience of traveling long distances. ACES programs have information accessible at the county office, on the internet and are partnered with many other Extension Systems to form an extremely diverse resource base of knowledge and educational material. The ACES mission statement is, "...the primary outreach organization for the land-grant mission of Alabama A&M University and Auburn University, delivers research-based educational programs that enable people to improve their quality of life and economic well-being" (ACES, 2011, p. 1). The extension system in Alabama is rich in heritage and famous for major historical educational accomplishments for over 100 years. For example, Mr. Tom Campbell became the nation's first black extension agent at the Tuskegee Institute in Alabama (ACES, 2011). In 1915, the Cooperative Extension began assisting minority farmers in nine Alabama counties and served 28 counties by 1920. In 1995, ACES was reorganized and became the first state to combine the Extension programs from its 1862 and 1890 land-grant universities, Auburn and Alabama A&M, as well as Tuskegee University were merged into a unified statewide system. ACES was founded by the very definition of adult education and a great model of an early form of organized adult education. Houle (1996) stated, "few would doubt that extension has played an important part in this vital transformation of American life. It's history should give hope to those who confront the massive problems of today" (p. 86). Holman (2009) adds:

As the Cooperative Extension Service moves into the 21st century, the topics and issue that face the United States will change. In order to continue being an important and valuable provider of information and services, the Cooperative Extension Service will need to continue developing programs that address the changing issues confronting the population. The continual collaboration of resources and knowledge of the local, state

and federal experts will aid in keeping up-to-date on current and future agricultural and domestic trends. (p. 144)

Schroeder defines adult educational agencies as entities whose purpose is to develop programs for autonomously controlled adult learning (McCullough, 1980). There are many different types of learning agencies that offer self-directed or adult education courses. Schroeder (1970) organized these agencies into four categories. Type I agencies are mostly involved in adult education as their central focus. Some examples are adult high schools, agricultural extension programs, and business schools. Duggan (2009) described these agencies as existing to serve a specific group of adults rather than all adults or the comprehensive whole. Schroeder's Type II agencies are concerned with youth education and also includes adult education as well. Type II programs include Cooperative Extension Services, adult classes, colleges, junior colleges and public schools (Duggan, 2009). Type III agencies address the non-educational needs of the community such as welfare agencies and public libraries and focus on the education of adults only. Schroeder's Type IV agencies promote the betterment of others and ultimately the agencies themselves (Duggan, 2009).

Alabama Cooperative Extension System is also a member of a network of 74 other universities in the United States called eXtension which provides web-based information on an even broader range of topics that is made available to anyone who has internet access. eXtension provides peer-reviewed, research-based, unbiased educational content to the public (eXtension, 2011). Learners access information on fact sheets, chat sessions, web conferencing, educational modules, and many other formats to aid in the learning process about supported topics online. eXtension reduces duplication in the Extension community, provides improved training and professional development and is an online infrastructure for Extension collaboration. During an

interview with Dr. Anne Adrian, state eXtension technology specialist in Alabama, she says for example:

A virtual conference that was held in Fall 2010 if valued at \$1,500 per person (an approximate cost of attending a conference) for those who attended (over 700 people) would equal \$1,050,000.00. Evaluations showed that those who attended learned new ideas and technology. It seems that those who are not participating in eXtension professional development sessions are missing out of some great opportunities. Typical online professional development sessions cost around \$50 to \$200 per day. Estimating the costs at \$100 per attendee would have been around \$70,000. (personal communication, June 6, 2011)

This illustrates how new training technologies, such as eXtension and other similar programs, serve as a resource and train groups of individuals without the elevated cost of traveling expenses that often hinder attendance at such large scale training programs.

Adult self-directed programs modeled after programs such as Cooperative Extension Service programs are valuable assets in modern agriculture and technology education. Tailoring these programs to the specific needs of the self-directed adult learner needs is important to ensure learning gaps are bridged. Introducing Interactive Television (ITV) into the ACES programs for use in adult educational programs is one example of how technology has become an instrumental tool in distance educational programs or bridging the gap in agricultural education. Witte and Witte (2004) added:

Education is no longer a public monopoly. Educational culture has changed and continues to change. Learners are no longer passive participants; they are educational consumers demanding both quality and accessibility. A well-designed program of study,

delivered by ITV, can effectively meet the needs of the adult learner in a rapidly changing educational environment. (p. 253)

“The creation of well-developed programs of instruction and delivery methods reflecting instructional praxis, care, and student learning considerations brings benefits to both the learner and the providing institution” (Witte & Witte, 2004, p. 270). During an interview with Greg Parmer (personal communication, June 6, 2011), an ITV distance education participant, stated: “the two-way distance education facet of the Adult Distance Education program helped learners by allowing their attendance at professional conferences and vacations without missing classes. The experience of individual discussions among the class is a primary part of the learning process.” Adults can still attend class remotely through the use of ITV, internet access and a laptop computer. ITV can also be used to connect emergency personnel in a timely manner. For example, in the event of a natural disaster where collaboration between emergency personnel groups is important and there is not time to conduct a physical meeting, ITV can serve as the virtual medium. ACES hosted a recent H.323 videoconference among 33 sites in Alabama for poultry producers who experienced tornado devastation from the April 27, 2011 storms that swept across northern Alabama. Rusty Presley (personal communication, June 7, 2011), specialist VI with ACES/AG Information Technology Unit, said approximately 218 people watched the live conference and an additional 393 people subsequently viewed the archived conference via Panopto on the internet. This meeting connected poultry growers with the Alabama State Department of Agriculture and Industries, Auburn University and ACES poultry experts, the Alabama Poultry and Egg Association and the Commissioner of Agriculture to discuss pertinent relief efforts for those affected by the storm. There was no cost to attend the video conference where expert advice was given and industry collaboration was conducted.

Agriculture has changed dramatically in the last 100 years and therefore training must change to accommodate those working on the front lines efficiently. Extension education communication required face to face conversation through field visits and meetings. As technology progressed with the use of telephones, communication became more convenient. Today full interaction can take place from almost anywhere in the world between the educator and the learner through the use of ITV and other computer aided means of remote communication. Improved communication tools allow the learner and teacher to better interact and allows for more convenient and frequent interaction between parties.

Learning Theory

Knowles (1975) recommended three reasons to consider self-directed learning. The first reason is that proactive learners learn better and more easily than reactive learners. The second reason is that self-directed learning is the natural psychological process of maturation and development. The third reason is that a lot of responsibility is placed on the learners taking the initiative to learn as new developments in education appear. Given Knowles's three reasons, learners that did not possess a certain level of self-directedness would have trouble and anxiety in the learning environment. Knowles (1975) used a five-step approach to encourage self-direction in the learning environment. These five steps are simply recommendations to assist educators trying to instill self-direction in learners. There must first be a diagnosis of the learning needs of the adult. Second, the educator must formulate the learning needs. The third step is for the educator to identify the learning material resources necessary for learning to take place. The fourth step is to choose and implement the appropriate learning strategies required. Finally an evaluation must be conducted of the learning outcomes.

Traditionally the concept of learning occurs in a school or other educational setting under the direction of a teacher in some capacity. Gibbons, Bailey, Comeau, Schmuck, Seymour, and Wallace (1980) found that adults learn informally just as they do formally and their informal skill through self-directed learning might be more important in the long run. Learners spend a large amount of time outside of the formal classroom, as Gibbons, et al. (1980) stated, "...and when school days end, even the best educated have forty or fifty years of life and learning still ahead of them" (p. 42). Gibbons, et al. (1980) research found many characteristics that informally educated experts possessed that were different from assumptions underlying formal schooling. "The self-educator must be independent, energetic, creative, and strongly self-directed" (Gibbons, et al., 1980, p. 42).

There is a great amount of diversity in the kinds of skills developed by the experts and in the kinds of skills required to become experts in their fields. In contrast, formal schooling generally requires narrower margins for success in experience and skill in contrast. Expert accomplishment grew from extra-curricular life experiences directly, and often schooling had negative effects. These experts focused on one problem, project or skill at a time, in contrast to general survey practices required in formal schooling. Formal schooling requires passive, abstract-theoretical, teacher-directed means in the classroom setting where situations are controlled and more predictable (Gibbons, et al., 1980). Experiential, active, self-directed, situational, and often challenging experiences are the locus of control. Self-educated experts tend to have an unusual source of strength that helps them pursue their goals against great odds, in spite of failures and public disapproval.

Gibbons, et al. (1980) show the following prominent characteristics from, *Biographies of 20 People Who Became Expert without Formal Training*:

1. Primary Experience in the Area
2. Industriousness
3. Perseverance
4. Self-Disciplined Study
5. Curiosity
6. Single-minded Pursuit
7. Creativity
8. Ingenuity
9. Self-Confidence
10. Natural Ability (p. 46)

Gibbons, et al. (1980) also noted, "...they have good physical and mental health and tend to live accident-free lives which was confirmed by Maslow's study of self-actualizing people" (p. 46).

The following table (Table 1) shows some of the self-education principles and their implications for self-education teaching. These practices, when used systematically, can aid self-directed learning programs to teach people to become experts without formal training through implementation, modification and evaluation of each of these principles.

Table 1
Toward a Theory of Self-Education

(In) Self-Education or Self-Educators...	Teaching for Self-Education involves...
1. the locus of control is in the self-educator whereas in formal education the locus of control is in institutions, their representatives, or their prescriptions.	helping students to internalize control over their lives.
2. is usually concentrated effort in one field rather than a general study of many.	helping students to identify and become expert at the activity or activities that may become central in their lives.
3. is usually applied education-learning for immediate application to a task, and from the practical experience involved in executing it.	integrating theoretical studies with technical training and practical application. It means learning for specific use now rather than learning for possible use years later.
4. is usually self-motivated, that is, they are committed to achievement in the field of their choice, even when faced with difficulties.	helping students to generate their own drive toward their own goals rather than stimulating them to pursue goals set for them by others.
5. usually guided by a vision of accomplishment, recognition or rewards valued highly by the individual.	helping students to see themselves successfully experiencing very desirable attainments. It involves learning to plan an effective way of making that vision a reality.
6. tend to settle on the particular field in which their interests, talents, past experiences, and opportunities are combined.	patterns of exploration which enable students to try out a wide range of fields of activity.
7. tend to settle on the unique pattern of formal, informal and casual methods by which they learn best – drawing from such possibilities as study, observation, experience, courses, training, conversation, practice, trial and error, apprenticeship, productivity, group interaction, events and projects.	helping each student to develop a personal learning style.
8. involves the development of attributes traditionally associated with people of character: integrity, self-discipline, perseverance, industriousness, altruism, sensitivity to others, and strong guiding principles.	promote, model, and reward the development of personal integrity rather than the opportunistic pursuit of offered rewards, of self-discipline rather than obedience, of inner drive rather than the avoidance of punishment or the pursuit of artificial rewards, of caring rather than sustained competition and of strong internalized principles rather than externally imposed rules.
9. development of attributes usually associated with self-directed and unique, even radical, people: drive, independence of thought, nonconformity, originality, and talent.	promoting drive rather than passivity, independence rather than dependence, originality rather than conformity, and the talents that make individuals unique rather than the tasks that make them all act the same.
10. use reading and other process skills to gain access to the information and guidance they need for their projects.	Training in the process skills, such as reading and remembering, especially at the moment students urgently need to gain access to information.
11. emerges as a theme that runs through a number of important experiences in the person's youth; later experiences maintain and develop the theme until it becomes a conscious focus of choices in the person's life.	Helping students to identify themes emerging in their lives, to build on those they choose, and to create new themes they desire.
12. is best cultivated in a warm, supportive, coherent environment in which people generally are active and there is a close relationship with at least one other person.	creating an active environment in which a student's self-directed activities are warmly supported and there are many opportunities to form close working relationships.
13. people seem to like others and to be liked or admired by them; they seem to be healthy in attitude, body, and mind.	promoting a holistic approach to learning so that students not only master some knowledge or skill, but they also develop a healthy attitude toward themselves, others, the world and their activities.

Adult Learning

Knowles (1990) stated, “we know more about how animals (especially rodents and pigeons) learn than about how children learn; and we know much more about how children learn than about how adults learn” (p. 11). Early studies were conducted by experimental psychologists whose subjects required a rigid control of variables, and the conditions under which animals learn are more controlled than those under which children and adults learn (Knowles, 1990). Since adult learning theory is a relatively new field, there is greater affinity for new information to be conducted on adult learning in a wide variety of disciplines. “The adult learner has indeed been a neglected species” (Knowles, 1990, p. 27).

