Andragogical and pedagogical differences relative to their interfacing with internet resources

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ABSTRACT:

This report summarizes and concludes the findings regarding the issue of whether there is a difference in pedagogical versus andragogical interfacing of internet resources. Pedagogy, by definition, refers to teaching, and is usually teacher centered. Andragogy focuses on learning and therefore, considered learner centered. The purpose of the report is to provide, through an interactive approach, answers to questions raised during the discussion. These answers are addressed through Internet resources. It is concluded that the information provided through these resources are usually more pedagogical by nature in their interfacing design.
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DEFINE THE ISSUE:

The main question that was proposed for discussion is: "Pedagogical versus Andragogical interfacing using internet resources--is there a difference?"

The group addressed the concern that many adults are left feeling inadequate after searching for resources on the Internet. A comparison was made to the observation of the fact that children appear to adapt more quickly to the Internet environment. The discussion will focus on what elements of the Internet are either barriers or hurdles to our learning from either a pedagogical or andragogical perspective. The discussion also addresses whether interfaces are as intuitive and user friendly as software developers claim.
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INTRODUCTION:

We have discovered in the resources found that many sites are designed in a pedagogical, teacher centered perspective. The student is being "filled" with information. Yet, it was noted there are possibilites for a learner centered approach if the site has been designed to provide interaction.

This report will provide the questions that have been raised and answer them in accordance to the resources found on the Internet. A conclusion and summary will be provided based on the resource findings.
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QUESTIONS / ANSWERS:

Question 1:

What is the difference between andragogy and pedagogy?

Answer to question 1:

To understand the significance of our issue and the implications for internet interfacing, the labels 'andragogy and pedagogy' must be clarified. To do this, one must consider that when teaching adult learners as compared to non-adult learners or traditional learners first became popular in the early 1900s, it was assumed that the same methods and techniques used to teach children could also be applied to adults. This style was known as pedagogy (What is pedagogy?) which was taken to mean the art and science of teaching, even though its Greek root words actually mean leading children. Thus, pedagogy, by definition, is intended to refer to teaching children or using a style of teaching that is typically related to teaching children (teacher centered). It refers to children and the notion of 'filling their heads while they move towards maturity.'

The word andragogy (What is andragogy? and What is andragogy?), on the other hand, was created to refer specifically to the art and science of teaching adults. Andragogy generally refers to teaching adults, but is more focused on what adults learn versus what they are being taught. Andragogy assumes that adults already have a significant amount of knowledge, are capable of making 'educated' choices in their learning experiences and learn best when 'the teacher' or facilitator uses a combination of teaching styles, some of which may be 'pedagogical' in nature.

Today andragogy is the focus of much research in the field of education with an abundance of information available to provide clarification and proper interpretation. Studies related to what, where, how, and why adults learn as well as how they develop and mature throughout the lifespan have been conducted. Much of this research has signaled the need for new approaches to teaching and learning.

During the last several decades, data has begun to accumulate to substantiate a number of the characteristics of adult learners (Characteristics of adult learners) that sets them apart from traditional K-12 students and many undergraduate college students as well (Cook, 1993). Dirkx and Prenger (1995) offer a summary based upon the research and theory of andragogy and social learning theory of the characteristics typified by the adult learner. You will find additional information in the summary to links section.

The importance of self and self-directedness are primary considerations when teaching adult learners. Because of this divergence from a pedagogical approach, the educator must not be restricted from presenting the adult with alternative ways of interpreting the world or of creating new personal and collective futures. For if this restriction happens then the educator becomes a kind of master technician who operates within a moral vacuum and is constrained from offering value systems, ideologies, behavioral codes, or images of the future that the adult has yet to encounter (Brookfield, 1986, p. 6). The alternative proposed by Brookfield is for instructors to become passive fixtures to allow adult learners total academic license. Given this academic freedom, Brookfield asserts that adult students should then find "alternate ways of interpreting the world" if they are to make enlightened decisions regarding their

circumstance and state of being.

SUMMARY OF LINKS:

Malcolm Knowles was a pioneer in the field of andragogy and much of his work provides clarification and insight into the nature of this word and its meaning. Many of the resources included in this menu item were either authored by Malcolm Knowles or referenced to him. The purpose of this site is to clarify and provide meaning to the word andragogy.

What is andragogy? Here you will find a definition of andragogy with a brief discussion based on the four crucial assumptions about the characteristics of adult learners that are different from the assumptions about child learners.

What is pedagogy? This site is a glossary for LinguaLinks Bookshelf which provides a definition of pedagogy.

