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## Technology, Learning, and Individual Differences

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### Abstract

The learning needs for adults that result from the constant increase in technology are rooted in the adult learning concepts of (a) andragogy, (b) self-directed learning, (c) learning-how-to-learn, (d) real-life learning, and (e) learning strategies. This study described the learning strategies that adults use in learning to engage in an online auction process. The findings indicated that (a) the learning process of the participants supported adult learning principles, (b) there are additional descriptors for the learning strategy preference groups, (c) learners can achieve similar learning tasks by using different learning strategies, and (d) traditional literacy and computer literacy skills are enhanced by Internet use.

### Adult Learning

Transitional periods such as the Information Revolution offer tremendous occasions for learning. Adult learners participating in this revolution use a unique combination of skills and strategies to seize the opportunities at hand. This type of learning is rooted in the adult learning concepts of (a) andragogy, (b) self-directed learning, (c) learning-how-to-learn, (d) real-life learning, and (e) learning strategies. These concepts are all vital to understanding the methods adults use when learning on the Internet and more specifically on the eBay auction site.

### Andragogy

In any study involving adult learning processes, it is important to be familiar with the learning model known

as andragogy. Andragogy is the art and science of helping adults learn (Knowles, 1980, p. 43). Malcolm Knowles popularized this term and is recognized as the father of andragogy although Alexander Kapp, a German grammar school teacher, first used the term (Knowles, Holton, & Swanson, 1998, p. 59).

Knowles' (1980) andragogical model was originally based on four basic assumptions of adult learners. As people develop, their (a) self-concept moves from dependence to self-direction, (b) experiences become a storehouse to access during learning, (c) learning readiness adapts to the developmental tasks of social roles, and (d) knowledge adaptation becomes immediate and their orientation shifts from subject-centeredness to performance-centeredness (pp. 43-44).

While some have argued against the value of Knowles' andragogical model, his work is the foundation of thinking in the field of adult learning

during the last decade (Hiemstra & Sisco, 1990; Merriam, 2001). Andragogy is “a term that ‘belongs’ to adult education” (Merriam & Brockett, 1996, p. 135).



### **Self-Directed Learning**

Just as society is experiencing this eruption in dissemination of information through the Internet, adult education too is changing with the rapid expansion of research in the area of self-directed learning. While unidentified for centuries, self-directed learning has only become formally recognized and studied during the last several decades (Knowles, 1990). The field of Adult Education and adult educators have become increasingly interested in self-directed learning since the 1970s (Long, 1992). Self-directed learning is a process frequently associated with the field of Adult Education. The process occurs when:

Individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (Knowles, 1975, p. 18)

The concept of self-directed learning applies to many learning events in the Information Age. Some may be quite simple such as learning to operate a

computer mouse while others are very complex such as learning to design and assemble an heirloom quilt or a stained glass window. These events may involve one or more participants and may occur in formal or informal settings. Research related to self-directed learning reveals that 90% of adults conduct at least one self-directed learning project annually (Tough, 1978) and that 70% of adult learning is self-directed in nature (Tough, 1978).

Knowles describes two concepts of self-directed learning (Brookfield, 1986; Candy, 1991). First, self-directed learning is self-teaching in which learners have power over all mechanical aspects and approaches of their learning processes. Secondly, self-directed learning is personal autonomy or “taking control of the goals and purposes of learning and assuming ownership of learning” (Knowles, 1998, p. 135).

An attempt to categorize self-directed learning works to restrict its broad meaning. Simply stated, self-directed learning is any process where the learner is the decision-maker and in control of the learning process. Indeed, self-directed learning is a freedom that all learners should be permitted to explore (Rogers, 1969). "It is self-initiated. Even when the impetus or stimulus comes from the outside, the sense of discovery, of reaching out, of grasping and comprehending, comes from within" (p. 5).

### **Learning-How-to-Learn**

Quite often, adult learners come into a learning situation with the key to a powerful process. That process is known as learning-how-to-learn. Learning-how-to-learn may mean different things for different people. In the last three decades, the seminal research on learning-how-to-learn was compiled by Robert M. Smith. He developed a theory and repertoire of training exercises founded on the idea that it is “as important to teach adults how to learn as it is to specify particular curricular domains for learning” (Brookfield, 1986, p. 64). In his initial work, Smith (1976) offers a working definition of learning-how-to-learn as “a matter of the adult's having (or acquiring) the knowledge and skill

essential to function effectively in the various learning situations in which he finds himself” (p. 5). In later work, Smith (1982) defined learning-how-to-learn as “possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation one encounters” (p. 19).

Though defining is a challenge, understanding the concept of learning-how-to-learn is important to the field of Adult Education for it “holds great promise for helping adults expand their learning effectiveness” (Knowles et al., 1998, p. 166). Thus, understanding the concept of learning-how-to-learn is more important than establishing a definition. Learning-how-to-learn happens in everyday lives, yet little research about learning-how-to-learn outside of formal educational or organizational settings exists.