Knowles’s perspective was that adults learn through the personal pursuit of knowledge and a defining characteristic of adults is that they are self-directed. One of the first assumptions of andragogy, a term Knowles widely used, was that a person’s self-concept matures as they develop from dependency to self-directedness. Knowles (1970) wrote, “He [the learner] sees himself as being able to make his own decisions and face their consequences, to manage his own life. In fact, the point at which a person becomes an adult, psychologically, is that point at which he perceives himself to be wholly self-directing” (p. 40). Knowles was noted for his distinction between adolescent and adult learning. Pedagogy was defined as the art and science of teaching children (Knowles, Holton and Swanson, 2005). The pedagogical model assigns the teacher with full responsibility for making all decisions about what, how, when, and if the subject is learned, whereas andragogy was defined as the art and science of helping adults learn (Knowles, Holton and Swanson, 2005). Later on Knowles (1975) defined self-directed learning as, “the process in which individuals take the initiative without the help of others in diagnosing their learning needs,

formulating goals, identifying human and material resources, and evaluating learning outcomes” (p. 18).

Knowles (1975) explained why self-directed learning was important by saying, “we are not talking about something that would be nice or desirable; neither are we talking about some new educational fad. We are talking about a basic human competence – the ability to learn on one’s own – that has suddenly become a prerequisite for living in this new world” (p. 17). Self-directed learning (SDL) has been used to help learners to adapt to change. SDL helps adults learn new technologies from one industry and adapt those technologies to others. The transfer of new technology from one to another requires SDL for a faster rate of change and adapting to occur. Things are constantly changing and adults in particular must not stop learning for technology will pass by at such a pace that the adult will be incompetent even in life’s simple functions. “As adults age, their social roles change and education can be a means of facilitating the necessary adjustments. The teachable moment for an adult depends upon immediate problems or tasks associated with social roles and functions” (Darkenwald and Merriam, 1982, p. 87). Knowles describes self-directed learning as a process in which individuals take the initiative, with or without direction from others, in diagnosing learning needs, formulating their learning goals, the ability to identify material and human resources for learning, identifying and implementing the appropriate learning strategies, and finally evaluating the learning outcomes. Adults learn from experiences in life continuously. As new technologies are available it is to the benefit of every adult to take the initiative and do whatever it takes to master necessary knowledge and skills that improve learning, job performance and quality of life.

Erikson’s eight stages of life brought us a new psychosocial perspective to study child development. He was the first to extend developmental theory into old age, finally completing

the learning development theory life cycle (Crain, 2005). Erikson believed ideally the child will master the positive ego strength but must experience the negative to develop properly. Learning requires us to encounter negative experiences so we can differentiate those experiences to positive ones. The first stage is the oral stage that introduces a child's development of trust vs. mistrust pertaining to the main caretaker. The second stage is compared to the anal stage and coincides with autonomy vs. shame and doubt which is characterized by potty training and generating one's own will and selfhood. Third stage concerns the phallic or oedipal stage where the child develops intrusion dealing with initiative vs. guilt. The fourth stage is latency where nothing exciting happens except important mastery of cognitive and social skills. Erikson's fifth stage is one of puberty or the genital stage where sexual development, conflict, and identity are engaged and hopes of finding fidelity as ego strength. Young adulthood is the sixth stage where intimacy is attained ideally. Erikson then characterized adult hood as the seventh stage where we deal with generativity vs. self-absorption and stagnation. Adults are introduced into learning development theory for the first time in educational theory. Finally with stage eight old age sets in and we struggle with ego integrity and despair with intentions of resulting wisdom and our lives have been portrayed as meaningful. Erikson recommends parents should learn to let children live because the plan for growth he says is all there and parents should not expect to control the entire learning and educating process (Crain, 2005).

Figure (1) shows the natural maturation toward the self-direction of humans compared to the culturally permitted rate of growth of self-direction as shown in Knowles, Holton and Swanson's (2005) book, *The Adult Learner* (p. 63).

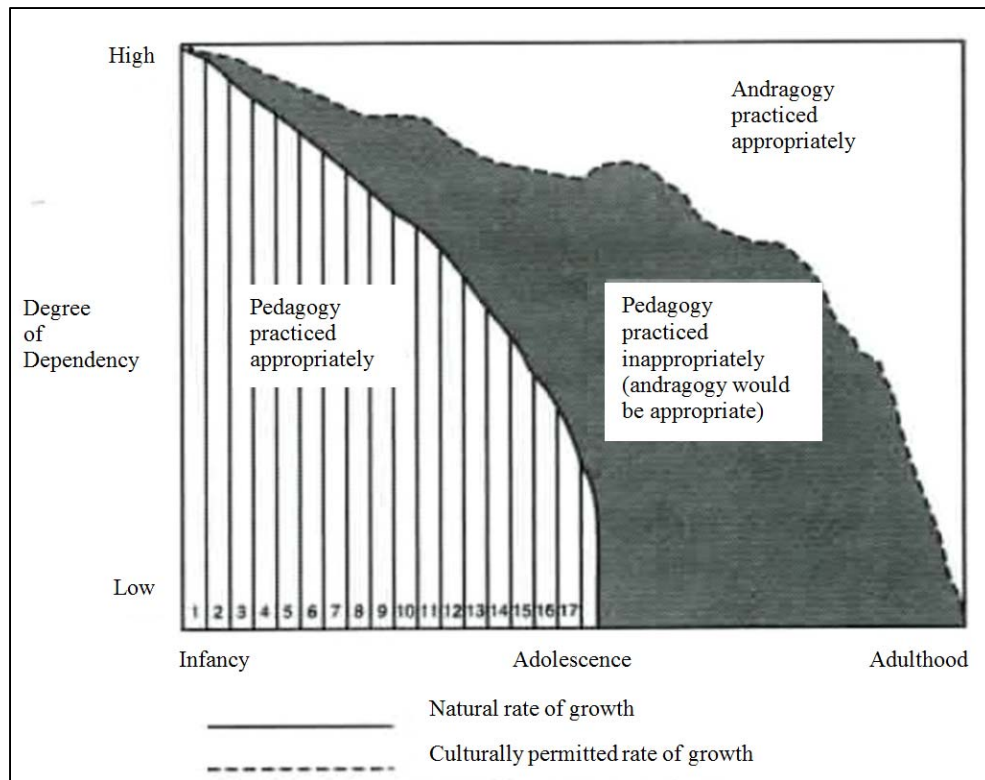


Figure 1. The Natural Maturation Toward Human Self-Direction. This figure illustrates the degree of dependency a human experiences compared to the culturally permitted self-directed rate of growth allowed from infancy to adulthood.

“No child, for example, can become completely autonomous, for societies will always need to regulate the child to some extent. Still, Erikson hoped we can raise children so they can gain as much autonomy, initiative, and as many other virtues as possible” (Crain, 2005, p. 377). Pedagogy is practiced earlier in life but comes exceedingly inappropriate, restricted by United States culture (i.e., home, religion and youth institutions, government systems, schools). In this case United States culture does not nurture the development of the abilities required for self-direction. This can result in a gap in self-directed abilities that create tension, resentment and sometimes rebellion in an individual or organization. Knowles, Holton and Swanson (2005) stated:

It seems that the process of gaining a self-concept, of self-directedness, starts early in life and grows cumulatively as we biologically mature, start performing adult-like roles, and take increasing responsibility for making our own decisions. So, we become adults by degree as we move through childhood and adolescence, and the rate of increase by degree is probably accelerated if we live in homes, study in schools, and participate in your organizations that foster our taking increasing responsibilities. But most of us probably do not have full-fledged self-concepts and self-directedness until we leave school or college, get a full-time job, marry, and start a family. (p. 64)

Adults use SDL at work because they want to keep their jobs, excel at work, and become more valuable to employers. Adults also practice SDL at home because this is what makes them responsible friends, parents, husbands, and wives. Parents learn by trial and error, from books, the internet, and parenting classes on how to best provide for children. Some of this is teacher directed learning (TDL), but the vast majority of learning how to raise children is done through SDL. “An essential aspect of maturing is developing the ability to take increasing responsibility for our own lives – to become increasingly self-directing” (Knowles, 1975, p. 15). Adults that excel at work, home and in hobbies may do so successfully through some amount of SDL. Those that are proficient with SDL methods of learning will adapt and be more productive and efficient leaders because of these rapid learning traits.

Knowles further defines SDL in terms of when it occurs developmentally (Knowles, 1990). Darkenwald and Merriam, (1982) said, “For as individual adults function in society, age, and accumulate experience, they become more and more differentiated from one another. A group of 44-year olds will be less like each other than a group of 20-year olds” (p. 75). Age does not determine the level or proficiency of SDL; rather it is up to their personal responsibilities and

experiences that will result in their competency to do such a task. Knowles (1990) stated, "... if and when an adult thinks that studying, learning, and the intellectual adventure is as much a part of life as his occupation and obligation to his family, he will be much more likely to achieve a higher level of intellectual performance" (p. 157).

Knowles (1990) described the skills that a self-directed learner should have are the following:

1. The ability to develop and be in touch with curiosities. Perhaps another way to describe this skill would be, "the ability to engage in divergent thinking."
2. The ability to perceive one's self objectively and accept feedback about one's performance non-defensively.
3. The ability to diagnose one's learning needs in the light of models of competencies required for performing life roles.
4. The ability to formulate learning objectives in terms that describe performance outcomes.
5. The ability to identify human, material, and experiential resources for accomplishing various kinds of learning objectives.
6. The ability to design a plan for strategies for making use of appropriate learning resources effectively.
7. The ability to carry out a learning plan systematically and sequentially. This skill is the beginning of the ability to engage in convergent thinking.
8. The ability to collect evidence of the accomplishment of learning objectives and have it validated through performance. (p. 174)

The shift from pedagogy to andragogy requires a new outlook on adult learning behaviors. Knowles, Holton and Swanson (2005) evaluated the Andragogy in Practice Model (see Figure 2). It has three dimensions, “1) goals and purposes for learning, 2) individual and situation differences, and 3) andragogy: core learning principles” (p. 148). The goals and purposes for learning, indicated by the outer rings of the model, interact to mold and shape the learning experience. They are divided into three categories: societal, individual and institutional growth.

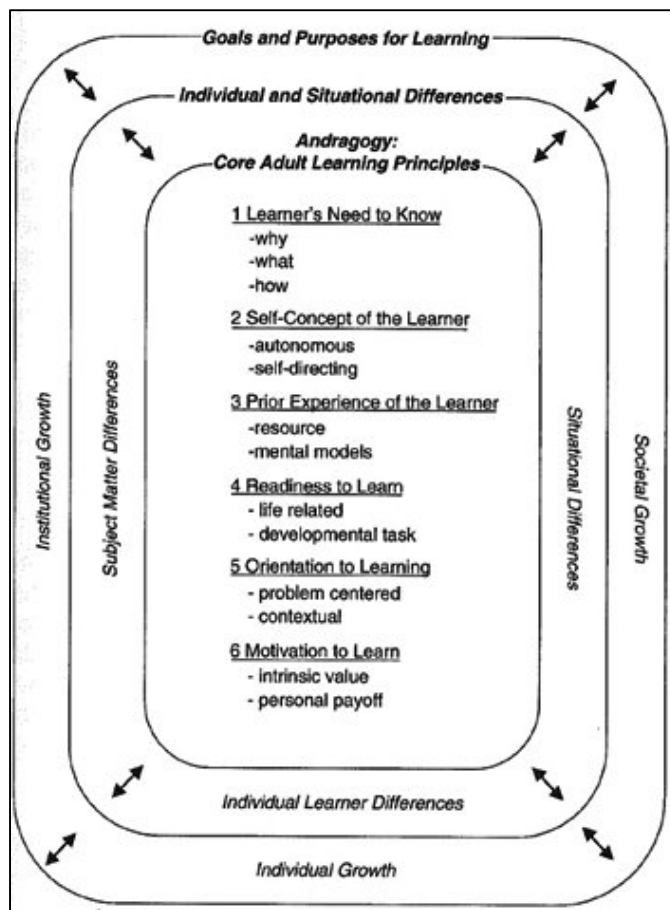


Figure 2. Andragogy in Practice Model. Andragogy is the core adult learning principle surrounded by individual and situational differences and goals and purposes for learning.

The inner ring, individual and situational differences, helps researchers understand and learn about the variables that impact the adult learner. These variables are divided into three categories: subject matter, situational and individual differences. Finally the inner ring, named the Core Adult Learning Principles, is based on assumptions. The adults need to know, requires that genuine understanding of why such learning is beneficial. The second core principal is the learner's self-concept. Adults may resent and resist specific situations when they feel others are imposing their will to learn on them. They have a self-concept of being personally responsible for their own learning decisions or owning it. The third core principal is the role of the learner experiences. Adults typically have great experiences that can enhance the learning experience of adult self-directed learning. Adults can draw from these experiences and it helps them relate and apply these existing experiences to other situations. Fosnot (1996) talked about the concept where learners actually construct their own personal knowledge based from their experiences is termed constructivism. Adult learners have many useful tools from which to use in learning to help them be successful. Youths, on the other hand, do not have such an extensive collection of tools to help aid them in learning. The fourth principal is the adult readiness to learn. Adults have the critical implication that coincides with the developmental task at hand. Knowles, Holton and Swanson (2005) showed for example, "a sophomore girl in high school is not ready to learn about infant nutrition or marital relations, but let her get engaged after graduation and she will be very ready" (p. 67). The fifth core principal in the model is the adult learners' orientation to learn. Adults are life-centered in their orientation to learn. Adults are motivated to learn because it helps them perform essential tasks that are important to them. Finally the motivation for an adult to learn is imperative to the completed task. Job satisfaction, self-esteem, quality of life, and many other motivators are paramount in self-directed learning.