Adult Learning Theories: Pedagogy vs. Andragogy: Characteristics of adults learners; Activity This site provides a brief comparison of pedagogy vs andragogy using the categories of learner, learning experience, orientation to learning and motivation. A succinct list of characteristics of adult learners is also provided with several activities to illustrate teaching variations using an andragogical approach.

Malcolm Knowles: Apostle of Andragogy Malcolm Knowles was a widely known and influential professor of adult education for almost twenty years before academia dispensed with him through mandatory retirement in 1979. Prior to his university career he had worked seventeen years in the field. About nine of those years he spent as practitioner and administrator with the YMCA. For the other eight years he was executive director of the Adult Education Association, a major national organization of adult education in the United States at that time. Much of his work during those years and since his retirement has focused on the promotion of self-directed learning. His espoused goal has been to advance the cause of the individual and of American democracy in the university and in adult education, in business and industry, and in United States society generally. In the process, he became a theorist and promoter of adult education. Shifting slogans in mid-career, he abandoned "the mature mind" for "andragogy" which he used as both label and package for his product, self-directed learning. This is the story of Malcolm Knowles and andragogy.

Some Famous Educators This site provides a partial, incremental list of women and men (Malcolm Knowles, Eduard Lindeman, Alain Locke, Bernice Robinson, Paulo Freire, Myles Horton) who have been mentors of students and faculty in the area of adult education over the years.
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Question 2:

Should all educational programs, regardless of age, apply the principles of adult education endorsed by Malcolm Knowles (1980)?

Answer to question 2:

Knowles' research in adult education (Learning Experiences Considered Valuable for Adults ref. to Knowles (1980)) provides a list of assumptions that distinguishes the learning styles of adults from children. Thus far he reports that:

1. Adults are more self-directed than children.
2. Adults have had many experiences that can be used as learning resources.
3. Adults have internal incentives.
4. Adults learn for specific purposes.
5. Adults immediately want to apply what they are learning.

As a result Knowles (1980) recommends adult education programs should offer the following:

1. Adult education programs should have a climate of respect.
2. Adult education programs should be conducted in a collaborative mode.
3. Adult education programs should help learners achieve self-direction and empowerment.
4. Adult education programs should capitalize on learners' experiences.
5. Adult education programs should foster participation.
6. Adult education programs should foster critical, reflective thinking.
7. Adult education programs should foster learning for action.
8. Adult education programs should foster problem posing and problem solving.

At first glance, it would seem that Knowles recommendations should apply to all learners. For example both adult and children education programs should foster a climate of respect, foster participation and achieve self-direction and empowerment. These are principles of humanity that extend beyond education. Teaching and learning are inseparable and the principles which guide these activities apply equally and need not be age specific (Critique of resource). And yet by virture of the characteristics or assumptions of adult learners that distinguish them from children (teaching adult learners at the community college), educators cannot realistically expect to implement all adult education recommendations in all educational programs. Adult learners who are more self-directed rely on their many experiences as learning resources. Children do not have this background as of yet. They lack the maturation needed to foster critical, reflective thinking because they have not had the depth or variety of experiences in their past to extract appropriate knowledge from. Currently, their learning requires a pedagogical approach with elements of andragogy. As they progress through the educational processes, the direction provided should become more self-directed (Learning: The Critical Technology, A White paper on adult education in the information age. Wave Technologies Inter. Inc.).

However, Knowles quest for the development of a self-directed, andragogical model of learning and of the conception of community learning centers as new kinds of educational facilities where lifelong learning can take place is the next step (Creating The Future). Indeed, intergenerational learning is a common element in many of the programs where his dreams are materializing, and which are encouraging facets of self-directed learning at all ages. In this way, children can then rely on others who have had the experiences to learn andragogically (A New Look at Older Adults) and educators can focus

on what is being learned as compared to what is being taught. For this to happen, educational programming will need some major renovations especially as most educational services by the end of this century (if not decade) will be delivered electronically (Educational Topics- Index- York University and Adult Learning on the Internet).

SUMMARY OF LINKS:

Creating The Future Lifelong learning: A dream by Malcolm Knowles, Ph.D. Knowles provides a bare snapshot of a transformative model of education for the future-a conceptualization of a community as a system of learning resources; truly, a learning community in which continuing learning throughout life is a basic organizing principle for the whole enterprise. He describes the model as a community in which every individual, every organization, and every institution is perceived as a resource for learning being managed by a coordinating body representative of the various categories of individuals, organizations, and institutions. The heart of this system-the entity that makes it work-is the network of community learning centers which are the new forms of education that are emerging from a society in the process of transformation.