Smith had prophetic words to offer related to learning-how-to-learn that applies to today almost three decades later. “In an era of breathtaking change, it is truly impossible to acquire early in life the knowledge that adulthood will require” (p. 15). Therefore, since learning itself can be learned and taught through use of various processes, perceptions, and capacities, “one can learn how to learn more effectively and efficiently” (p. 15). “It is a tragic fact that most of us only know how to be taught; we haven’t learned how to learn” (Knowles, 1975, p. 14).

Adult education is a process (Smith, 1976, p. 6). It is important to involve the learner in every phase of the process. Critical to this process is the development of each learners' awareness and capacity for effective self-monitoring and active reflection (Smith, 1991, p. 11). Involving the learner in this process includes participation in planning, conducting, and evaluating learning activities (Smith, 1976, p. 6). These subprocesses assume that the learner is involved to the greatest extent possible and that “the learner needs this kind of knowledge and skill to function optimally in the three phases of the process” (p. 6).

The first subprocess of adult learning is Planning. It establishes how adult learners identify their needs and set goals as they select resources and strategies. The second subprocess is Conducting. This is the adult

learners' learning activity where they negotiate selected procedures and resources as they learn to give and receive feedback. Finally, the third subprocess is Evaluating. This is how well adult learners measure the extent to which and how efficiently their goals are met. Learners must be equipped with these subprocesses to obtain the knowledge and skills to proceed with follow-up activities. Adult learners must possess and practice these skills through the learning-how-to-learn process. Moreover, facilitators of adult learning events will serve the teaching-learning exchange more effectively if they realize the power of this learning-how-to-learn process.

### **Real-Life Learning**

Learning from everyday situations, opportunities, dilemmas and experiences is a process all learners confront countless times during their lives. As a field of study, Adult Education examines the benefits of learning that is immediately applicable to adult learners' lives as opposed to learning that is from a teacher-directed curricula in formal education. Real-life learning is "relevant to the living tasks of the individual in contrast to those tasks considered more appropriate to formal education" (Fellenz & Conti, 1989, p. 3).

Learning processes traditionally used in formal educational settings differ dramatically from the procedures of real-life learning. With real-life learning, more attention is given to the living tasks of individual learners rather than tasks proposed by formal education (Fellenz & Conti, 1989). People are generally ill prepared through formal education to learn from everyday life experience (Sternburg, 1990, p. 35).

### **Learning Strategies**

Learners have individual differences in how they conduct learning activities. Those differences have been referred to as learning styles and learning strategies. Learning styles are the stable traits with which learners are born and on which they rely when involved in a learning situation (Fellenz & Conti, 1989, p. 8). A

person's learning style is "the individual's characteristic ways of processing information, feeling, and behaving in certain learning situations" (Smith, 1982, p. 24). Learning style is one of the three components of the learning-how-to-learn process (Smith, 1982, p. 23). Learning styles are generally established in childhood and are steady throughout the learner's life (Fellenz & Conti, 1989, p. 8).

In contrast to learning styles are the strategies that learners use when initiating a learning activity. Learning strategies are "the techniques or skills that an individual elects to use in order to accomplish a learning task" (Fellenz & Conti, 1989, p. 7). Learning strategies may also describe ways in which learners and their resources may be arranged during learning situations (Smith, 1982, p. 113). Learning styles are influenced by intrinsic ways of information processing whereas learning strategies deal with the methods learners use to gain information in different learning situations (Conti & Kolody, 1995). Rather than being an intrinsic process, learners have more control over learning strategies than they do over learning styles. Learning strategies are behaviors that the learner may choose when attempting a learning task (Fellenz & Conti, 1989).

### **Methodology**

The purpose of this study was to describe the learning strategies that adults use in learning to engage in an online auction process. This study used a descriptive design along with the information and data gathering advantages of the Internet to collect data about how adults learning using the Internet. The study involved a representative sample of 380 eBay users which was identified by the e-mail addresses of participants in completed auctions.

### **Questionnaire**

This study investigated the Internet learning on eBay and described the learning strategies adults use while engaged in the eBay auction process. Data were gathered by means of a questionnaire that was created

and located on the researcher's website. This questionnaire consisted of open-ended questions and questions with identified choices. It gave respondents an opportunity to describe how they: (a) learned about eBay and navigated the site, (b) formed and exercised their bidding strategies, (c) communicated with other people on eBay, and (d) felt about the skills they learned. Within the online questionnaire, 19 qualitative requests in an open-ended format were presented along with 5 quantitative requests which featured 5-point Likert scale choices. In addition to these questions, demographic data on each participant was requested related to education, gender, age, and race. Finally, the Assessing The Learning Strategies of Adults (ATLAS) instrument was imbedded within the questionnaire to determine the preferred strategies of eBay users.

ATLAS is a valid and reliable instrument designed to quickly identify learning strategy preferences (Conti, 2009). For this study, the ATLAS instrument was imbedded in the online questionnaire rather than being used in its original booklet format (Conti, 2009, p. 889). Participants followed descriptive phrases by clicking their mouse indicators on selected responses. Each response led the participants to eventually discover their learning strategy group of Navigator, Problem Solver, or Engager.