Self-directed learning is situational and dependent on who has control of the learning methods and the objectives. Mocker and Spear (1982) identified three primary forms of learning: formal learning, informal learning, and non-formal learning. Pedagogy is the approach during the first form of learning. The second form of learning is identified by the teacher or instructor at the institution in control of the objectives and methods used. Thirdly, non-formal self-directed learning is used because the person doing the learning is in control of the methods and objectives of the learning taking place. Andragogy is the approach taken with non-formal learning. SDL may appear differently in specific situations and therefore it is the responsibility of the instructor to identify the three different forms of learning and adapt the learning style for each group. Teacher directed learning (TDL) may be more appropriate than SDL in certain situations. The facilitator decides who, what and how should be learned is indicative of self-directed learning.

Spear and Mocker (1984) characterized a four-pattern typology based on self-directed learner circumstance organization. These typologies are Single Event-Anticipated Learning, Single Event-Unanticipated Learning, Series of Events-Related Learning, and Series of Events-Unrelated Learning.

The first typology, Single Event-Anticipated Learning, occurs when the learner does not have prior knowledge of what is to be learned or how it will be learned, but that the activity will include this information while it is being learned. The learner might be engaged in learning but not know the direction it will ultimately take. The second typology is Single Event-Unanticipated Learning and it occurs when the self-directed learner is involved in or participates in a learning activity that is repeated activity of some type and does not consider it learning. Learners in the third typology, called Series of Events-Related Learning, participate in learning events which are in some sequence or progressive goal learning activity. These events build upon one another to

reach an end goal. Finally, the fourth typology, Series of Events-Unrelated Learning occurs during an extended period of time and involves the uniting of several unrelated activities. These activities are extended over a longer period of time and build upon each other.

Self-directed learners might not pre-plan their learning activities or projects. They pick different activities or opportunities from various alternatives that occur in their learning environments and develop their own learning projects based on the opportunities they find beneficial based on Spear and Mocker (1984). More efficient use of SDL is found with a project where the learner has a substantial amount of experience and knowledge in relationship with the project itself. However, this situation does not challenge the learner to learn new material as it would with a learner who is trying to develop his/her knowledge base. Part of learning and improving is to be challenged to learn in new and/or unfamiliar areas. Knowles (1975) summarizes the importance of SDL when he says, "...the "why" of self-directed learning is survival – your own survival as an individual, and also the survival of the human race" (p. 16).

Learning Projects

Allen Tough's research was conducted in self-directedness with respect to adults in 1966. Tough (1967) expanded the process of self-teaching, and described it as the adult learner taking ownership in planning and directing the course of study. He characterized self-directed learning as a major reason why adults begin and continue learning projects. Tough (1979) defines learning projects as follows:

A learning project is simply a major, highly deliberate effort to gain certain knowledge and skill (or to change in some other way). Some learning projects are efforts to gain new knowledge, insight, or understanding. Others are attempts to improve one's skill or

performance, or to change one's attitudes or emotional reactions. Others involve efforts to change one's overt behavior or to break a habit. (p. 1)

Tough defined a self-teaching project as one that occurs when an adult has spent at least eight hours over a period of twelve months in pursuit of some skill or knowledge, and was personally responsible for the directing, planning, and conducting the learning project. Tough (1979) indicated, "about 70% of all learning projects are planned by the learner himself, who seeks help and subject matter from a variety of acquaintances, experts, and printed resources" (p. 1). Tough (1979) found that it is common for adults to spend approximately 700 hours a year at learning projects. He also explained that adults naturally apply self-directed learning bridging those characteristics from an informal to a more formal situation and that self-directed learning actually occurs throughout an entire lifetime. Tough (1979) found that approximately 90 percent of adults engaged in at least one or more self-directed learning projects every year. Tough (1967) went on to say, "... many of the projects seemed to form an extremely important part of the subject's life and seemed to dominate his/her time and thought for weeks or even months" (p. 43). This supports the idea that adults have a strong desire to learn about things that affect their lives, regardless of the required time restraints that may be necessary to accomplish such projects. Adults see a need to learn more about the subject if they can relate to it and have the desire to obtain the benefits once the task or information is learned. Tough's learning or teaching projects unveiled how much time and effort are involved participating in these projects.

The adult takes the responsibility of learning tasks, organizing the learning process, and learning goals. Self-directed learning can be found in an adult's desire to learn gardening, earn a master's degree, fly fish, speak a second language, or any learning project that is not intended to rely on TDL. The adult learner is in total control of the outcome in this learning process.

Knowles (1990) stated, “The more proficient we become as self-directed learners, the better we can make use of all kinds of learning resources” (p. 117). Guglielmino (1977) theorized about SDL saying, “self-direction in learning can occur in a wide variety of situations, ranging from a teacher-directed classroom to self-planned and self-conducted learning projects” (p. 34). Learning projects and other learning situations promote self-directed learning more than other situations.

Self-Directed Learning

Self-directed learning has become a major topic of interest in adult education. Social conditions in Colonial America and a corresponding lack of formal educational institutions resulted in many people having to learn on their own (Heimstra, 1994). “Individualized instruction, prescriptive learning, self-instructional packages, programmed learning, computer-mediated instruction, contract learning, computer-based training, interactive video, and a dozen other terms are used interchangeably with self-directed learning” (Piskurich, 1993, p. 1). SDL is a training design where packages of predetermined material are mastered by trainees, without the help of instructors, at the trainees own pace (Piskurich, 1993). Some adults are characterized as self-directed learners compared to others who may be more successful in teacher-directed learning (TDL) environments. Generally TDL pertains to pedagogy and SDL to andragogy. “SDL can be described as learning that is self-initiated, personal, and intentional” (Roberson, 2003, p. 12).

Guglielmino (1977) stated the learner, “ultimately determines whether self-directed learning will take place in a given learning situation. The self-directed learner more often chooses or influences the learning objectives, activities, resources, priorities and levels of energy expenditure than does the other-directed learner” (p. 34). SDL may or may not necessarily be as

organized. SDL can be unorganized, not continuous, or in sequence as compared to TDL. Lack of resources, lack of time, or interruptions frequently occur in the SDL process as compared to TDL environments. Learning often occurs around life's other tasks. For example, often family and employment requirements take precedence over learning projects. Proficient SDL learners might be able to sporadically stay focused on the learning project where non-SDL learners might not be able to maintain such a level of focus with distractions. Maintaining enough focus to continue progress in the right direction takes careful planning, motivation, organizational skills, and developing a pace or routine during difficult times.

Other theorists (Rotter, 1966; Van Zile-Tamsen, 1997) tie self-directedness to a locus of control with internal and external dimensions. The internal dimension of locus of control is likely to view reinforcement as being contingent on the person's behavior. They view external dimensions as the contingency as luck, chance, and actions of others. Van Zile-Tamsen (1997) considered, "control-of-learning beliefs are significantly related to two of the SDL learning components. Those learning components are resource management and cognitive strategy" (p. 13). Older students have more experience and therefore their internal motives may be related to better resource management because of age.

Despite SDL theories characterized by isolation, Brookfield was interested in self-directedness in informal social settings. Brookfield (1985) stated, "the most complete form of self-directed learning occurs when process and reflection are married in the adult's pursuit of meaning" (p. 15). SDL also thrives in the informal worlds where computers and sophisticated technologies are scarce, yet, social SDL thrives. Brookfield (1985) talks about his experiences of SDL in the United Kingdom where very low levels of education are prominent. High levels of expertise are gained through peers and the people he surveyed held local or national prominence

in their respective fields of interest. SDL benefits those with technology, educational institutions, and learning goals as well as those adults that do not have such resources. People are cited as the most importance resource for learning in social settings where the typical American settings are not the norm. Brookfield (1985) indicated:

When the techniques of self-directed learning are allied with the adult's quest for critical reflection and the creation of personal meaning after due consideration of a full range of alternative value frameworks and action possibilities, then the most complete form of self-directed learning is exemplified. This most fully adult form of self-directed learning is one in which critical reflection on the contextual and contingent aspects of reality, the exploration of alternative perspectives and meaning systems, and the alteration of personal and social circumstances are all present. (p. 15)

Brookfield (1983) also referred to SDL as autonomous learning. Autonomous learning is another theory that carries with it a sense of learner control but also implies, "separation from fellow learners as well as from institutional recognition" (Brookfield, 1983, p. 27). Distance learners must engage separated from fellow learners taking internet courses or acquiring a degree online. The online institutions get the recognition because the level of success of the learner would reflect the quality of delivery, interaction, organization, and learning acquired. Online learning environments require a significant level of SDL but quality interaction between online class members and the instructor has improved greatly in the last ten years. It is the autonomy of each student to responsibly learn and master the learning projects and meet the desired goals of the online institution in order to be deemed successful.

Just as there several definitions of SDL as it pertains to adult learners, there are many terms that are often used to help support the phenomena of SDL. Oddi (1986) identifies these

terms: 1) self-educational, 2) independent study or independent learning, 3) self-teaching, 4) self-instruction, 5) individual learning, 6) independent study, or 7) independent self-education. There are many terms that are used to support SDL as an initiative for the adult learning. They refer to the adult and intrinsic desire to be self-sufficient in the learning process. SDL is most conceptualized as a process by theorists. Owens (2002) organized four concepts of SDL:

Some common aspects of SDL from a definition standpoint are: 1) learning for adaptation to and the transmission of culture, 2) learning for the understanding and development of expertise or specialist knowledge, 3) learning for the vitalization of organizations and societies, and 4) learning for personal fulfillment. (p. 10)

Learning concepts of SDL are very important to adults in society today because there may not be TDL courses or instructions on certain knowledge or skills. Take, for example, the adaptation of an adult from one culture to another exhibited when someone moves to another country. There might be TDL classes or groups that help an adult adapt to or from American society, none can complete the adaptation without some SDL events to aid in this process. The basic support mechanisms are in place, but it takes a great deal of determination to learn a new language, find a desirable place to live, find a job, and other critical necessities to adapt to another country's culture. The person or family adapting has to take control of the process and have the initiative to do whatever it takes to learn how to live again. No class can entirely teach a person everything there is to know about a subject, therefore a certain amount of SDL required in every learning task. There is a distinct difference between theoretical concepts and real world applications. Caffarella and O'Donnell (1987, 1989, 1991b) indicated that it is easy to over-define a phenomenon and cause it to become dull in two ways: 1) it can become empty and apply to nothing, or 2) if it applies to everything then it can lose its distinguishing factor by definition.

The general definitions and characteristics of SDL can become complacent and vague unless they are enhanced by examples that define SDL in unique instances (Caffarella, 1983). Some theorists define SDL as the specific skill that makes up self-directedness. Even though others define SDL differently, they generally revolve around the basic concept of self-directed learning theory. Caffarella and O'Donnell (1987, 1989, 1991b) organized SDL into three dimensions: 1) self-initiated learning taking place either within formal learning contexts and with structures provided by professional educators or outside such contexts, 2) Self-directed learning as a personal attribute of the learner, or 3) self-direction in learning as a (or the) goal of education. Competition at work for certain promotions can be commonplace for SDL to be observed. For example, there has been a great need for experts in the poultry industry to be able to evaluate poultry houses with thermal cameras to evaluate the energy efficiency of the operation with respect to energy conservation (Campbell, 2007). While classes on using thermal imaging cameras are available in TDL workshops, the application of using thermal imaging to evaluate the actual poultry houses is very unique. This specialized skill makes it necessary for someone with SDL capabilities to apply this technology. TDL works well in theory and SDL works well with the application of the theories in the real world. With regard to education, SDL in learning can be seen as many students graduate with a bachelor's degree. Fewer earn a master's degree or a doctoral degree due to the increased levels of intrinsic motivation and SDL. Many college students are deterred from continuing their education for various or compounding reasons, but much of it can be attributed to the lack of SDL. College students have to be successful in adapting to SDL from TDL. Guglielmino and Guglielmino (1994) state:

While changed methods always meet with some resistance, the forces supporting increased use of SDL strategies in business and industry appear strong and unlikely to be

diverted. The combination of economy and productivity resulting from the use of SDL strategies is likely to lead to a major and lasting change in the way training and development takes place in the leading organizations – “the learning organizations” – of this century and the next. (p. 45)

Long (1989) found that successful SDL has the following characteristics: 1) self-awareness, 2) self-confidence, 3) self-reflectiveness, 4) a strong goal orientation, and 5) an aptitude for systematic procedures. Not all adults exhibit all of these characteristics, but many exhibit varying levels of each. Each adult learning trait and procedure can be examined and measured in more than one way. The level of SDL can be measured in some tests or evaluations, but is nearly impossible to measure. It is difficult to obtain unbiased results from surveys that are self-observed because adults have the natural tendency to give incorrect information about themselves.