A New Look at Older Adults Greater numbers of older adults have stimulated discussions about how the graying of America will affect future economic and social conditions, including education. This Trends and Issues Alerts reviews some current trends related to older adults that have the potential of influencing programs and services in adult, career, and vocational education. The amount and kind of learning in which older adults engage should be considered an important trend of interest to educators.

Learning Experiences Considered Valuable for Adults ref. to Knowles (1980) During the last 15 years, researchers have focused on the different learning styles of adults and children. Knowles (1980) was among the first theorists to use the term andragogy to refer to the art of teaching adults. Andragogy is now widely accepted as a theory of adult learning. Included in this article are a list of assumptions regarding adult learners and a list of recommendations that would be useful when planning effective professional development for teachers teaching adult learners.

Educational Topics- Index- York University This site, "What's New," springs forth from York University. In the September, 1996 issue an article related to teaching appeared. In it, Dr. Wayne Clugston (contact him at wayne@advanceconsulting.com) offered his explanation of pedagogy, andragogy, and (his recently coined term) technogogy based on the online course, "Introduction to Sociology," he was teaching at the time. The course was based on a student-centered learning model in which the instructor's primary role is that of a facilitator.

Learning: The Critical Technology, A White paper on adult education in the information age. Wave Technologies Inter. Inc. It's time we move from the information (overload) age to the knowledge age. To do that, we must learn how we learn and do so efficiently. Individuals and organizations must stop viewing education as something that happens only in classrooms. We must re-focus on people, their learning styles, and their needs. It's no longer technology we lack, but the ability to capitalize on brain power. This site examines adults as learners in the information age. It challenges educators of adult learners to: become conscious of the way they address various learning styles in the classroom; try to balance visual, auditory, kinesthetic, and tactile modes; offer a balance of class and experiential activities; understand how traditional behavioral strategies can be detrimental to long-term learning and

motivation; learn to implement a complete-loop methodology in their programs; learn how to make appropriate use of media and how to avoid the temptation to use a medium simply because it's new; and focus on learner needs.

Adult Learning on the Internet The Internet is becoming not just a vehicle for distributing perhaps the largest amounts and variety of information ever known to humankind via large and powerful databases, but it also serves as a tool that will likely transform the nature of learning methods as it makes available all sorts of social, personal, and interactive environments for learning. While much interest has been generated within K-12 learning and research, little has been done yet within adult education to discover and explore the potential effect and uses of this worldwide computer technology on adult learners. This interactive article will describe in some detail how the Internet can and is being used by adult learners at all levels of education as an empowering tool for learning.
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Question 3:

How might the application of adult education principles in all age categories affect the educational purposes of interfacing on the net? What similarities and what differences between an andragogical and a pedagogical approach would enhance learning on the internet?

Answer to question 3:

This question stems from the note Equity on the Internet in education between children & adults. Should there be?. While considering this question, other questions developed that concerned the concepts of developmental appropriateness and a continuum of learning to help identify the similarities as well as the differences between an andragogical and a pedagogical approach to enhance learning on the internet (Developmentally appropriate learning continuum?). Reflections on the concepts of developmental appropriateness and a continuum of learning are addressed in question five.

With respect to the similarities and differences between an andragogical and a pedagogical approach to enhance learning on the internet, it would seem that when the medium used is the internet--technology--the playing field is neutralized moreso than learning in a "real life classroom." Knowles himself concedes that four of andragogy's five key assumptions apply equally to adults and children. The sole difference is that children have fewer experiences and pre-established beliefs than adults and thus have less to relate." Differences become less significant and similarities become more cohesive in and among all learning groups--namely adult learners and children. Andragogical learners still prefer an andragogical approach with elements of pedagogy included while pedagogical learners still prefer a pedagogical approach with elements of andragogy included. The approach taken when teaching to either group varies dependent upon the maturation or the developmental appropriateness of the learner as well as the other learning characteristics detailed in question two and Adult learning styles and preferences for technology programs. Thus, the expectations of the instructor, with respect to outcome, should vary accordingly.

To decide which combination works most effectively when using the internet, one must consider the current literature. First, although materials that provide an overview of pedagogical techniques for computer-mediated communication are wanton as compared to articles that discuss pedagogical

techniques in general adult education as evidenced in Pedagogical Techniques described in Adult Education Literature, a new trend is emerging with respect to adult learners. The article A New Look at Older Adults identifies a significant trend found in recent literature (e.g., Neugarten 1996; Van Fleet 1995; Williamson 1997) that advocates age-integrated, instead of age-segregated programs and policies.