## Participants

The profile of the respondents supports the general stereotypes of a *digital divide*; the *digital divide* “is the gap between people with access to computers and the Internet and those without it” (Ghost Bear & Conti, 2002, p. 231). Of the 380 participants in the study, the gender distribution of the sample was nearly equal with 188 males (50.1%) and 187 females (49.9%); only 5 participants did not report their gender. The group was fairly well educated; the highest educational level of nearly one-fourth (23%) was a high school diploma, of one-fifth (20%) was a post-secondary degree or certificate, of nearly one-third (30.5%) was a bachelor’s degree, an of one-fourth (25.1%) was a graduate degree. Only five (1.4%) had less than a high school diploma, and these respondents were young enough to still be in school. The respondents ranged in age from 13 to 70 with a mean of 41.08 and a median of 43. Responses were received from 8 countries in addition to the United States; these 15 responses came from Australia (2), Canada (6), Germany (2), Denmark (1), Finland (1), Mexico (1), Russia (1), and United Kingdom (1). Although eBay has an international membership, the respondents were overwhelmingly White (93.3%); non-White ethnic origins were as follows: African--3%, Asian--1.0%, Hispanic--1.7%, Native American--1.0%, and Other--2.7%. Also, the responses were mostly from sites that indicated that private individuals participated in the study.

Although the three learning preference groups identified by ATLAS exist in nearly equal portions in the general adult population, a disproportionately large number of Problem Solvers use eBay ( $\chi^2=30.3$ ,  $df=2$ ,  $p=.001$ ). The distribution on ATLAS in the general population, which was the expected distribution for this study, is as follows: Navigators--36.5%, Problem Solvers--31.7%, and Engagers--31.8% (Conti, 2009, p. 891). However, the observed distribution in this study was as follows: Problem Solvers--45.2%, Navigators--28.5%, and Engagers--26.3%. Thus, there are a greater number of Problem Solvers using eBay than the other learning strategy preference groups. Problem Solvers

rely on the critical thinking skills of testing assumptions to evaluate the specifics and generalizability within a learning situation, generating alternatives to create additional learning options, and embracing conditional acceptance of learning outcomes while keeping an open mind to other learning possibilities (p. 894). Another study which described the ways learners utilized self-directed learning on the Internet (Spencer, 2000) found similar results in that 50.66% of the participants were identified as Problem Solvers.

## Findings

The findings from the study provide support for conclusions in four areas. First, the process in which the participants engaged in order to learn about the online auction process provides support for adult learning principles. Second, the language and process used by the participants provide additional descriptors for the three learning strategy preference groups identified by ATLAS. Third, the findings revealed that the process of achieving similar learning tasks could be successfully accomplished by using different learning strategies. Fourth, the findings showed how the traditional literacy and computer literacy skills of Internet users are enhanced by Internet use.

## Adult Learning Principles

### Andragogical Concepts

Informal learning on eBay exemplifies the six assumptions upon which Knowles’ andragogical model is based. A tremendous amount of informal learning has taken place in order for the eBay users to engage in the various parts of the eBay auction process. As the findings from this study clearly disclose, participation in eBay activities personifies adult learning at its best and illustrates the andragogical assumptions written decades ago. Although Malcolm Knowles developed the four core assumptions of andragogy over 40 years ago (Knowles, 1970), his assumptions apply to the current Information Age with amazing relevance. His

assumptions are so applicable, it is as if they were written to describe the very learning processes that adults use today when engaging in eBay auction activities. Likewise, the two additional assumptions that were added in 1984 and 1989 (Knowles et al., 1998, p. 69) also readily apply and give foundation to the learning phenomenon characterized by eBay participation. The core principles of andragogy “go beyond basic respect for the learner and view the adult learner as a primary source of data for making sound decisions regarding the learning process” (p. 183).

Knowles’ first assumption in the andragogical model has to do with adults learners’ need to know (Knowles et al., 1998, pp. 64-65). Adults need to know why they are learning before they participate in a learning activity (p. 133). Adult learners who participate on eBay may go about learning for different reasons such as to explore the eBay website or to purchase a specific item. However, they all know why they have elected to participate in the online auction activities.

The second assumption in the andragogical model involves self-concept (Knowles et al., 1998, p. 65). The self-concept of adult learners as they move from dependency to self-direction leads to the knowledge that they are “responsible for their own decisions, for their own lives” (p. 65). Adult participants in the eBay auction process are self-directed in nature. They have determined their interests, goals, and individual courses of inquiry. In addition, they determine their degree and level of participation each time they join the eBay activities.