Many of these surveys identify tendencies toward self-directedness and supporting concepts congruent with SDL. Some websites that provide information about SDL are selfdirectedlearning.com, sdlglobal.com, and distance.syr.edu. These resources describe SDL, training templates, blogs, applications, workshops, consulting services, and formal definitions.

“Many people think and write about self-directed learning as if it were a single entity” (Candy, 1991, p. 8). Candy views self-directed learning dichotomously as both a method and a goal. He says, “self-directed learning as a ‘method’ much like other educational methods as, an educational experience either self-directed, or it is directed by someone else, called a teacher” (Candy, 1991, p. 9). This method is broken down into two sub-dimensions labeled autodidaxy and learner-control (Candy, 1991). The second dimension of Candy’s argument on self-directed learning is that it is a goal as well. “The development of self-directed individuals – that is, people

who exhibit the qualities of moral, emotional, and intellectual autonomy – is the long-term goal of most, if not all, educational endeavors.” (Candy, 1991, p. 19) According to Candy (1991):

Self-direction actually embraces dimensions of process and product, and that it refers to four distinct (but related) phenomena: “self-direction” as a personal attribute (personal autonomy); “self-direction” as the willingness and capacity to conduct one’s own education (self-management); “self-direction” as a mode of organizing instruction in formal settings (learner-control); and “self-direction” as the individual, noninstitutional pursuit of learning opportunities in the “natural societal setting” (autodidaxy). (p. 23)

Self-management describes the methods, skills, and strategies that are used by an individual to direct their own learning achievements. Self-management is defined as, “the ability of the individual to interface his or her behavior with the environment [incorporating the application of behavior analysis principles and procedures [in an effort to] modify the behavior/environment interactions of the individual by the individual” (Brigham, 1982, p. 49).

Candy (1991) described self-management as, “the variable quality of being self-directing within one’s field of constraints to free actions” (p. 20). This could be as simple as setting one’s own goals, making decisions, planning, self-evaluating, self-developing and so forth. Learner control pertains to students who are allowed to choose their content, learning methods, rewards, media used, feedback, assistance, and quality of the instruction. Personal autonomy is described by a learner abiding by his own laws and is morally responsible for his own actions. Autodidactic learning is the self-education of one’s own self. Learners who are self-taught and do not rely on institutions or full time mentors to aid them in learning are considered autodidactic learners.

Piskurich (1993) notes that self-directed learning has many definitions based on the context of how it is used. SDL may have the one prerequisite that it involves some type of choice

made by the student or learner. This could be as simple as choosing a time for the learning to occur or picking the method for the material to be learned. Other definitions of SDL are: A process of mutual inquiry between the teacher and the student (Hiemstra and Sisco, 1990); the learners' ability independently to plan, conduct, and evaluate personal learning activities (Guglielmino, 1977); a personality characteristic of learners (Long, 1990); the selection and/or modification of course materials to illuminate particular objectives, structured in a way to allow the students to carry out the learning (Rowntree, 1986); and, a process in which learners take the initiative for analysis and diagnosis of their learning needs, formulation of personally relevant learning goals, identification of how to achieve them, and reflection of their achievement (Knowles, 1975).

There are many definitions of SDL and each has different meanings when used with different learning methods. For instance, Gagne, Briggs, and Wagner (1988) used SDL defined as a belief that everyone is capable of self-directed involvement and should assume the responsibility for making material, technique, and evaluative choices as part of their writing of a performance-based contract with the instructor when used with learning contracts. SDL when used with self-instructional packages involves learning materials without the help of an instructor to mediate the material. Romiszowski (1986), defining SDL when used in conjunction with individualized instruction, insisted that it could include the individualization of objectives, pace, materials used, content, or the methods used at the direction of the student, the teacher, instructional system, or any combination of the previous. When SDL is used in distance instruction it requires that learning occur without regular face-to-face interaction or contact with the instructors (Rowntree, 1986). Computer-based training uses a computer program designed to support instruction by providing the learner with displays of instructions, prompts, information,

and interactive exercises tuned to a specific subject without the help of a human instructor. Other forms of SDL are realized with the use of interactive video or multimedia training. The trainee has minimal contact with experts or other trainees and explicitly specified content has been scripted for exact visualization and wording, presented through the use of computers and computer video machines, and evaluated through quantifiable scores and other performance measures.

SDL has been stereotyped as learning that only occurs in isolation, when in fact the defining moments can be found in a more social setting. Brockett (1994) stated success in self-directed learning does require some ample time alone to practice personal reflections, reading, and time writing; this only fulfills one aspect of the actual learning process. A perfect balance must be found between the individual and learning in groups to be most effective. There are situations where SDL in groups is appropriate just as there are situations where TDL should be used. Self-directed learning does not degrade institutional programs when used properly by the instructor, nor does it imply that it is the best method to learn. Self-directed learning must take into consideration the adult learners' needs based on learning style the teaching styles and the institution's policies.

Hiemstra (1994) revealed that planning, implementing, and evaluating are all efforts characteristic of self-directed learners. According to Hiemstra (1994) there are some identifiable characteristics about self-directed learning that: an adult's self-directedness is possessed at various degrees; the adult learner can be empowered to take on more ownership of their own learning; the transfer of learning from one project to another is allowed; self-directed learning allows for the learner to utilize many different resources and methods of learning; and self-directed learners can occur with or without the help of others. Adults possessing these traits take

ownership of their learning in gaining new information. There are ideas of self-directed learning being a non-social or individual based learning methods. Hiemstra (1988) described self-directed learning-teaching transactions as learning partnerships. Self-direction should not be looked upon as either absent or present in an individual. Brockett and Hiemstra (1991) considered, “self-direction is a continuum where it is viewed as a characteristic that exists, to a greater or lesser degree, in all persons and in all learning situations” (p. 11). Brockett and Hiemstra (1991) thought the personal characteristic of responsibility involved the learner taking ownership of his own thoughts and actions and dealing with the consequences as well. Responsibility is an important trait of adults who are self-directed learners.

Motivation and Self-Regulation

“Each of us, as an individual, will have to work a little harder and run a little faster to keep our standard of living rising” (Friedman, 2007, p. 278). This requires learning new technological skills but also require self-motivation, a certain mental flexibility and psychological mobility (Friedman, 2007).

Modern concepts of self-directed learning came from Houle’s (1961) work on motivation. Houle (1961) placed twenty two adult learners into three specific categories based on reasons for participating: 1) goal-oriented adults, 2) activity-oriented adults, and 3) learning-oriented adults. When an adult becomes interested in something, a learning goal, that is intrinsically motivating to the adult, there is a strong desire to gain knowledge and experience toward it. This is apparent with adults and their hobbies. Hobbies are things that adults show true intrinsic motivation. When learners are genuinely interested in something they use all of their resources and learning skills to master and satisfy those interests to their fullest extent.

Goal oriented adults have the need to learn about a topic or something of interest. They learn because they have the extrinsic motivation to do so. For example, an adult following the steps to obtain a special certification or job skill to get a promotion at work would be a goal oriented motivation. Adults often join clubs or take classes when they are goal oriented. Another goal-oriented example might be losing weight, joining a gym, and trying to find a husband. Goal oriented adult learners read in a structured manner and it is associated with the learning goal. There are specific objectives to be met with these learners.

Houle (1961) stipulated, “The activity-oriented take part in learning primarily for reasons unrelated to the purposes or content of the activities in which they engage” (p. 19). Many churches or communities have social events or activities to help the community and the members in the church as opportunities for enrichment to social life.

Houle (1961) reinforced that, “For the learning-oriented, education might almost be called a constant rather than a continuing activity” (p. 24). Learning-oriented adult learners typically enjoy reading, and love to learn. Learning-oriented adults are self-direction oriented in everything they do. They look for learning activities on vacations, at work, and at home. “What they do has a continuity, a flow, and a spread which establish the basic nature of their participation in continuing education” (Houle, 1961, p. 24). Bender, et. al, (1972) cited:

The motivation that is necessary for students to continue in adult education programs is provided by effective teaching. Students who are having their needs met and who enjoy the total meeting experience will return for successive sessions. There is no formula for motivation. The following procedures, however, seem to be workable in most adult learning situations:

1. Base the teaching upon the needs of the students. What is taught should be meaningful to those who are participating. It should help them reach goals that they look upon as being more satisfactory than the present attainment.
2. Base the teaching upon thinking and understanding, rather than memorizing facts. Emphasize the use of facts in solving problems.
3. Make use of the natural drives and urges that exist in most people. Appeal to ownership, desire for recognition, curiosity and suspense, activity, competition and group participation.
4. Use illustrations that provide connections with that which is interesting, including persons and happenings.
5. Make use of appropriate audio-visual aids in teaching. This may necessitate taking the individual or group to the farm or to the business.
6. Carry the teaching to the doing level. Be sure that the students are able to apply that which has been taught. This will in many cases necessitate individual follow-up on the farm or in the agribusiness situation.
7. Provide favorable physical facilities wherever the learning situation takes place. An adult student cannot become interested in that which is being taught if he is uncomfortable and more concerned about the heat and the light, for example, than the problem being discussed.
8. Teach enthusiastically. Be concerned with each individual and the problems that are being discussed. (p. 33)

Other factors that contribute to motivation include starting and stopping meetings on time, and having refreshments, and/or other activities that are of interest. There are two basic problems with motivation and interest in adult education programs. Bender, et. al., (1972) stated:

First of all if we are to have a program of adult education, we must have people to make a start in attending our meetings; secondly once they start, they must be so motivated that they will return for successive meetings. It must be remembered that adult education is voluntary; if people do not choose to participate, we do not have a program. (p. 32)

During a study on informally educated experts, Gibbons, et al. (1980) made the following statement about motivation, “It seems inevitable that people who take an independent position or pursue a valuable goal come into conflict or competition with others. This typically motivates the self-educating subject to even greater learning and effort” (p. 48). Adults who are not highly motivated tend to yield to conflicts and may be better suited in formal education environments. One of the strongest motivators recorded in a study on self-directed learning was that the expert’s own personal accomplishment had a significant desired effect on the world showed positive enforcement for self-education (Gibbons, et al., 1980).

Wlodkowski (2004) stated, “In order to promote learning opportunities for all adults, a culturally responsive approach to teaching adults is needed. The Motivational Framework for Culturally Responsive Teaching (see Figure 3, taken from Wlodkowski & Ginsberg, 1995, p. 29) is respectful of different cultures and is capable of creating a common culture within a learning situation that diverse adults can accept” (p. 144). When this framework is used properly, it combines the four intrinsic motivational conditions into commonly accepted experience that can be used with a broad range of adults.

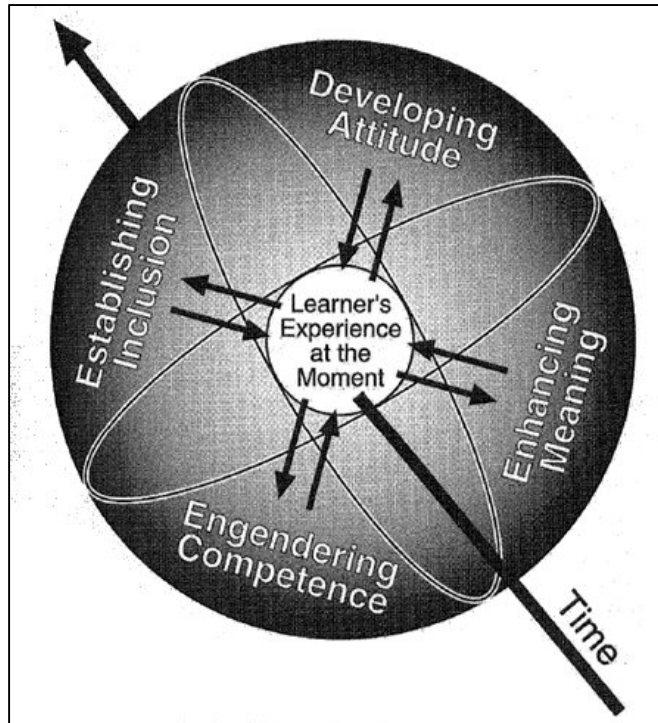


Figure 3. A Motivational Framework for Culturally Responsive Teaching. Illustration of interaction between four intrinsic motivational conditions in learning.

Wlodkowski (2004) continues to describe these conditions which instructors and learners can collaboratively create or enhance to improve conditions in a learning environment:

1. Establishing Inclusion: Creating a learning atmosphere in which learners and instructors feel respected by and connected to one another.
2. Developing Attitude: Creating a favorable disposition toward the learning experience through personal relevance and choice.
3. Enhancing Meaning: Creating challenging, thoughtful learning experiences that include learners' perspectives and values.
4. Engendering Competence: Creating an understanding that learners are effective in learning something they value. (p. 145)

These four conditions are essential for developing intrinsic motivation for learning. “In self-directed education, the individual masters all the activities usually conducted by the teacher: selecting goals, selecting content, selecting and organizing learning experiences, managing one’s time and effort, evaluating progress, and redesigning one’s strategies for greater effect” (Gibbons, et al., 1980, p. 52). The student of self-directed learning, according to Gibbons, et al. (1980), must have “the initiative to launch these processes as well as the personal motivation to continue learning, even when there is no pressure, guidance, or extrinsic reward” (p. 52).