Neugarten (ibid.) predicts that "gerontology is not going to last [because] chopping up the life cycle was not a very good idea to begin with" (p. 403). According to this trend, rather than planning separate programs, educators should integrate the perspectives of older adults and what is known about their learning styles and preferences into ongoing programming (Williamson ibid). In age-integrated educational programs, older adults become both learners and teachers, sometimes imparting their existing skills and knowledge and sometimes continuing to engage in learning new things (ibid.).

Consequently, the application of adult education principles would be imparted via the perspectives of the older adults in this age-integrated educational forum as a means to sustain or improve the quality of learning particularly with the wave of technology influencing our selection of teaching methodology.

In the article Adult Learning on the Internet, it is suggested that the various means of teaching to adults on the Internet include print-based instruction, games and simulations, interactive learning communities, guides and tutorials, and a variety of computer-based delivery methods for distance learning courses. Paulsen in Pedagogical Techniques described in Adult Education Literature reports that the pedagogical technique of accomplishing teaching objectives can be organized according to the four communication paradigms used in computer-mediated communication. The paradigms are information retrieval, electronic mail, bulletin boards, and computer conferencing. The classification is derived from Rapaport (1991) who uses it in his book; Computer Mediated Communications: Bulletin Boards, Computer Conferencing, Electronic Mail, and Information Retrieval. Additional support for this classification is found in a paper by Harasim (1989). Presenting "the Collaborative Learning Horizon", she distinguished among one-to-one, one-to-many, and many-to-many learning approaches.

Whatever the approach, David Gray in LifeLong Learning with Instructional Technology cautions that all reasonable applications from the multitude of technologies available requires consideration and appropriate application. Prudence demands that the technologies and their application suit the learning needs of the users so that they don't become just "expensive, electronic page-turners."

Learning needs are often defined in terms of conditions, content modes, expectations, stimuli, distinctive behaviors, dualities, conceptual level, past experience, environment, deep and shallow information processing, field dependence / independence, and other characteristic patterns of processing information that appear to have notable differences. An abundance of research and numerous models are available to guide institutions to become more sensitive to differing learning styles which will influence their pedagogical / andragogical approach or combination thereof to promote student success.

SUMMARY OF LINKS:

A New Look at Older Adults Greater numbers of older adults have stimulated discussions about how the graying of America will affect future economic and social conditions, including education. This Trends and Issues Alerts reviews some current trends related to older adults that have the potential of influencing programs and services in adult, career, and vocational education. The amount and kind of learning in which older adults engage should be considered an important trend of interest to educators.

The Online Report on Pedagogical Techniques for Computer-Mediated Communication This online report is published material by Morten Flate Paulsen, a speaker at the ICDE-95 On-line World Conference in distance education. In his report he argues that articles that give an overview of pedagogical techniques for computer-mediated communication are more scarce than articles that discuss pedagogical techniques in general adult education. He suggests there are just a few articles that address the issue from a broader perspective. He provides a review of those articles in this web site.

Adult learning styles and preferences for technology programs Learning styles and diversity of student population are often not considered in student recruitment, the delivery of instruction, or program assessment. Researchers suggest that the school culture is often alien and frequently in conflict with the home culture. The premise supporting different learning styles suggests that culture plays an important part in determining how students learn. As our student populations become more diversified, it is important to develop and fine tune training and learning strategies that are sensitive to student differences. This is pertinent as advancing technology affects areas of instruction where the real-life model of the magic wand, the microchip and associated software, challenge our learning preferences in new and unique ways. The adult population is especially vulnerable with well-established learning styles and frequent avoidance of careers that require high computer use.

Why Adult Learning Hurts The computer industry has a stake in making you feel stupid, and it's time you got mad about it....Despite the appearance of dramatic improvement in recent years, we are falling derelict in the quest to balance the affordable high-tech of personal computers with an equally-affordable high-touch approach to using them. This is not what we were led to expect for 1994. Interfaces were supposed to be intuitive by now. Operating systems were supposed to be user-friendly. This site explores why, despite the technology, things haven't improved at a more rapid pace.

LifeLong Learning with Instructional Technology The intent of this paper is to provide a structural framework for the development of working approaches, tools and methodologies aimed at improving college teaching and learning by linking instructional technology with the higher levels of cognitive learning.

Adult Learning on the Internet The Internet is becoming not just a vehicle for distributing perhaps the largest amounts and variety of information ever known to humankind via large and powerful databases, but it also serves as a tool that will likely transform the nature of learning methods as it makes available all sorts of social, personal, and interactive environments for learning. While much interest has been generated within K-12 learning and research, little has been done yet within adult education to discover and explore the potential effect and uses of this worldwide computer technology on adult learners. This interactive article will describe in some detail how the Internet can and is being used by adult learners at all levels of education as an empowering tool for learning.
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Question 4:

Is there a demonstrable difference between how children and adults learn computer / Internet skills? How are these explained?