The third assumption has to do with the role of the adult learners’ experiences (Knowles et al., 1998, pp. 65-67). As they take part in eBay operations, the adult learners bring a variety of experiences to their action. Each adult learner who chooses to participate in eBay activities brings a lifetime of experiences to the online auction. Some may have many experiences with live auctions while others may have extensive knowledge of particular collectibles and while still others may have prior computer skills or human relationship skills. Nevertheless, they all have a foundation from which to draw that enhances their learning on eBay. This eBay

participant exhibits Knowles’ third assumption of andragogy as she developed her bidding strategy:

I learned that bidding early in the auction is usually a waste of time. When people see bids on items, they are more inclined to check it out and bid themselves. Also, some people always like to be top dog, so it just drives the price up. I also learned to check out the bidding lists of people who liked the same things I did. I figured if I do it, they may too--so that's why I don't tend to bid on things until the end. I also learned that many people DON'T bid their maximum--they bid what they think is "enough" then race to place another bid if outbid near the end. That's why I snipe--to not give them a chance to place another bid and drive the price up. (39-year-old female Problem Solver)

The fourth andragogical assumption pertains to adult learners’ readiness to learn. Readiness to learn is connected to each learners’ particular developmental stage in life. Adult learners reject anything that is irrelevant to their current learning situations. Despite their various reasons for engaging in eBay, these adult learners find great relevance in eBay’s ability to meet their needs and goals. The decisions they make while participating in all steps of eBay all have great relevance to the learners.

The final two assumptions of the andragogical model relate to adults’ orientation to learning and motivation. Adults learn more effectively “when they are presented in the context of application to real-life situations” (Knowles et al., 1998, p. 67). The orientation of adult learners is life-centered, task-centered, or problem-centered (p. 67) rather than the typical subject-centered curriculum of children’s learning. Learning on eBay is organized around the participants’ particular life situations. For example, this eBay user was looking for a particular item and her quest lead her to eBay:

I punched into my favorite collectibles and started looking at the various dogs. Then I

learned how to punch in Scotties under search and come up with only those specific items. (52-year-old female Problem Solver)

Finally, internal motivators such as satisfaction and self-confidence inspire adult learners to new levels of growth and development (p. 68). Thus, the intrinsic rewards of participating in the eBay auction process feeds the natural desires of adult learners as they gain new skills, acquire new items, make new friends, and confirm their beliefs all in a setting that is free of traditional educational barriers. Instances of adult learners who responded to internal motivators were repeatedly found during this study. For example:

I never really thought about it before, but the more I learn, the better I feel about myself. It's fun to share the knowledge with others. (42-year-old female Engager)

### **Self-Directed Learning**

Adult learners who engage in the eBay auction process are exhibiting self-directed learning. The knowledge that adults engage in self-directed learning is now a “foregone conclusion in adult learning research” (Knowles et al., 1998, p. 135). Along with others, Stephen Brookfield (1986) and Malcolm Knowles (1975) made important contributions to the better understanding of self-direction in adult learning. Brookfield identified two forms of self-direction, and Knowles brought forth five assumptions of self-directed learning. Adults who partake in the eBay auction exemplify the work on self-direction of both these men to light in a new era that perhaps even they never envisioned.

The first of Brookfield’s (1986) two forms of self-direction is that there are “various techniques of self-directed learning” (p. 47). As adult learners participate in the many procedures entailed in an online auction, they are practicing many of Brookfield’s identified techniques. The findings produced many examples of eBay users participating in such complex self-directed

techniques such as “specifying goals” as they determine their auction objectives, “identifying resources” that will assist their auction decisions, “implementing strategies” that will best suit their bidding needs, and “evaluating progress” of their auction-related intentions.

Adult learners who participate in eBay’s online auction process are also practicing Brookfield’s second identified form of self-directed learning, which is internal consciousness change (Brookfield, 1986, p. 47). The adults who involved themselves in the eBay auction process had a variety of complex internal shifts on a variety of developmental levels. These changes in awareness not only were recognized by the study participants, they were also reviewed and reported by them.

I feel much better about computers and the Internet since I am able to communicate with people who have similar interests. At first I was nervous about bidding on Internet auctions, but after gaining experience over time I find it very exciting and convenient. (23-year-old male Engager)

Built my confidence in the Internet becoming user-friendly for me. I have become more computer-literate. I have learned, because of eBay use, how to use a scanner, how to video capture, how to resize pictures & reduce file size, upload pictures to a website for our auctions, how to use the Internet to find things that greatly enrich our home, personal studies & research, family needs, etc. as well as provide a supplemental income for our family. (35-year-old female Problem Solver)

Just as they parallel his andragogical assumptions, Knowles’ (1975) five assumptions of self-directed learners also correspond nicely with the actions of the adult learners who participated in this study. As an “essential component of maturing” (p. 20), the study participants have grown naturally into the need to be self-directed as they enter and proceed through the

auction activities. These adult learners have also exhibited how important their pre- and post experiences (p. 20) related to eBay are to their learning and that their learning needs change in correlation to their developmental levels (p. 20) as they progress through the processes associated with eBay. In addition, the adult learners who have engaged in the eBay auction process have accomplished tasks and solved problems (p. 21) as they registered on eBay, learned about the site, researched items and other users, developed bidding strategies, and undertook a host of other tasks. Lastly, the internal incentives of eBay users have inspired them to new levels of achievement, satisfaction, and accomplishment (p. 21) as they joined in the website's activities.