Wlodkowski (2004) further explains:

Although human motivation does not always follow an orderly path, we can plan ways to evoke it through a learning sequence. In fact, due to motivation’s emotional base and natural instability, it is judicious, especially facing a time-limited learning period, to painstakingly plan the milieu and learning activities to enhance adult motivation. For projects, self-directed learning, and situational learning as in the case of problem posing we may not be so bound to the formal plan. (p. 150)

The following Table 2 from Wlodkowski (1999, p. 85) is an example of how each motivational framework condition can be used to enhance learning. This motivational framework provides a holistic design that includes a time orientation, a cultural respective, and a logical method to promote intrinsic motivation among diverse adult learners (Wlodkowski, 2004). A motivational strategy can be an intended action which an instructor can use to enhance adult motivation to learn (Wlodkowski, 2004). An example might be an instructor giving a learner specific, positive, and accurate feedback about his performance on a project.

Table 2

An Instructional Plan Based on Four Conditions of the Motivational Framework for Culturally Responsive Teaching

Motivational Condition & Question	Motivational Strategy	Learning Activity
Establishing Inclusion: How do we create or affirm a learning atmosphere in which we feel respected by and connected to one another? (Beginning)	Collaborative learning	Randomly form small groups in which learners exchange concerns, experiences, and expectations they have about research. List them.
Developing Attitude: How do we create or affirm a favorable disposition toward learning through personal relevance and choice? (Beginning)	Relevant learning goals	Ask learners to choose something they want to research immediately among themselves.
Enhancing Meaning: How do we create engaging and challenging learning experiences that include learner perspectives and values? (Throughout)	Critical questioning and predicting	Form research teams to devise a set of questions to ask in order to make predictions. Record questions and predictions.
Engendering Competence: How do we create or affirm an understanding that learners have effectively learned something they value and perceive as authentic to their real world? (Ending)	Self-assessment	After the predictions have been verified, ask learners to create their own statements about what they learned about research from this process.

Wlodkowski (1999) based motivational strategies for establishing inclusion are multidimensional sharing and collaborative learning. Multidimensional sharing includes ice-breakers as introductory exercises and social activities to help ease the initial intrusion of class communication. Collaborative learning involves working in groups and brainstorming together for problem solving to energize the group (Wlodkowski, 2004). Strategies for developing attitude are using relevant learning models and the knowledge, wants and learned (KWL) strategy. Relevant learning models are situations where adults can witness similar people to themselves acting out activities to the group. Other adults view themselves in the same situation and can relate to the person's actions. The K-W-L strategy, originated by Ogle (1986), is an elegant way to construct meaning for a new topic or concept based on prior knowledge of the learners. The K, W, and L are acronyms for what the adult knows, wants to know, and has learned during this

particular exercise (Wlodkowski, 2004). Strategies for enhancing meaning in motivation are by posing a problem to the class where an obstacle must be overcome to reach the goal. Also, creating simulations are learning procedures that include role-playing, exercises, and games that allow learners to practice and apply their learning in shallow yet sufficiently realistic contexts (Wlodkowski, 2004). Finally, strategies for engendering competence are providing consistent and prompt feedback to the adult student and by using authentic performance tasks for assessment. Authentic performance tasks resemble closely the possible way adult learners will express in their real lives what they have learned. Authentic performance tasks are arguably some of the oldest types of assessment and have been highly used for years in adult training (Knowles, 1980).

Self-regulation and motivational theories of learning significantly overlap. Motivation is identified as a major factor in self-regulation (Hogg, 2008) and the two terms are grouped together. “Self-regulation theorists view learning as an open-ended process that requires cyclical activity on the part of the learner that occurs in three major phases: forethought, performance or volitional control, and self-reflection” (Zimmerman, 1998, p. 3). Figure 4 illustrates the three self-regulated phases. Self-regulated adult learners should constantly assess and reassess their effectiveness. The first phase of self-regulation is the forethought which refers to the beliefs and influential processes that precede efforts to learn and to set the stage for self-regulated learning. The second stage Zimmerman (1998) referred to the processes that occur during adult learning efforts that affect performance and concentration, called the performance or volitional control phase.

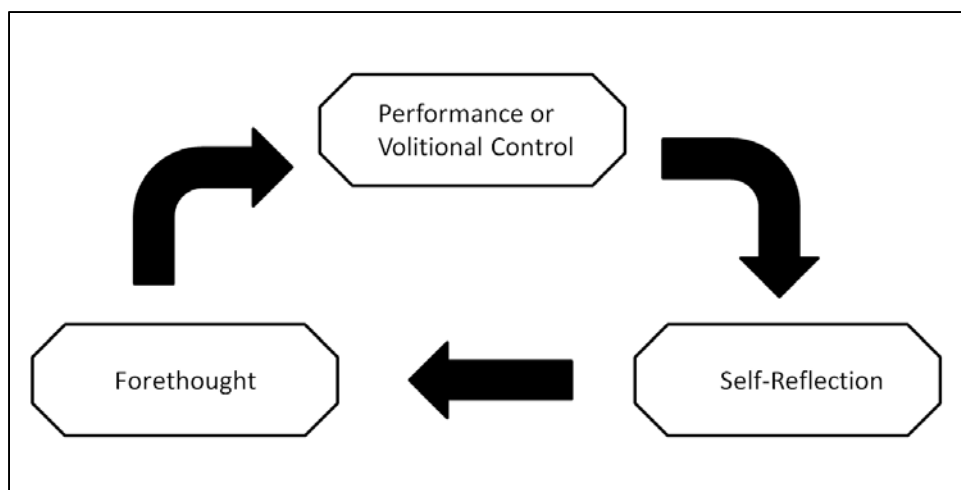


Figure 4. Self-Fulfilling Cycles of Academic Regulation. Illustration of Zimmerman’s three self-regulated phases.

The third, self-reflection, phase of self-regulation refers to the person’s ability to look back on a particular learning experience and assess performance on that experience. This self-reflection phase influences the first phase of forethought to complete the academic learning cycle.

Pintrich (1995) stated, “[i]n short, self-regulated learning involves the active, goal-directed, self-control of behavior, motivation, and cognition for academic tasks by an individual student” (p. 5). Three components of self-regulation exist and function in relationship with the previous three dimensions. A self-regulated learner attempts to control his learning behaviors, his motivations, and his cognition much like a thermostat controls the temperature in a building (Pintrich, 1995). If the temperature is too low or high the thermostat automatically decides to turn either the heat or air conditioning on to reach the preset temperature. This same analogy can also be used to describe the ability for a self-regulated learner to reach a preset temperature (or goal) that has already been determined without the help of adjustments from a teacher or instructor.

Schunk (1989) added activities that are included in self-regulation like establishing a productive work environment, holding positive beliefs about a learner's abilities to value learning, influence learning, and take pride in their own efforts to learn. Some students organize and design methods for remembering or rehearsing information to improve learning performance (Schunk, 1989).

Self-Efficacy

“Self-efficacy refers to beliefs in one's capabilities to organize and execute the course of action required to produce given attainments” (Bandura, 1997, p. 3). This closely relates to the concepts of intrinsic motivation. “A key assumption underlying self-efficacy is that there is a difference between having the skills to perform a task and using the skills in a variety of circumstances” (Bandura, 1997, p. 3). Self-efficacy can influence things like a person's choice of activities, achievement, effort expenditures, and persistence (Bandura, 1986, 1997; Schunk, 1996; Zimmerman, 1995).

Self-efficacy judgments, regardless of accuracy, help to determine (a) which activities to avoid and in which to partake, and (b) how determined the learner will be at overcoming obstacles (Bandura, 1986). Learners are more likely to partake in tasks or projects where the required skills have already been established, but tend to avoid the tasks they believe require greater skills than they possess. For example, learners who are not proficient in science tend to try to take courses or major in disciplines that do not require it. In addition, the stronger the self-efficacy, the harder individuals will try to accomplish a task. This is important specifically when facing problems (Bandura, 1986). Zimmerman (1998) revealed, “those with high self-efficacy for acquiring a skill or performing a task participate more readily, work harder, persist longer when they encounter difficulties, and achieve higher levels” (p. 141).

Alderman (2004) conceptualized that, “[i]ndividuals with strong self-efficacy are less likely to give up than are those who are paralyzed with doubts about their capabilities” (p. 70). Alderman (2004) states, “[b]eliefs about capabilities come from four sources of information: prior task accomplishments, vicarious experiences (observing others), verbal persuasion, and physiological states. It is not the source, per se, but the individual’s evaluation of the information. These sources are not equally influential. They are described in order of their power to influence self-efficacy” (p. 72). Figure 5 shows these beliefs and their order by power. Task accomplishment is described as those where a person who has previously succeeded at doing a task and will have a high level of confidence that the task can be accomplished again. Personal experience is an influential source of confidence. A vicarious experience occurs when a person has witnessed or observed a task being completed successfully. Then there is a strong belief that the same or similar task can be completed or skill can be obtained. A verbal persuasion can be effective if the person already has a high level of confidence or has evidence that they can complete a task.

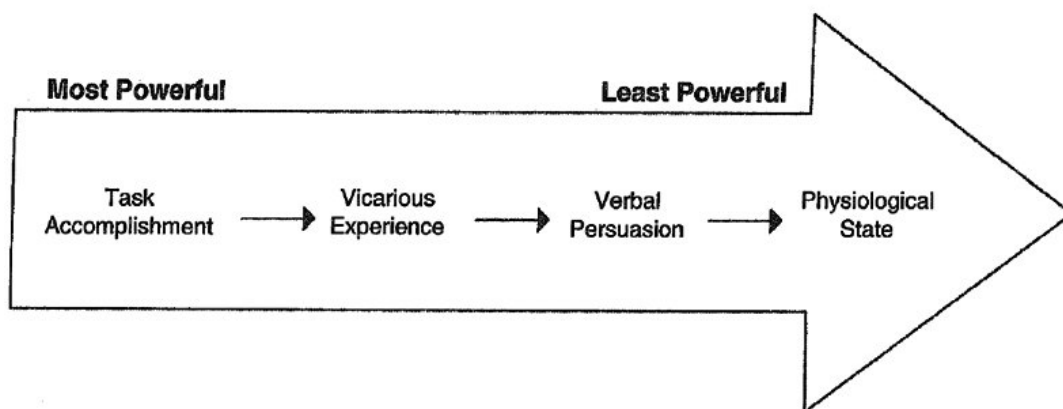


Figure 5. Sources of Self-Efficacy Beliefs. This illustration of the four sources of self-efficacy beliefs are listed in order of power.

However, negative messages have an even greater influence on lowering efficacy expectations than positive messages do on increasing efficacy (Bandura, 1986). The physiological state of physical symptoms can also give us positive or negative feelings toward efficacy. Schunk (1989) referred to symptoms of sweating or rapid heart rates might provide clues about the possible negative or positive efficacy symptoms. Anxiety can have a negative efficacy affect on people just before a presentation or performance. Various things can be done to strengthen self-efficacy, such as goals and feedback, rewards, self-instruction for verbalization of strategies, and participation modeling. The strategy combines skill development and self-efficacy to increase these skills. Many students who operate with high levels of self-efficacy are confident in their skills and abilities to do well in school (Pintrich and DeGroot, 1990).

Career Development and Self-Directed Learning

Self-directed learning can be a significant production and performance factor in the work place when supported by the company. Twenty six percent of all organizations make some use of self-directed work teams that can improve quality, productivity, and customer service dramatically (Wellins, Byham, and Wilson, 1991). Guglielmino (1994) stated that contributing interest from business and industries in self-directed learning can be categorized in three ways. The first is unprecedented rates of technological and social change that require increased flexibility and continuous learning. The second factor is the trends toward utilizing self-directed teams in the workplace. The third is that research findings consistently demonstrate a positive relationship between readiness for self-directed learning and performance. Guglielmino (1994) indicated, "Richard Durr, manager of engineering and quality training for Motorola's Paging Products groups, provides a strong rationale for this position: Self-directed approaches to training and development mesh with the philosophy of the learning organization" (p. 39).

Guglielmino (1994) in another interview stated, “Gary Tooker, Motorola’s president and chief operating officer, has pointed out that our continued success depends on our ability to hire and retain employees at every level who are motivated, bright, flexible” (p. 39).

Trends toward using self-directed work teams show that these teams operate by seeking out what they need to know to get their jobs done. They translate long term goals into definable goals for performance. They gather necessary information and the required skills to meet the goals. Teams that function in this manner accomplish their goals and promote individual development. It is important to understand that there is a link between job performance and level of readiness for self-directed learning. The Self-Directed Learning Readiness Scale (SDLRS) is a self-reporting learning inventory tool used to assess the complex supportive characteristics of self-directed learning (Guglielmino, 1977). This information on self-directed learning readiness was provided by Guglielmino and Guglielmino (1994) in 1980 after conducting SDLRS research with three major corporations in AT&T (753 individuals), in 1985 with a Hong Kong Telephone Company (655 individuals), and by Durr (1992) with Motorola employees (606 individuals). All three of these studies found significant positive relationships between job performance ratings and SDLRS scores. The individuals scoring high on SDLRS scores also showed higher aptitude for change, creativity, and problems solving at work. These employees also showed above average performance ratings at work and were able to recognize the need for further learning to advance performance and to maintain a competitive position. Many companies have found benefits to the company by providing self-directed resources for employees in general studies of their choice. This promotes self-directed learning that allows individuals to research items of their choice but also provides employees resources to improve on-the-job skills and increase levels of performance at work.