Answer to question 4:

On one hand I believe I am an expert on barriers to learning about computers and/or Internet. The past months of trying to keep up in this course have been most exasperating. The article referred to: Why Adult Learning Hurts offered me some better understanding about my difficulties. One quote especially caught my attention: "Young minds can soak up information without much concern about what it means, but by the time we reach adulthood our brains are so convoluted--some say polluted--that even the meaning of C:\> has to be filed in triplicate in seventeen different neural storage sites and cross-referenced with miles per hour, third grade recess, the smell of fresh asphalt on a spring afternoon, and the real crippler...life and death." Given that the Internet had no clear use to me, and that I'd had no experience with it, prior to this course, the total immersion into Internet and its language led me to feel incredibly stupid--however--I know I am not. The article recommends getting mad at the system for making us feel stupid--although the article couches it in some humor.

Part of the question posed was, should we be angry at the way the industry doesn't focus on really helping adults learn to use the computer and its resources. The author of the article had an obvious opinion and it made for some interesting reading, but the notion of getting angry because the industry isn't catering to the adult sounds too much like a remnant of the 'me generation.' (One in which I am firmly entrenched--read later about ageism)

One would need some technological skill (that I do not have) to assess whether the computer development field can make computers more accessible to adults or more user friendly than they have to date.

The anger could be no stronger at the computer industry for not being the way I want it to be than it could be at the banks for not giving me the interest rates I'd prefer. The computer industry is inextricably tied to the business community and 'the system,' and pretending it isn't is just as much in Foreverland as Peter Pan.

SUMMARY OF LINKS:

Why Adult Learning Hurts The computer industry has a stake in making you feel stupid, and it's time you got mad about it....Despite the appearance of dramatic improvement in recent years, we are falling derelict in the quest to balance the affordable high-tech of personal computers with an equally-affordable high-touch approach to using them. This is not what we were led to expect for 1994. Interfaces were supposed to be intuitive by now. Operating systems were supposed to be user-friendly. This site explores why, despite the technology, things haven't improved at a more rapid pace.
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Question 5:

How can the concepts 'developmental appropriateness' and 'continuum of learning' assist in maximizing learning via Internet?

Answer to question 5:

A) Continuum of Pedagogy / Andragogy?

As tempted as we may be to clearly distinguish pedagogy and andragogy for the sake of clarification, it is this writer's opinion that each represents a range of methods, with both of them on the same continuum.

Andragogy in my view lengthened the range of styles/methods of teaching / learning versus creating a whole new way. Andragogical methods, as some mentioned in notes in the view, could be seen as just good plain teaching! Some teachers have used these methods years before the word was coined (in North America by Malcolm Knowles.)

If pedagogy / andragogy are seen as a continuum vs. separate entities, it may clarify more easily and accurately what these terms mean.

B) Developmental Appropriateness:

Developmental appropriateness would likely refer to matching someone's developmental stage to the learning/teaching situation. Continuum of learning is more vague. Does it refer for example to Kolb's learning cycle. Kolb's learning cycle may be of value re: understanding how to improve the learning of people via Internet or distance learning. Variations on Kolb's learning cycle may help educators apply learning theory to learning via Internet. Other learning theories would also shed light. For purposes here, Kolb's learning cycle may help people better understand and organize learning opportunities on the Internet. Reference is made here to a link that can illustrate further what is meant:Human Issues in Computing

By adapting the above into planning courses and having learners assess themselves re: learning styles, learning may be maximized by tapping into the learner's preferred style. This would also lead to a more andragogical approach to learning. It would help learners focus more on what they are comfortable with--which may be more critical for those of us who are in a clear learning curve already when it comes to learning via the computer or Internet.

C) Ageism?

Ageism can occur in so many subtle ways, even within the minds of people, similar to racism - and often equally difficult to accurately specify, unless blatant. It may be of more value here to refer to learning / teaching situations on the Internet taking into account people's developmental stages as well as their learning needs. I would expect, given how difficult it was for me at first (and still to some degree) to cruise on the Internet, that my difficulty was not due to my age, but more due to my inexperience. The speed of learning may relate to my age, and/or it may relate to a host of other factors. Because I have never taken a course via computer before, it has been unusual to never meet others from the class. It is a different quality. My age may increase the level of importance of this factor in my consideration of this course as a learning experience for me.

As the article referred to in Question four, children may accept what they view with less of a discriminating eye, but, an adult's eyes may be getting tired of discriminating, especially information that seems to go on endlessly and has no clear validation or for what appears to have little in common with the world that the person is familiar with.