### **Learning-How-to-Learn**

Adult learners have implemented the theory of learning-how-to-learn through participation in the eBay auction process. Not only do adult learners who have participated in eBay's auction activities exemplify the andragogical model and the concepts of self-direction, they also have implemented the theory introduced by Smith (1982) called learning-how-to-learn. Along with Knowles (1970), Smith had prophetic words to offer related to learning-how-to-learn that applies to the Information Age decades later. "In an era of breathtaking change, it is truly impossible to acquire early in life the knowledge that adulthood will require" (p. 15). Therefore, since learning itself can be learned and taught through use of various processes, perceptions, and capacities, "one can learn how to learn more effectively and efficiently" (p. 15). "It is a tragic fact that most of us only know how to be taught; we haven't learned how to learn" (Knowles, 1975, p. 14). Overcoming that tragedy are the adult learners of eBay who have effectively learned how to learn.

The adult learners who have participated in eBay auctions clearly practiced the three learning-how-to-learn subprocesses of planning, conducting, and evaluating (Smith, 1976, p. 6) in the informal setting of eBay. An example of planning occurred when adult

eBay users identified their needs for a particular auction item or they identified their needs for a different bidding strategy.

It only took a couple of auctions to realize that if I bid early and high the other bids would drive up my price. I also found that small frequent bids developed a competition which is what the seller wants but not the buyer. (51-year-old male Navigator)

Conducting was demonstrated when the eBay participants reviewed their bidding procedures or utilized available resources. For example,

It was an evolution from simply bidding and waiting to sniping (if the item is particularly interesting). I learned this behavior from the numerous times when another bidder did it to me. (29-year-old male Engager)

I read through each auction available on the specific item. Some auctions offered links to other sites providing more info. I also did a search and found retailers selling the item to compare prices. (44-year-old female Problem Solver)

Examples of the adult learners on eBay who utilized the learning-how-to-learn subprocess of Evaluating were found in the many responses from eBay users who met their auction goals in a variety of ways.

My most costly purchase was an old apple laptop. I was nervous because it was electronic. The seller was not the original owner. He was trying to "turn a buck". I was happy that the machine has worked thus far. It was cosmetically worse than I imagined, but I am pleased. I have purchased a motorcycle helmet, leather jacket, Gameboy case, and have been pleased with everything. (43-year-old male Engager)

In addition to the applying the subprocesses of learning-how-to-learn, the study participants have also performed the less basic learning-how-to-learn skills which are all characteristics of the learner who has successfully learned how to learn. These include deciding what and where to learn, enhancing necessary skills, being open to change, selecting the mode of learning, and applying flexibility which are all characteristics of the learner who has successfully learned how to learn. These higher-level skills are referred to as the characteristics of successful learners (Smith, 1982, pp. 84-93).

The adult learners who are eBay participants demonstrated these characteristics of successful learners. Adult learners who have engaged in the eBay auction process have certainly decided to learn during that process and they decided what to learn based on their skills, goals, and needs. Many adult learners on eBay reported in the findings that they found it necessary to access additional skills in order to participate in the auction processes. For example, as this participant expressed:

My skills are much better since I started using eBay. I am more proficient in using a variety of screens and in my searching. (37-year-old female Navigator)

Just by participating in such an innovative technological venture as eBay, these learners demonstrated their ability to be receptive to change in their lives. Whether they have chosen to learn individually or cooperatively, these learners have also selected their mode of learning through eBay activities, and they clearly have practiced flexibility as they wove their ways through the intricacies of the online auction processes. The following participant illustrated the flexibility of many an eBay user:

I'll type in a search engine for a certain musician to find recordings (LP or CD) or I will look for specific types of musical equipment or toys for the kids. Then I'll make a bid if it's something

desirable and the seller has good feedback. (34-year-old male Problem Solver)

### **Real-Life Learning**

Real-life learning occurs when adult learners engage in the eBay auction process. Any reflection of adult learning trends should include "learning that is relevant to the living tasks of the individual" (Fellenz & Conti, 1989, p. 3). Otherwise known as real-life learning or real-world learning, this type of learning generally results in practical or everyday knowledge (p. 3). Real-life learning is practiced daily by millions of eBay users as they participate in the website's activities.

Two major concepts of real-life learning are particularly appropriate to the operations of adult learners while on eBay. First, real-life learning focuses on trends in adult learning that "provide for potential empowerment of the individual" (Fellenz & Conti, 1989, p. 23). The eBay phenomenon exposes adult learners who are empowered either through personal freedoms uncharacteristic of academic-type education or through the additional aspect of increased awareness "both of the social-cultural context that affects one's life and the potential one has for transforming that society" (p. 24). The power of real-life learning and its individual and societal possibilities were expressed in this participant's description:

I have always felt it a pity that we could not be in direct interaction with the people of the world. The blessed Internet has widened our horizons and friendships and understanding of others!! (52-year-old female Problem Solver)

A second concept of real-life learning connects with the real-life experiences of adult learners on eBay. Learning in real life "suggests that learning needs stem from the learner's real-life situations" (Fellenz & Conti, 1989, p. 25) instead of the artificial program-planning models of traditional education. The real-life learning opportunities provided to adult learners as they engage in the eBay auction process personifies this second

concept of real-life learning, and it fits the requisite basis for a learner-centered curriculum that is “based on social realities” (p. 25). An example of this may be found in this participant’s perception of how eBay participation had influenced his attitudes about himself and his social realities:

Through some e-mails, you also have a feel for some peoples’ personalities. On some occasions you will exchange some other information about a common topic or geographic region. I think eBay is a great example of how the Internet will change the way we purchase items and view the world. It opens the world to an even playing ground. (36-year-old male Problem Solver)

### **Learning Strategy Descriptors**

This study used the information and data collection advantages of the Internet to collect data about how adults learn using the Internet. Three distinct groups emerged from this study as additional descriptors of the original Navigator, Problem Solver, and Engager ATLAS groups. These additional descriptors can be labeled as the Strivers, the Storytellers, and the Stimulants.