“There will be plenty of good jobs out there in the flat world for people with the right knowledge, skills, ideas, and self-motivation to seize them” (Friedman, 2007, p. 278). Many companies have found that just-in-time training is imperative to remain competitive in a global market or fast changing businesses. Self-directed learning offers a way for employees to keep up with change and companies to maintain that competitive edge necessary to remain profitable. Guglielmino (1994) stated self-directed learning offers these significant advantages:

1. The learner manages the learning process in terms of what is to be learned, when it is to be learned, and how it is to be learned.
2. The learning is timed to coincide with the need to learn.
3. The learner is motivated, as a general rule.
4. The costs of learning are greatly reduced.
5. The learning is more relevant, efficient, and effective. (p. 45)

Career development programs play an important part in all levels of an organization that provides employees with the skills and knowledge basics for career management. The process of career management has five essential steps that are important: assessment, investigation, matching, choosing developmental targets, and managing your career path with P-O-W-E-R (Sturman, 1991). There are more ways to develop a career but participants must know what the choices are and which paths to take. It is important for participants or employees to understand that very narrow goals or job positions put the person at a higher risk of not completing the career goal. It is a good idea to understand the company’s long term goals and the different positions that are needed and will be available. Career management and development are helpful tools that promote advancement across the entire company. Job fit is important for both the employee and company. The first step is to conduct an assessment of one’s self to gain a better

understanding of himself, his needs and desires. It is also important to develop an identity and know the needs or requirements to reach a goal that are not yet satisfied, like technical or college degrees that are a necessity. Once the assessment of the participant is finished, he needs to investigate the company goals, personal goals, and opportunities for both parties. The participant must know what the options are for the company in the future and what other options are available in other companies. The next step in the process is to match the personal strengths and goals of the participant to the desired goals. The best job fit for both the participant and the company is the ultimate goal. Once the match is made, the employee will engage in self-directed learning to determine the training needs. The participant will then be encouraged to pick a career strategy that will situate him in a better career based on satisfaction, recognition, and contribution. The developmental targets are drawn out and the employee has a plan. The employee knows where he stands and what the match is, and then can gain a better understanding of the path that must be taken and goals that must be met to successfully pursue the desired job. The participant has to develop these target goals or accomplishments that will prepare adults to acquire the ideal job for both parties.

The final step for career development is to manage it with POWER. Sturman (1991) says managing the career with POWER is an acronym for the following: “P” is for planning development, “O” for obtaining input from others, “W” for working the plan, “E” evaluating the results, and “R” for revisiting as needed. This is a comprehensive and revolving theory that will ensure the process is completely thought out. When change occurs the process will be implemented to learn from and deal with those changes successfully. This is an important process that will help employees stay on target with their career development goals. As

companies expand, these developmental programs are important to growing employee performance and capabilities. Gray and Herr (1998) stated:

In the year 2000 much, if not all, of the fabrication, assembly, and finishing of an automobile will be done by robots, monitored and directed by computers. In most instances during these processes humans will rarely, if ever, touch an automobile as it is being assembled. Rather they will program and maintain the computers and robots that perform these tasks. In such contexts, even though the worker is still classified as engaged in manufacturing and automotive assembly, what that person is actually doing is akin to that of a service industry, to applying information and knowledge to program, operate, and service computers and other forms of advanced technology. (p. 101)

During unfavorable economic times, companies have had the unfortunate but necessary need to downsize and lay off employees. Employees who are very adaptive, self-directed, and high performers are usually the survivors when downsizing occurs. Corporate managers need to realize that self-directed learners may be their most valuable resource as economic conditions deteriorate. “Technical skills learned at a postsecondary level, not necessarily college, are becoming the expectation for high-skills/high-wage employment in many occupations, including skilled workers and technicians” (Gray & Herr, 1998, p. 102).

Summary

The theories and practices of the self-directed learning phenomena have evolved into more psychologically advanced perspectives. Much has been learned from the previously designed research instruments like Guglielmino’s SDLRS (1977) in formal education settings. Hogg (2008) broadened the reach of such instruments with the SALT instrument developed and field tested in his research in 2008. The same instrument has not been extended into the poultry

industry to gain a better perspective on self-directed learning tendencies with respect to adults in agriculture. It is the intention of this study to reach further into the phenomena of self-directed research and to add meaningful content to this broad subject.

The history of the field of adult learning is rich with information and examples. The self-directed focus of this literature review is fruitful with research, knowledge and advice on improving programs for such adult learners. The motivational, self-regulatory and self-efficacy perspectives add depth to the complexity that exists between the topic of self-direction and other psychological methods and interests that are involved in adult learning. The career development interests also help shape this information and provide it with an end product or goal to exhibit toward the end as a milestone for improvement in new technologies in the current job market.

Chapter 3 Methods

Introduction

This chapter contains six sections. The first section includes information about the purpose of the study. The second section involves the research questions. The third section discusses the population sample. The fourth section involves the validity and reliability of the study. The fifth section involves a discussion about the data collection and procedure. The sixth section discusses the analysis of the data. The summary comprises the last section.

Purpose of Study

The purpose of this study was to gain a better understanding of self-directed learning traits in the Alabama live production poultry industry. The data retrieved from this study will aid educators and trainer's ability to create more effective educational training programs in the poultry industry. By examining differences in self-directedness, education, position type and years of service, training programs can be better designed to fit the needs of the poultry industry. Information learned about self-directed learning traits in the poultry industry will enable workforce education and training programs to be tailored to fit those needs. Training programs in the poultry industry and other agricultural based programs benefit from this study to better accommodate these employees and sustain agriculture-based production through education in the United States.

Research Questions

The following research questions guided this study:

1. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on position type?
2. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on level of education obtained?
3. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on years of employment?

Population Sample

The population for this study included traditional-aged employees working in the live poultry production industry in Alabama and surrounding states (Tennessee, Mississippi, Georgia, and Florida). Participants from other states often work from offices located in surrounding states, but work with contract farms located in Alabama. Approximately 232 live production poultry employees were surveyed for the study and 159 (68.5%) completed the survey and returned it. The 159 participants surveyed in this study consisted of males and females between the ages of 23 and 68. These employees are separated by position type and were either live production service technicians or managers (see Table 3). There were 124 (77.98 %) service technicians who participated and 35 (22.01 %) managers participating in this study. Ten (6.29 %) of the participants were females and 149 (93.71 %) participants were males. The average age of the participants was 39.5 years with average of 14 years of service in the poultry industry. The

educational distribution of these employees was placed into four different categories: 1) 34 (21.38 %) employees completed high school; 2) 22 (13.84 %) employees completed some type of vocational schooling; 3) 95 (59.75 %) employees completed a bachelor’s degree; and 4) eight (5.03 %) employees obtained graduate degrees. All participants (100%) were of Caucasian or white ethnicity.

Table 3

Population Sample Survey of Adult Learning Traits (SALT)

Survey Instrument Information		
	n	%
Surveys Offered	232	100
Surveys Returned	159	68.5
Employee Demographics		
	n	%
Service Technicians	124	77.98
Managers	35	22.01
Females	10	6.29
Males	149	93.71
White Ethnicity	159	100
Employee Education Distribution		
	n	%
Some High School	0	0
High School	34	21.38
Vocational School	22	13.84
Bachelor’s Degree	95	59.75
Graduate Degree	8	5.03

This survey was administered at two different times in the same week at two different locations at the end of poultry industry educational seminar presentations. This was completed by Auburn University Institutional Review Board (IRB) guidelines, saved time, money, allowed for speedy data collection, ensured that only the target audience took the survey and made surveying convenient for the population surveyed. The following survey questions are organized as follows:

Motivation/Self-regulation

1. I enjoy learning something related to my work.
2. I can put off doing something I want to do to study work related information.
3. I am ready to participate in training that helps me advance into a better and higher paying job.
4. I can manage my own efforts to learn outside of a classroom.

Cognition/Cognitive strategies

5. It is usually easy for me to learn something new.
6. I am good at finding helpful resources, such as books or people who can help me learn.
7. I can evaluate my progress towards learning new skills as I go along.
8. I am good at developing strategies for learning new materials or skills.
9. I can change the way I study if what I am doing is not working.

Social/Environmental Elements

10. I have personal time available that I can set aside for learning.
11. I feel encouraged by friends, family, or other people I work with so spend time learning something new.
12. There is somewhere I can go, which is a good place to study.

13. My workplace is free from distractions that interfere with learning new job skills.
14. I am not too tired after work to spend time learning something new.

Data Collection Design and Procedure

The permission to conduct this study was granted by the Director of the National Poultry Technology Center (NPTC), James O. Donald. The participants were approached during a seminar and workshop after all presentations had been completed in the Fall of 2009. All procedures and guidelines were followed and executed in accordance with the Auburn University Institutional Research Board. The target population was live production poultry industry employees over the age of 19. The participants were informed that the purpose of the study was to survey existing levels of self-directedness of live production poultry employees and each was given an Information Letter (Appendix C). The participants were also given an envelope packet including a Demographic Information Sheet (Appendix A) and survey instrument, and Survey of Adult Self-Directed Learning Traits (Appendix B).

The participants were given the information to be filled out and placed back into the envelope, and asked to place the envelope into a collection box at the rear of the room as they leave the room to maintain anonymity. The participants were given instruction to not place their name or any other personal information on the survey. Approximately 232 poultry industry employees were offered the invitation to participate in this study and 159 (68.5%) participants completed and returned the survey. There was no other information solicited of the participants during the data collection process except for the information outlined by the Survey of Adult Self-Directed Learning Traits (Appendix B). Participants were given the option to contact the principal investigator in the event that they should want a copy of the results of the study. No other information was made available and all submitted information will remain anonymous.

Measures

This instrument, the Survey of Adult Learning Traits, consists of fourteen questions. It was developed to measure the impact of a person's ability to be self-directed to gain knowledge, learn new skills and foster an understanding and the application of the new knowledge. These fourteen survey questions are categorized into 3 sections and their answers placed into a Likert-type scaled format from 1, which means the participant *Strongly Disagrees* with the question, to a 5 rating, which means the participant *Strongly Agrees* with the question or statement. The 3 sections the survey questions are arranged into are listed as follows:

Section 1: Motivation and Self-Regulation

This section consists of four questions and statements to assess an employee's motivation for learning new skills, expanding their knowledge about job assignments and assessing an employee's ability to organize and manage the process of learning new information.

Section 2: Cognitive Elements

This section has of five questions or statements that focus on a person's ability to use cognitive strategies, learn new things, and evaluate their learning processes on their own.

Section 3: Social/Environmental

The final section has five statements that assess environment from a work, social, and physical perspective that has an impact on a person's ability to learn new information.

Validity

The survey instrument used in this study is the Survey of Adult Learning Traits designed by Hogg (2008), to study the self-directed learning traits of factory workers in Alabama. The validity of an instrument refers to, "whether a person can draw any meaningful and useful inferences from scores on the instruments" (Creswell, 2003, p. 157). The three factor groups of

motivation/self-regulation, cognition/cognitive strategies, and social/environmental element. Hogg (2008) used conducted a confirmatory factor analysis using AMOS 7.0 to determine the theoretical structure fit the data and then to determine construct validity. The construct validity was confirmed after a restricted model using Chi-square. The motivation and self-regulation scale scored statistically significant at or below the .05 level. Meyers, Gamst, and Guarino (2006) recommended criterion for standardized beta weights as a measured of association is 0.40 or higher. The cognitive element scale had standardized beta weights that ranged from 0.60 to 0.81. The social element scale had standardized beta weights that ranged from 0.57 to 0.88.

Analysis of Data

The collected data was entered into SPSS version 16 to analyze the survey results and demographic information to identify trends. Results from this study are discussed in Chapter 4. Statistical procedures for data analysis included one Factorial MANOVA, Cronbach's internal consistency alpha, multiple regression models with multiple correlations and the relationship between years of employment with motivation, cognition and social elements.

Summary

This chapter addressed the purpose of the study, population sample, data collection design and procedure, and analysis of data of the study. The review of literature concerning self-directed learning and other interrelated learning factors contributed to the analysis of self-directed learning tendencies and the use of the SALT instrument previously used to research employees in a manufacturing setting. The SALT instrument included fourteen questions divided into 3 sub-categories, motivation/self-regulation, cognitive factors, and social/environmental. The demographic information recorded was years of employment, gender, job type, and education level.