It is a commonly accepted notion that as people age, generally, they find change, or learning new things takes longer and may be more difficult. Given the speed of change and development of the computer industry, (which is only matched [speed-wise] by the Harris government) it seems to be a necessary evil that older people will, generally speaking, find the computer, and the Internet, harder to learn about. My learning needs at the beginning of this course seemed to be at a very basic level with some need for very concrete repetitive information. Some others in the class seemed more prepared to venture into newer territories and assimilate information. Courses naturally cannot be all things to all people, but 'a course' could possibly present various formats, and learners could choose specific formats that are within their range of comfort, while still being able to explore other formats to provide more challenge. For example, the course outline could provide an introductory section that reviews with students their experience and preferred learning style and then students select a stream or format that moves at a pace that may help learning be more meaningful.

SUMMARY OF LINKS:

Human Issues in Computing While most of us recognise that the saying 'You can't teach an old dog new tricks' is false, we often do not realise that people learn in a variety of ways, and that different people prefer to learn things in different ways. If we can help learners assess themselves re: learning styles, learning may be maximized by tapping into the learner's preferred style to better understand and organize their learning opportunities on the Internet. This article helps identify learning styles and the design of appropriate learning experiences.
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Question 6:

"Does this mean that the Internet, given its technology the way it is designed is primarily andragogical?"

Answer to question 6:

We would like you to answer this question yourself. Our conclusions have been noted but in trying to provide an environment that is andragogical in nature this question is posed with no definitive answers.

Review the links that have been provided and make your own conclusion to this question.

Student Centred Learning This site as mentioned provides you with a variety of theories on learning and instructional design and how it relates to technology.

Educational Topics- Index- York University This site, "What's New," springs forth from York University. In the September, 1996 issue an article related to teaching appeared. In it, Dr. Wayne Clugston (contact him at wayne@advanceconsulting.com) offered his explanation of pedagogy, andragogy, and (his recently coined term) technogogy based on the online course, "Introduction to Sociology," he was teaching at the time. The course was based on a student-centered learning model in which the instructor's primary role is that of a facilitator.

Pedagogy, Andragogy, Technology This site will give further insight into the student-learning model of the latter course. It introduces you to the term "technogogy".

Using Technology in Teaching-York Univ. This site is a resource centre for anyone interested in using technology for teaching. There are a variety of resource options including What's New, How to..., Starting Points, Tools, FAQs, Archives. York University manages the site.

After viewing these sources consider how learning on the Internet might change the way of learning and how will we discriminate the information that is provided.
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Question 7:

Is the internet geared more toward an active or passive learning style?

Answer to question 7:

In Note 1775 the question is asked, "Is the Internet geared more toward an active or passive learning style? "What I mean by this is does the capabilities of the Internet make it more conducive for a didatic type teaching style where the teacher gives you all knowledge or is it more conducive to allowing the student to be active with the information that is provided, building their own knowledge by these resources." In making this comment, the learner considers her experience with another course involving constructivist learning as well as with WebKF. She thinks that "it is also valid when considering the issue of whether the interfacing that is provided on the Internet assists in "teaching" and / or "learning" and the importance this would have when designing an educational web page or selecting one to use as a resource." Further discussion is prompted by this individual's concluding questions, "If the interfacing of the resource just provides us with information and does not allow us to explore, whether as an adult or a child, how effective has the teaching been in the learning process? How active or passive has the resource allowed us to be? Which interface would make for a better learning environment? The response in Note 1873 states that "Internet Resources may suit both types of learning --the learning piece depends more on the learner / student / user versus what the Internet provides." This individual thinks that "an andragogical focus would lean towards saying that the "teacher can teach whatever he / she wants" but the learner or student will take away what THEY determine to be important, if anything. So, a learner who has a passive style may pick up or incorporate as much as someone with an active learning style, e.g. experiental learner. The experiental learner may not learn certain things from Internet resources, but may learn things that he/she could apply in other learnings." The response in Note 1875 asks another question. "Do you think it would make a difference on how the site has chosen to do their interfacing that would encourage either active or passive learning?" In Note 1878 a link to an article, Student-Centred Learning, is provided that considers the relevancy of an active versus passive learning environment. The note indicates that "in the evaluation discussion of this link you will find that it is recognized that computer technology facilitates this learning style yet educators had some problems in that the student-centered learning environment sometimes lacked in structure and that they did not always have "clear cut learning goals". It was noted though that Hypermedia allowed for organization, visual support and also allowed for a more active learning environment. The concern was that there are many programs that are not "instructional in nature just instructional resources." The final comment concludes by suggesting that readers click on Index to chose from other articles related to the discussion and consider, "Since our discussion is on the interfacing of Internet Resources do you have any thoughts on how resources could be designed to enhance learning (possibly with a more active learning style)? Or is the