#### **Strivers**

Navigators were learners that attempted their learning activities with much sincerity and gave each activity their utmost effort. They appeared to be learners who expected and demanded more of themselves than others did and were self-conscious and hyper-critical when they made efforts they perceived to be mistakes (Willyard, 2000). Navigators are “focused learners who chart a course for learning and follow it” (Conti, 2009, p. 893). They are high achievers who tend to concentrate on external learning processes. Navigators “initiate a learning activity by looking externally at the utilization of resources that will help them accomplish the learning task and by immediately beginning to narrow and focus these resources” (p. 893). These

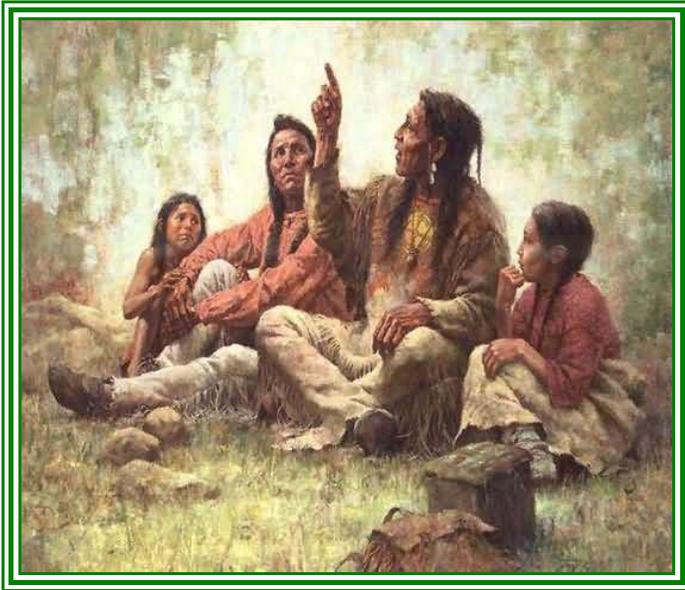
learners rely on strategies such as Planning, Attention, Identification and Use of Resources, and Testing Assumptions. Navigators are uncomfortable with changes and depend on instructors to waste little time. Navigators work well under organized deadlines, clear-cut goals, and clearly-communicated expectations; they “plan their learning schedule according to deadlines and the final expected result” (Conti & Kolody, 1999, p. 9).

Because of these characteristic behavior, Navigators may also be viewed as Strivers. They continued to strive for improvement even though many were initially uncomfortable participating in the online auction activities. The Navigators were also learners who valued a set plan they established before they participated in the auction activities. As they appeared to be determined to stick with a specific plan, they can be viewed as learners who “plan the work and work the plan.” The Navigators tended to use their predetermined plans regardless of the plans’ success.

#### **Storytellers**

The Problem Solvers were clearly the leaders of the ATLAS groups in this study. In addition to being the largest group represented, these learners appeared to have found their niche in the Internet auction format. The Problem Solvers were extremely confident about not only themselves and their auction abilities, but they were also confident and bold in describing the next learning steps they would take in their eBay progress. The Problem Solvers also distinguished themselves in another important way. Critical Thinking is the learning strategy most frequently associated with Problem Solvers (Conti, 2009, p. 894). Like the Navigators, these learners look externally at available resources that will best assist their learning procedures. Problem Solvers “rely on a reflective thinking process which utilizes higher order thinking skills” (Conti & Kolody, 1999, p. 11). They frequently test assumptions, generate alternatives, and use conditional acceptance strategies. Problem Solvers are handy at adjusting their learning processes and resources to fit their learning needs (p.

12). These learners are best evaluated with open-ended questions and activities that use problem-solving techniques rather than with multiple-choice problems. Problem Solvers learn best in environments that “promote experimentation through practical experience and hands-on activities” (p. 13).



Problem Solvers were clearly the most descriptive and detailed in their answers of the three ATLAS groups. Thus, the Problem Solvers can be viewed as Storytellers. the Problem Solvers would elaborate extensively and would add delightful detail to their stories about their experiences on eBay. The Problem Solvers were the manifestation of the adage “ask them what time it is, and they will build you a clock.” The clock-builders in this study added great new insight into the characteristics of Problem Solver learners. It was clear from the Problem Solvers’ detailed descriptions that it was the actual process of telling the story that intrigued and delighted them rather than the completion of the story. Storytellers seemed to find little satisfaction at the conclusion of their stories. Instead, their contentment appeared to rest in the process of telling the story. Indeed, the punchline or story ending is the Storytellers’ least favorite part of the process.