Chapter 4 Findings

Introduction

This research study was conducted using the Survey of Adult Learning Traits (SALT) instrument designed by Hogg (2008) to examine factory workers' self-directed learning tendencies. It was used to assess the same learning tendencies of live production poultry service technicians and managers in this research. These employees are not employed in a factory but are field representatives of integrated poultry companies who contract growers in rural farm areas.

Purpose of Study

The purpose of this study was to gain a better understanding of self-directed learning traits in the Alabama live production poultry industry. The data retrieved from this study will aid educators and trainer's ability to create more effective educational training programs in the poultry industry. By examining differences in self-directedness, education, position type and years of service, training programs can be better designed to fit the needs of the poultry industry. Information learned about self-directed learning traits in the poultry industry will enable workforce education and training programs to be tailored to fit those needs. Training programs in the poultry industry and other agricultural based programs benefit from this study to better accommodate these employees and sustain agriculture-based production through education in the United States.

Research Questions

The following research questions guided this study:

1. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on position type?
2. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on level of education obtained?
3. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on years of employment?

Demographic Results

The population for this study included employees working in the live poultry production industry in Alabama and surrounding states (Tennessee, Mississippi, Georgia, and Florida). Approximately 232 live production poultry employees were surveyed and 159 (68.53%) completed the survey. Demographic results for the participants in this survey are shown in Table 4. The majority of employees who participated in this survey were service technicians. There were approximately 3.5 service technicians for each manager represented. These employees are separated by position type and were live production service technicians or managers. 124 (77.98 %) service technicians and 35 (22.01 %) managers participated in this study. Ten (6.29 %) of the participants were females and 149 (93.71 %) participants were males. The participants' ages ranged from 23 to 68 with an average age of 39.5 years. The years of employment averaged 14 years with a range from 1 to 48 years. The educational distribution of these employees was 34

(21.38 %) completed high school; 22 (13.84 %) completed some type of vocational schooling; 95 (59.75 %) completed a bachelor's degree; and 8 (5.03 %) obtained graduate degrees. All participants (100%) were of Caucasian or white ethnicity. This sample is representative of the poultry industry, due to the number of participants this resulted in a low observed power.

Table 4

Participant Demographic Information

Employee Demographics		
	n	%
Service Technicians	124	77.98
Managers	35	22.01
Females	10	6.29
Males	149	93.71
White Ethnicity	159	100
Employee Education Distribution		
	n	%
Some High School	0	0
High School	34	21.38
Vocational School	22	13.84
Bachelor's Degree	95	59.75
Graduate Degree	8	5.03

The mean participant age was 39.54 (see Table 5) with a standard deviation of 10.08 and range of 23 to 68. The mean year of employment for participants was 14.28 with a standard deviation of 9.81 and range of 1 to 48.

Table 5

Participant Demographic Information

	M	SD	Range
Age	39.54	10.08	23-68
Years	14.28	9.81	1-48

Reliability

The reliability analysis for this survey was conducted to show if the scale used in the survey yielded accurate measurements. The original SALT survey developed by Hogg (2008) used a reliability alpha score of 0.60 or higher due to the exploratory nature of the survey at its conception. The reliability statistics in the SALT survey used by Hogg (2008) were as follows: motivation = 0.60; cognitive = 0.81; and social = 0.77. After factor analysis was conducted the alpha result estimates ranged from 0.767 to 0.830 as listed below (see Table 6). George and Mallery (2003) give the following rules of thumb for dictating reliability: “_ >0.9 is Excellent, _ >0.8 is Good, _ >0.7 is Acceptable, _ >0.6 is Questionable, _ >0.5 is Poor, and _ <0.5 is unacceptable” (p. 231). The reliability rating for the motivation and self-regulation domain (0.791) and the cognitive domain (0.767) were considered good and reliable based on George and Mallery’s (2003) rule of thumb. The Cronbach’s Alpha rating for social and environmental elements (0.830) rated excellent and reliable based on George and Mallery’s (2003) scale.

Table 6

Alpha Reliability Coefficients in Survey of Adult Learning Traits Scales

SALT Categories	Alpha Coefficient
Motivation/Self-regulation	0.791
Cognition/Cognitive strategies	0.767
Social/Environmental Elements	0.830

Factor analysis of the 14 original survey questions resulted in the elimination of one question from both the motivation and cognitive groups in this research analysis. Factor analysis also resulted in two questions being exchanged between the motivation and cognitive groups. The motivation group had three remaining question, the cognitive group had four questions remain and the social group had five remaining questions. The remaining 12 questions are listed below after factor analysis was conducted:

Motivation/Self-regulation

1. I enjoy learning something related to my work.
2. I am ready to participate in training that helps me advance into a better and higher paying job.
3. It is usually easy for me to learn something new.

Cognition/Cognitive strategies

4. I can manage my own efforts to learn outside of a classroom.
5. I am good at finding helpful resources, such as books or people who can help me learn.
6. I am good at developing strategies for learning new materials or skills.
7. I can change the way I study if what I am doing is not working.

Social/Environmental Elements

8. I have personal time available that I can set aside for learning.
9. I feel encouraged by friends, family, or other people I work with so spend time learning something new.
10. There is somewhere I can go which is a good place to study.
11. My workplace is free from distractions that interfere with learning new job skills.
12. I am not too tired after work to spend time learning something new.

Research Question 1 and 2 Analysis

The following research question analysis was conducted using a factorial MANOVA between the two position types of employees (service technician or manager), education levels (some high school, high school, vocational school, bachelor's degree, and graduate degree), and the three dependent variables of social, motivation or cognitive elements. The descriptive statistics are shown, as well as Pillia's Trace for the multivariate test analysis. The first two research questions were combined during this analysis to reduce the Type I error and analyze the data to observe interaction between the two variables of position and education. The two research questions were:

1. What is the difference in the motivation and self- directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on position type?
2. What is the difference in the motivation and self- directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on level of education obtained?

The descriptive statistics (see Table 7) show the mean, standard deviation, and number of participants for each category. The motivation scale shows 124 service technicians posted a mean score of 14.26 with a standard deviation of 1.11 and 35 managers posted a mean of 14.80 with a standard deviation of 0.63. The cognitive scale shows the same number of service technicians scored a mean of 16.56 with a standard deviation of 2.22 and the managers mean of 17.14 with standard deviation of 1.73. The social element analysis for this section showed service technician mean scores of 18.41 with a standard deviation of 3.20 with managers mean score of 19.97 and a standard deviation of 2.38.

Table 7

Descriptive Statistics for Position with Motivation, Cognitive and Social

	Position	M	SD	n
Motivation	Service Tech.	14.26	1.11	124
	Manager	14.80	.63	35
	Total	14.38	1.05	159
Cognitive	Service Tech.	16.56	2.22	124
	Manager	17.14	1.73	35
	Total	16.69	2.13	159
Social	Service Tech.	18.41	3.20	124
	Manager	19.97	2.38	35
	Total	18.76	3.10	159

The descriptive statistics (see Table 8) show the mean, standard deviation, and number of participants for motivation. For scores within motivation, 34 high school level educated participants posted a mean score of 14.15 with a standard deviation of 1.21, 22 vocational college level participants scored a mean of 14.64 with a standard deviation of 0.95, 95 participants with bachelor's degrees scored a mean of 14.38 with a standard deviation of 1.00, and the 8 graduate degree participants had a mean of 14.63 with a standard deviation of 1.06.

Within the cognitive domain, (see Table 8) 34 high school level educated participants posted a mean score of 16.68 with a standard deviation of 1.68. The 22 vocational college level participants scored a mean of 17.05 with a standard deviation of 1.89. 95 participants with bachelor's degrees scored a mean of 16.60 with a standard deviation of 2.32, and the 8 graduate degree participants had mean scores of 16.75 and standard deviation of 2.13.

Within the social domain, (see Table 8) shows 34 high school level educated participants posted a mean score of 19.44 with a standard deviation of 2.70. 22 vocational college level participants scored a mean of 19.45 with a standard deviation of 2.82. 95 participants with

bachelor's degrees scored a mean of 18.31 with a standard deviation of 3.29. 8 graduate degree participants had mean scores of 19.13 and standard deviation of 2.59.

Table 8

Descriptive Statistics for Education with Motivation, Cognitive and Social

	Education	M	SD	n
Motivation	High School	14.15	1.21	34
	Vocational	14.64	.95	22
	Bachelor's	14.38	1.00	95
	Graduate	14.63	1.06	8
	Total	14.384	1.05	159
Cognitive	High School	16.68	1.68	34
	Vocational	17.05	1.89	22
	Bachelor's	16.60	2.32	95
	Graduate	16.75	2.38	8
	Total	16.69	2.13	159
Social	High School	19.44	2.70	34
	Vocational	19.46	2.82	22
	Bachelor's	18.32	3.29	95
	Graduate	19.13	2.59	8
	Total	18.76	3.10	159

The Box's test of equality of covariance matrices tests for the assumption of the factorial MANOVA on the homogeneity of covariance. The significance level must be above 0.05 (p-value = 0.05) in order to not violate the assumption of homogeneity of covariance. The p-value for this test of position and education compared to motivation, cognitive and social elements was $p = 0.003$. Therefore the homogeneity of covariance was violated.

The multivariate test table below (see Table 9) analysis for the interaction between education and position presents the results of the factorial MANOVA. No significant difference found between an employee's position type and the level of self-directedness toward learning,

Pillai's Trace = .056, $F(9,453) = .949$, the p-value is .482. Due to statistical significance not being found, no follow up tests were conducted.

The multivariate test table below (see Table 9) analysis for position states the results of the factorial MANOVA. There is no statistically significant difference was found between an employee's position type and the level of self-directedness toward learning, Pillai's Trace = .029, $F(3,149) = 1.489$, and the p-value is .220. No statistical significance was found, therefore no follow up tests were conducted.

The multivariate test table below (see Table 9) analysis for education alone states the results of the factorial MANOVA. There is no statistically significant difference between an employee's position type and the level of self-directedness toward learning, Pillai's Trace = .018, $F(9,453) = .304$, the p-value is .974. No statistical significance found and no follow up tests were conducted.

Table 9

Multivariate Analysis

	Position and Education	Position	Education
	Pillai's Trace	Pillai's Trace	Pillai's Trace
<i>Value</i>	.056	.029	.018
<i>F</i>	.949	1.489	.304
<i>df</i>	(9, 453)	(3, 149)	(9, 453)
<i>p-value</i>	.482	.220	.974
<i>Partial Eta Squared</i>	.019	.029	.006
<i>Observed Power</i>	.476	.388	.157

Research Question 3 Analysis

The following research question analysis was conducted using regression analysis of years of service to predict the motivation, cognitive, and social elements. The third research question was:

3. What is the difference in the motivation and self-directed learning tendencies, perception of one’s cognitive learning strategies, and social environmental elements of poultry industry employees based on years of employment?

The descriptive statistics (see Table 10) shows the mean, standard deviation, and number of participants for each category. Years of service had a mean score of 14.28 with a standard deviation of 9.80. The motivational category had a mean score of 14.38 with a standard deviation of 1.05. The cognitive category had a mean score of 16.69 with a standard deviation of 2.13. The social category had a mean score of 18.76 with a standard deviation of 3.10.

Table 10

Descriptive Statistics for Years with Motivation, Cognitive and Social

	<i>M</i>	<i>SD</i>	n
Years	14.28	9.81	159
Motivation	14.38	1.05	159
Cognitive	16.69	2.13	159
Social	18.76	3.10	159

The Pearson Correlation (see Table 11) between motivation and years of employment was very low at .052. The Pearson Correlation between cognitive and years is very low at -.034. The Pearson Correlation between social and years was very low at .027. No significant relationship exists between the years of employment and the self-directed tendencies of

motivation, cognitive or social domain. However a low level of correlation does exist between the motivation and cognitive domains, .249, and social and cognitive domains, .546.

Table 11

Correlation for Years with Motivation, Cognitive and Social

	Years	Motivation	Cognitive	Social
Years	1.00			
Motivation	.052	1.00		
Cognitive	-.034	.249*	1.00	
Social	.027	.128	.546*	1.00

*. Correlation is significant at the 0.01 level (2-tailed).

The regression analysis (see Table 12) indicated that a significant relationship was not found between the years of service of an employee in the domain with $F(1,159) = .426$ and the p-value was .515. No significance was found. The coefficient of determination ($R^2 = .003$) indicate that approximately 0.3% of the variance in the motivation domain scores could be accounted for by its linear relationship with the years of service an employee served.

The regression analysis (see Table 12) results did not find a significant relationship between the years of service of an employee with the cognitive domain with $F(1,159) = .178$ and the p-value is .673. No significance was found. The coefficient of determination ($R^2 = .001$) indicate that approximately 0.1% of the variance in the cognitive domain scores could be accounted for by its linear relationship with the years of service an employee served.

The regression analysis (see Table 12) results indicated that an insignificant relationship exists between the years of service of an employee with the social domain with $F(1,159) = .115$ and the p-value is .735. No significance was found. The coefficient of determination ($R^2 = .001$)

indicated that approximately 0.1% of the variance in the social section of the domain scores could be accounted for by its linear relationship with the years of service an employee served.