purpose of the Net just to provide resources (possibly with a more passive learning style)and leave the instruction to computer-mediated courses? " A class member responds in Note 1937 by agreeing that "many interent resources are instructional resources not "instructional". We make them instructional based on how we choose to use them in an educational setting." Further, the class member responds by asking, "How resources could be designed to enhance learning (possibly with a more active learning style?" "Would this depend on how the "facilitator" or teacher has set up or designed the experience?" Experiences such as those that involve searching out sites and evaluating differing points of view or evaluating different perspectives of different sites that have been already searched, promote higher levels of thinking and active participation in the process. The learner must actively visit the sites, read, evaluate and develop opinions based on the information (thus, develop personal meaning). This is one method of how internet resources could enhance learning. Although this would be possible using a variety of texts, the internet provides much easier and faster access to each resource, permitting back and forth movement as needed to compare and contrast information. Active learning situations can be created with any resource material depending on the structure and goals of the lesson."

Shannah Segal, in Constructivism and Adult Education. This site is recommended as being relevant to the earlier discussion. The relationship between constructivism and computer technology is discussed," While both Piaget and Vygotsky are prominently mentioned in most texts on constructivist learning (Wilson, 1996; Duffy et al, 1993; Papert, 1980), more modern theorists have begun to examine critically the implications of the philosophy. With the advent of computer-based instruction and the ever growing capabilities of technology, the potential for creating effective constructivist environments has multiplied exponentially. Within the field of instructional design and technology, the theory has become popular among both theorists as well as practitioners who are creating and studying practical applications. One of the most notable and perhaps vocal proponents of constructivism has been Seymour Papert, who has extensively discussed and illustrated the power of computers when combined with constructivist environments to educate children." It is interesting to read further that "In exploring the growing body of literature in Adult Education, one finds little reference to constructivism as such. However, the concept and controversy of constructivism bears remarkable resemblance to that of andragogy, which was originally defined as the "art and science of helping adults learn" by leading theorist, Malcolm Knowles. Knowles, having re-examined his original assertions about the unique characteristics of andragogy, now believes that it is not simply a theory of adult learning, but describes it as a situational model for human learning (Feuer & Geber, 1988). As with constructivism, what's important is the individual learner in a given situation. Also like the history of constructivism, the topic stimulates much controversy due in part to differing philosophical orientations, as well as classification dilemmas of the concept itself (Davenport & Davenport, 1985). Is it a theory, mental method, technique, or set of assumptions (i.e., paradigm)?

In beginning to examine the rich body of research around andragogical principles and the social context and history of adult education in general, one can find many philosophical connections between adult education theories and constructivism. However, in searching the literature on constructivism, one does not find reference to any research in adult education, but it is not necessarily because the field is uninterested in constructivism. If anything, the reason for the lack of connections may simply be due to the fact that Adult Education broke off from mainstream educational research several decades ago and in trying to establish itself, many ideas and theories do not use the same conceptual framework as other fields within education."

The above discussion clarifies and confirms the active nature of the learner's interfacing with the internet

while recognizing that passive interfacing does occur. This use of the internet and computer technology is very compatible with the constructivist philosophy as clearly articulated above in the reference to "Constructivism and Adult Learning." The internet becomes an active tool in the hands of the constructivist.

SUMMARY OF LINKS:

Student Centred Learning A variety of theories of learning and instructional design are applicable to the structure of the World Wide Web. In particular, evidence of student centered learning, Constructivism, hypertext, and hypermedia are present in the World Wide Web. The following is a discussion of the applicable theories and conceptual framework for the World Wide Web.

Hypermedia Hypermedia and powerful new technologies offer teachers the choice of embellishing the existing curriculum or breaking the mold, or perhaps doing both. Given the demands for teachers to respond to a variety of different learning needs in the same learning environment, curricular embellishment offers immediate benefits. Hypermedia can provide extensive visual support for comprehension. This site introduces the reader to the benefits of hypermedia.

Index This site provides a description of the project that led to the development of this Web site, and a review of related research. The focus of this project is utilizing the world wide web to advance student education into the 21st century.

Constructivism and Adult Education In exploring the growing body of literature in Adult Education, one finds little reference to constructivism as such. However, the concept and controversy of constructivism bears remarkable resemblance to that of andragogy, which was originally defined as the "art and science of helping adults learn" by leading theorist, Malcolm Knowles. This site briefly examines the diverse histories of both Constructivism and more specifically Transformative Learning Theory, while the remainder of the paper compares the assumptions and beliefs of constructivist learning theorists (notably Seymour Papert) with those of adult learning theorist Jack Mezirow.
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Question 8:

How are community technology centres part of virtual communities as locales of lifelong learning?