## Stimulants

The Engagers in this study were inclined to frequently express excitement and joy in their learning processes. These “passionate learners who love to learn” (Conti & Kolody, 1999, p. 13) were excited about their learning on eBay and were eager to share what they learned with others. Internally motivated, Engagers must be certain that a learning activity will be meaningful to them before they become involved (p. 14). They are “passionate learners who love to learn, learn with feeling, and learn best when they are actively engaged in a meaningful manner with the learning task” (Conti, 2009, p. 894). They thrive on the learning process and the enjoyment gained while interacting with other people. Engagers consider their efforts “as an extension of themselves and are motivated by feelings of satisfaction and pride” (Conti & Kolody, 1999, p. 15). Many times, these learners’ self-worth is affirmed by the work they do (p. 15). Engagers offer instructors an opportunity to be sensitive to their need for validation.

Engagers tend to focus on the process of learning rather than the content of the material being learned. For this reason, they can be viewed as the Stimulants. When Engagers decide that a learning activity is worthwhile to them, they participate with full enthusiasm and utmost energy, and they encourage others to do likewise. Enjoyment is an important component in Engagers’ learning processes. The phrase “It’s fun!” seemed to describe their approach to learning the best. They appear to delight in new accomplishments and tend to share those accomplishments with others.

## Group Differences

Discernable differences between the participants in the ATLAS groups exist when learning through technology and the Internet. The Navigators placed value on using external tools and completing more research, and they also valued rules, regulations, and any control they may have had. They also reported that evaluation and feedback were important to them, and

they tended to be more cautious about their next steps and about other eBay users than the Problem Solvers and Engagers were. In addition, the Navigators were more self-critical and self-conscious while learning through the eBay process.

The self-confidence of the Problem Solver group came clearly and repeatedly through their responses as did their affinity for providing detailed, descriptive stories about their learning processes. The Problem Solver answers also revealed how eBay participation reinforced their already positive attitudes about computer and Internet use along with their intrigue and curiosity with the many possibilities of the Internet.

The Engagers were more likely than Problem Solvers or Navigators to express their answers using internal feelings or emotionally-laden words or phrases, and they tended to utilize methods that made their lives easier, more worthwhile, and more enjoyable. Engagers were also inclined to value personal interaction and relationships with other people and were generally optimistic in their opinions of others.

Navigators have a tendency to desire complete control of their learning plans and rarely veer from those plans once established. In this study, they were inclined to value external tools such as resource books, trade journals, and catalogs to gain additional information about auction items. These logic-conscious learners reported that eBay activities often followed logical progressions that were clear to them; however, they were uncomfortable with the uncertainty and conundrum associated with the last minutes before online auction deadlines. They confessed that “I’m not comfortable with the last minute bidding” (43-year-old female Navigator).

On the other hand, Problem Solvers revel in the ambivalence and mystery of eBay’s auctions. These critical thinkers are clearly “sustained by the ongoing modification and revision of their learning plans in relationship to their evaluation of their own learning process” (Conti & Kolody, 1999, p. 12). In addition, the Problem Solvers were partial to the exploration and adventure that eBay and the Internet afforded. They also enjoyed the collaborative and cooperative atmosphere

that the online auction site offered.

Engagers are enthusiastic learners who enjoy emotionally rewarding new tasks and challenges. They were thrilled with the eBay activities as long as the desired item or the time involved was worth the effort. These learners who will avoid any learning tasks that appear “ominous and formidable” (Conti & Kolody, 1999, p. 15) often chose to provide short answers or no answers to questionnaire requests that did not meet their criteria for attention. Engagers will frequently take the paths of least resistance and use any tools that will alleviate tedious details or boredom. Engagers frequently reported using eBay’s short-cut features that would get them the most amount of information in the shortest amount of time. They also reported using the prearranged features provided on the eBay site.

### **Similar Learning Tasks**

Learners can be successful in accomplishing similar learning tasks even though they use different strategies in the process. Navigators, Problem Solvers, and Engagers frequently reported that they accomplished similar tasks, but the strategies they used to arrive at their accomplishments were different. For example, when asked to describe how they developed their eBay bidding strategies, several Navigators, Problem Solvers, and Engagers said they used the actual act of bidding as a method of developing their strategy. However, there were differences in the strategies that those in each group used to get to this point. The Navigators tended to use external resources.

I learned to develop my strategy from reading the book I mentioned. (45-year-old female Navigator)

However, the Problem Solvers were inclined to give detailed descriptions and examples of the processes used to develop their bidding strategies. For example:

When I find something I want to bid on by scrolling through a list of like items, I would

examine the writeup thoroughly. If I need a photo, then I definitely check it out. If the photo is murky or unclear and out of focus and the item is not visible, then I pass it up. I then look to see the price limits and try not to push the envelope unless I just have to have it. Often I would bid once at its low end and wait and see. If I am outbid along the process, I would file that information and come back to it near the end of the auction to see what its current valuation is; if I can still afford it, and still want it badly, then I would hike up the bid to my level, and wait and see. I would check on these items almost daily. (70-year-old male Problem Solver)

The Engagers displayed the propensity to use emotionally-laden words even in their descriptions of their bidding strategy development. For example:

I didn't like losing out, especially if it was something I really needed or wanted. (40-year-old female Engager)

The realization that learners can be successful in accomplishing similar tasks by using different strategies while learning points out the importance of the *process* involved in using different learning strategies. This point supports the entire concept that learning strategies are not stable, unchangeable traits but rather are “the techniques or skills that an individual elects to use in order to accomplish a learning task” (Fellenz & Conti, 1993, p. 3). This also supports the concept that adult learners in certain situations have successfully learned how to learn (Smith, 1976; 1982). Learning strategies are available for adult learners to pick and choose from according to their learning needs (McNeil, 2012).