Table 12

Regression for Years with Motivation, Cognitive and Social

	<i>R squared</i>	<i>F</i>	<i>df</i>	<i>p-value</i>
Motivation	.003	.426	(1, 157)	.515
Cognitive	.001	.178	(1, 157)	.673
Social	.001	.115	(1, 157)	.735

Summary

There was no significance found in the position type (service technician or manager), the education level obtained (high school, vocational college, bachelor's degree, and graduate degree), or years of employment in this research when compared. Statistical analysis was conducted on these three self-directed learning factors motivation, cognitive and social elements, and no significance was found. The sample population is slightly skewed in two ways. The sample was low with only 8 (5%) for participants with a graduate degree and high for those with bachelor's degrees at 95 (59.8%) of the sample. This uneven distribution of educational levels is a realistic sample of the population that exists in this industry however.

Chapter 5

Summary, Conclusions, Implications, and Recommendations

Introduction

The objective of this research study was to expand the work of Hogg (2008), with the development of the Survey of Adult Learning Traits. This study was created to be used with employees in a manufacturing environment to measure an employee's motivational, social, and cognitive learning characteristics. It has now been introduced into the agricultural field and used with poultry production managers and service technicians in an attempt to measure their self-directed learning readiness in the similar manner. The introduction for this dissertation is located in chapter 1. Chapter 2 discusses what was found in previous research about learning theory, adult learning, learning projects, motivation and self-regulation, self-efficacy, and career development with respect to self-directed learning review of literature. The methods used to conduct the dissertation can be found in chapter 3. The results for finding are located in chapter 4. The summary, conclusions, implications, and recommendations for this study are located in this chapter, chapter 5.

Purpose of Study

The purpose of this study was to gain a better understanding of self-directed learning traits in the Alabama live production poultry industry. The data retrieved from this study will aid educators and trainer's ability to create more effective educational training programs in the poultry industry. By examining differences in self-directedness, education, position type and years of service, training programs can be better designed to fit the needs of the poultry industry.

Information learned about self-directed learning traits in the poultry industry will enable workforce education and training programs to be tailored to fit those needs. Training programs in the poultry industry and other agricultural based programs benefit from this study to better accommodate these employees and sustain agriculture-based production through education in the United States.

Research Questions

The following research questions guided this study:

1. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on position type?
2. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on level of education obtained?
3. What is the difference in the motivation and self-directed learning tendencies, perception of one's cognitive learning strategies, and social environmental elements of poultry industry employees based on years of employment?

Summary

The survey instrument was given to 232 poultry managers and service technicians in Alabama and returned by 159 (68.53%) of them. There was no significant differences found in this research project comparing the position type (service technician or manager), the education level (high school, vocational college, bachelor's degree, and graduate degree), or years of employment. Each of these variables were tested and compared to three self-directed learning domains of motivation, cognitive and social elements. The educational distribution of the

employees was skewed to those with bachelor's degrees at 95 (59.77%) of the sample and toward those participants with graduate degrees with eight (5%) of the sample.

The alpha reliability for SALT initially hosted 14 questions on the Hogg (2008) version of the instrument. After the reliability analysis was conducted for this group the Cronbach's Alpha ratings improved to 0.79 (from 0.60) for motivation and self-regulation, reduced slightly in the cognitive domain to 0.77 (from 0.81), and improved to 0.83 (from 0.77) in this study. This reliability analysis resulted in the extraction of two questions.

Conclusions

One possible reason for the insignificance found in this research is that the observed power in those participants with graduate degrees was low compared to all other education levels. Therefore this study added to the collected database and analysis of this instrument as a SDL survey of employees in the workforce. As this SALT survey is used more in the field and in research studies more information will be gained and improved knowledge of this subject. The instrument will be refined with subsequent uses along with the research and knowledge of individuals outside of the formal classroom environment.

Implications

Hogg (2008) found a significant difference between his two groups of respondents within the areas of motivation and cognition. Those two groups were those with some high school or a high school diploma and those with some college or a vocational certification. Hogg (2008) found that, "those respondents with some college or vocational certification were more likely to indicate they were willing to participate in training in order to obtain higher paying jobs" (p. 88). Those with college or vocational certificates also indicated they felt it was easier to learn new

information and confidence in their ability to develop strategies for learning new information. This study did not find the same significance between the same groups.

The information found in this study could have been used to develop subsequent training programs that could be tailored to fit the self-directed learning capability into three levels. The introductory level or first level would be tailored to accommodate the less self-directed individuals in the industry. This lower level training program would involve instructor directed classroom and hands-on field training with stringent guidelines and interactive feedback. This level could serve as an introductory level training program.

The second or intermediate level training program could be organized with initial classroom meeting sessions with group interaction and collaboration with the instructor to help guide these individuals based on the individual group needs to solve problems. After initial classroom sessions field trials and tests would be conducted to improve the learning strategies of hands-on training. Once these two sessions are conducted then individual learning projects would be given and the results would be assessed at the end of this level training program.

The third advanced level training program, designed to meet the needs of the most self-directed learning oriented individuals would be conducted out in the field initially for the introduction of the program. The rest of the program would involve only group and individual learning projects that are designed to use only limited resources to conduct field trials and learning projects. These individuals would assess, troubleshoot, and resolve their own projects and problems as necessary to train these individuals at their own pace and level.

Other training programs could be conducted remotely through online communication simply by conducting an online seminar where the participants can watch the program introduction and instructions on the computer. The participants could conduct their field projects

in their hometown and possibly at work or after work and collect their data. Once the projects are completed the participants and the instructor could collaborate via interactive television or online to present their projects, discuss their results, and conclusions. This type of training program would reduce the cost of traveling and limit the disruptions while using the different levels of self-directed learning opportunities at their fullest.

Recommendations

Similar studies could be conducted in other agricultural industries such as the beef, pork, and turkey production employees to broaden this research database to include similar work environments. Other studies on self-directed learning traits could be conducted with employees in the processing and further processing phases of the poultry and other meat producing industries to see if similar results exist in these areas of work for comparison to this study.

Further research should be conducted in the table egg industry in states like California, Iowa, Nebraska and other major table egg producing states. Replicated studies should be conducted in other geographical areas in the United States, for instance, Arkansas, Georgia, Mississippi, North Carolina, Delaware, Maryland, Virginia and other poultry producing states.

Similar studies could also be conducted during improved economic times, for example when corn and soybean prices, fuel prices, and oil prices are less volatile. Escalated feed prices have challenged meat-production industry in the United States and caused substantial cutbacks in other areas of production. This has caused several smaller companies to go out of business and placed financial strain on those remaining. Fuel prices have increased poultry grower operating costs thus reducing net income and as a result troubled the company and grower relationships. The economic downturn has depressed the livelihood and moral of the entire poultry and other meat producing markets.

Other studies should be conducted with a more balanced distribution of females and males to provide insight on a more uniform gender population. Recommendations call for similar studies to include a more diverse racial background to include employees of other ethnicity or in other countries such as Brazil, Canada, China, South American, Australia, Israel and other major poultry producing countries to compare self-directed learning tendencies using this same survey.

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Appendices

Appendix A
Demographic Information Sheet

Survey of Adult Self-Directed Learning Traits

Information Sheet

Purpose:

This survey is being used to provide additional insight into how employees learn new information and skills with respect to self-directedness in a workplace setting.

Background Information:

Age: _____	Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female	Years of employment: _____
Current Position: <input type="checkbox"/> Manager <input type="checkbox"/> Service Technician		
Educational Status:	<input type="checkbox"/> Some High School <input type="checkbox"/> High School <input type="checkbox"/> Vocational College	
	<input type="checkbox"/> Bachelors Degree <input type="checkbox"/> Graduate Degree	

Instructions:

The statements on the following pages describe opinions on issues related to how you like to learn new skills and information related to work. You are asked to rate whether you agree or disagree with the statement on a scale ranging from 1 to 5. The following example illustrates how to complete the survey:

Example Question:

Please Circle The Number That Best Describes Your Answer

Example Survey Question	Strongly Disagree	Somewhat Disagree	Neutral	Agree	Strongly Agree
Do you enjoy learning new skills and information related to your work?	1	2	3	4	5

After reading each statement on the following pages, please indicate your opinion by circling one number on the scale. Completed forms can be placed back into the original envelope and placed into a collection box located by the door exiting the room. In order to maintain confidentiality, do not sign any of the pages. Thank you for your participation!

Appendix B

Instrument Survey of Adult Learning Traits

Survey of Adult Learning Traits

* Circle the numbers to the right, which most accurately represents your opinion.
(Circle only one per item.)

**How I think
about his issue:**

#1 strongly disagree	#2 disagree	#3 neutral	#4 agree	#5 strongly agree
----------------------------	----------------	---------------	-------------	-------------------------

1. I enjoy learning something related to my work.
2. I can put off doing something I want to do to study work related information.
3. I am ready to participate in training that helps me advance into a better and higher paying job.
4. I can manage my own efforts to learn outside of a classroom.
5. It is usually easy for me to learn something new.
6. I am good at finding helpful resources, such as books or people who can help me learn.
7. I can evaluate my progress towards learning new skills as I go along.
8. I am good at developing strategies for learning new material or skills.
9. I can change the way I study if what I am doing is not working.
10. I have personal time available that I can set aside for learning.
11. I feel encouraged by friends, family, or the people I work with to spend time learning something new.
12. There is somewhere I can go, which is a good place to study.
13. My workplace is free from distractions that interfere with learning new job skills.
14. I am not too tired after work to spend time learning something new.

	#1	#2	#3	#4	#5
1. I enjoy learning something related to my work.	1	2	3	4	5
2. I can put off doing something I want to do to study work related information.	1	2	3	4	5
3. I am ready to participate in training that helps me advance into a better and higher paying job.	1	2	3	4	5
4. I can manage my own efforts to learn outside of a classroom.	1	2	3	4	5
5. It is usually easy for me to learn something new.	1	2	3	4	5
6. I am good at finding helpful resources, such as books or people who can help me learn.	1	2	3	4	5
7. I can evaluate my progress towards learning new skills as I go along.	1	2	3	4	5
8. I am good at developing strategies for learning new material or skills.	1	2	3	4	5
9. I can change the way I study if what I am doing is not working.	1	2	3	4	5
10. I have personal time available that I can set aside for learning.	1	2	3	4	5
11. I feel encouraged by friends, family, or the people I work with to spend time learning something new.	1	2	3	4	5
12. There is somewhere I can go, which is a good place to study.	1	2	3	4	5
13. My workplace is free from distractions that interfere with learning new job skills.	1	2	3	4	5
14. I am not too tired after work to spend time learning something new.	1	2	3	4	5

Appendix C
Informed Consent Letter

Auburn University

Auburn University, Alabama 36849-5221

Educational Foundations
Leadership and Technology
4036 Haley Center

Telephone: (334) 844-4460
Fax: (334) 844-3072

**NOTE: DO NOT PARTICIPATE IN THIS STUDY UNLESS
AN IRB APPROVAL STAMP WITH CURRENT DATES HAS BEEN APPLIED TO THIS DOCUMENT**

INFORMATION LETTER

for a research study entitled

“Measuring Tendencies Toward Self-Directedness of Live Production Managers and
Service Technicians in the Alabama Poultry Industry”

You are invited to participate in a research study to develop a survey instrument for gaining insight into how people learn in the workplace. Jesse C. Campbell is conducting the study under the direction of Dr. James E. Witte in the Auburn University Department of Adult Education. You were selected as a possible participant because you are employed and over 19 years old.

If you decide to participate, you will be asked to complete a survey form. Your total time to complete this survey will be about 10 minutes. There are no risks of participation. You will not be judged or evaluated based on this survey and you will not sign your name on the form.

The completed survey instrument must be placed back into the original packet envelope and placed into the slot in the top of the collection box located next to the door as you exit the room. Your participation is completely voluntary. If you change your mind about participating, you can stop at any time and discard the survey. However, once you have placed your survey into the collection box, we won't be able to withdraw your information since you will be providing it anonymously. Your decision about whether to participate or not will not jeopardize your relations with Auburn University, the Department of Adult Education, or the integrated poultry company you are employed with.

Any data obtained during this survey will remain anonymous. We will protect your privacy and the data you provide by not having you sign your name. Information collected through your participation may be used by Jesse C. Campbell to complete the requirements of a doctorate in Adult Education.

If you have any questions about this study, please ask them now or contact Jesse C. Campbell at Auburn University in Auburn, Alabama, phone # (334)-332-6830 or at home, phone # (334)- 821-9819. If you would like a summary copy of the findings of this survey when it is complete, contact Jesse C. Campbell at the phone numbers provided.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance of the Institutional Review Board by phone # (334)-844-5966 or e-mail at hsubject@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, THE DATA YOU PROVIDE WILL SERVE AS YOUR AGREEMENT TO DO SO. THIS LETTER IS YOURS TO KEEP.


Jesse C. Campbell

Date

The Auburn University
Institutional Review Board
has approved this document for use
from 9/20/09 to 9/19/10
Protocol # 09-257 EX 0909