### **Literacy Skills**

Participation in Internet activities enhances the literacy skills of the participants. Countless traditional courses in adult literacy occur all over the world in

abundant settings, yet many adult learners are benefitting from the literacy-building component of the Internet with no formal instruction. Not only does the Internet enhance adult literacy skills, it affects assorted types of literacy skills in meaningful and practical ways. Both traditional and computer literacy skills are improved as a result of Internet participation.



The participants in this study indicated that the skills traditionally associated with literacy such as reading, writing, spelling, and comprehension were enhanced by Internet participation. The eBay users participating in this Internet experience have recognized and reported that their skills have improved as a result of their Internet experiences. One man wrote, “now, I can almost spell” (29-year-old male Engager), and a woman described how Internet use “has validated my writing and spelling skills” (26-year-old female Navigator). Improved literacy skills such as communication techniques are also apparent bonuses of Internet use. “I now know I have an influence over people by using my vocabulary to describe products using descriptive verbs and modifiers” (28-year-old female Navigator). Along with these skills, the English competency of this

German-speaking participant was enhanced: “I realize that my English is not too bad and I can communicate with others and they understand me” (30-year-old female Navigator).

In addition, several participants acknowledged that the Internet was a source for improved computer literacy and Internet skills. The ample responses from the participants revealed with astonishing clarity that Internet participants’ literacy skills were increased as a result of participation in Internet activities.

The computer literacy skills of adult learners may be improved in a variety of ways. For example, several of the study participants reported that their computer literacy skills improved because their typing or keyboarding skills were enhanced by Internet use while others found the Internet to be the source of improvement for their Internet research and navigational skills. One person recognized that “it has caused me to increase my typing skills for sure, as well as general computer usage” (52-year-old male Engager) while another noticed “I have more confidence in my skills in use of the Internet and finding information for areas in which I may not be adept” (44-year-old female Navigator). The literacy skills of adult learners are also improved by the Internet as it is a method that encourages use of certain software applications and particular computer equipment. Internet use and participation has the capacity to lead adults to learning such advanced operations as scanning pictures, downloading photographs, uploading images, and writing text to fit particular computer protocols.

### **Conclusion**

The twin pillars that have formed the foundation for the field of Adult Education are the theories of andragogy and self-directed learning (Merriam, 2001, p. 3). These two theories “describe adult learning as a learner-centered activity. This focus mandates that individual differences be identified” (McClellan & Conti, 2008, p. 14) and addressed. The concepts of learning-how-to-learn, learning for and from real-life situations, and learning strategies provide directions and

mechanisms for implementing these foundational theories to address individual differences.

Facilitators of adult learning situations must recognize the strengths of each learner and respect each person’s individual differences. The 380 respondents in this study did much more than participate in an Internet auction activity and answer an online questionnaire. Their words ring loudly and clearly. In this current era of rapid change, the participants have “engaged in a process, the outcome of which we cannot clearly predict” (Rogers, 1969, p. 341). This process reveals a shift to “more self-reliant and self-directed participation” (p. 341). Learning is the main activity in that process in which they have participated. “An internal process that is not always visible to the eye, learning is a pervasive state of being, rather than merely a change in behavior” (Kittredge, 1998, p. 12). The participants in this study repeatedly described the complex learning processes in which they had engaged as a result of an on-going informal activity. In addition, they made clear that engaging in eBay activities is an endeavor of human relationships involving continuous learning rather than just an effort of electronic commerce.

“Whether viewed scientifically or artistically, learning is a process grounded in the individual’s perceptions of place” (Kittredge, 1998, p. 12). This process is based with the learner and all action radiates from the learner for “it is the individual who draws the connections and sees the whole. It is the individual who makes the choices to act after reflective thought. It is the individual who holds the frame for viewing the future” (pp. 268-269). The learners hold the key to understanding learning. Like Alice in Wonderland, it is the educator’s job to turn the key to understand what is on the learner’s side of the looking glass:

But oh...now we come to the passage. You can just see a little *peep* of the passage in Looking-glass House, if you leave the door of our drawing-room wide open: and it's very like our passage as far as you can see, only you know it may be quite different on beyond. Oh...how nice it would be if we could only get through into Looking-glass House! I'm sure it's

got, oh! such beautiful things in it! Let's pretend there's a way of getting through into it, somehow....And certainly the glass *was* beginning to melt away, just like a bright silvery mist. (Carroll, 2009/1871, p. 14)



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