Answer to question 8:

In Note 1647 a member of the group initiated a discussion by referring to a quote from Malcolm Knowles re. andragogy and the electronic medium. This quote was found at Creating The Future. Dr. Malcolm Knowles concluded his book Andragogy in Action by noting that "We are nearing the end of the era of our edifice complex and its basic belief that respectable learning takes place only in buildings and on campuses. Adults are beginning to demand that their learning take place at a time, place, and pace convenient to them. In fact, I feel confident that most educational services by the end of this century (if not decade) will be delivered electronically . . . . Our great challenge now is to find ways to maintain the human touch as we learn to use the media in new ways." The individual making the remark comments further that Knowles' "quest for finding these new ways has led to his development of a self-directed,

andragogical model of learning and of the conception of community learning centers as new kinds of educational facilities where lifelong learning can take place.

Indeed intergenerational learning is a common element in many of the to CTCNet to find out if there was an equivalent to this organization in Canada. Stephen Roan, Network Administrator, CTCNet responded that he was "not aware of a Canadian organization whose activities parallel those of CTCNet as a private nonprofit network of affiliated centers in a diverse array of computer access centers in community settings. I have been most impressed by what I've heard of the work of Industry Canada in supporting technology access in Canada, and am cc:ing two people who may be able to provide you with considerable additional detail about those activities." These two individuals have been active in a variety of Canadian initiatives to promote technology access and may be able to provide the group with information about Canadian groups engaged in related activities. This further information is not currently available.
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SUMMARY TO LINKS:

Creating The Future Lifelong learning: A dream by Malcolm Knowles, Ph.D. Knowles provides a bare snapshot of a transformative model of education for the future-a conceptualization of a community as a system of learning resources; truly, a learning community in which continuing learning throughout life is a basic organizing principle for the whole enterprise. He describes the model as a community in which every individual, every organization, and every institution is perceived as a resource for learning being managed by a coordinating body representative of the various categories of individuals, organizations, and institutions. The heart of this system-the entity that makes it work-is the network of community learning centers which are the new forms of education that are emerging from a society in the process of transformation.

The Community Technology Centers' Network (CTCNet) CTCNet is a network of more than 250 community technology centers where people get access to computers and computer-related technology, such as the Internet. The 250+ sites are enormously diverse in program areas and participating populations. Some are stand alone centers; others operate as one part of a larger organization, such as a multiservice agency or museum, job training center, shelter, cable public access center, etc. CTCNet is a project of Education Development Center, Inc. (EDC).

Plugged In Welcome to Plugged In. Plugged In is a community computer access organization, located at 1923 University Avenue. Some of the resources offered at the community computer center include: FREE access to computers and the Internet, reasonably priced high quality photocopy service, FREE fax service, reasonably priced creation of flyers, business cards, web pages and resumes by our teen entrepreneurs, tutorial materials and a series of classes open to all community members.
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Question 9:

Is a pedagogical or an andragogical approach more or less likely to achieve improved higher learning for adult learners using Internet resources?

"In particular, we need to consider if our interfacing and the results we achieve are reflective of higher levels of learning. Is the pedagogical or andragogical approach more or less likely to attain this goal, if at all?"
Is the pedagogical or andragogical approach more or less likely to attain the goal of higher learning? What is the correct approach for linking instruction with higher levels of cognitive learning? What is the proper combination of technology, the human aspect and other methodologies to achieve this level of learning?

Answer to question 9:

One part of Question 9 asks whether a goal of improved higher learning would be better achieved via andragogical or pedagogical methods.

The question almost assumes a leaning towards the andragogical. By focusing on the quality of learning vs. the quality of teaching, there is an automatic orientation towards andragogy vs. pedagogy.

Given the ranges of expertise of students regarding the computer and Internet, ignoring their developmental status and/or the students' level of comfort/ability may well serve to lessen the learning of students. The link: Adult Learning Styles and Preference for Technology Programs lends creedence to the need to incorporate andragogical methods into computer-mediated courses. In addition, another link earlier cited also speaks to the importance of the andragogical approach re: computer-mediated courses: Human Issues in Computing

Finally, another link that supports this focus: Strategies for Learning at a Distance

This link speaks to the higher likelihood of the students' 'deeper' learning if the program is developed with students' learning styles taken into account. The following is a quotation from the link, in its conclusion:

"Teaching and learning at a distance is demanding. However, learning will be more meaningful and 'deeper' for distant students, if the students and their instructor share responsibility for developing learning goals and objectives; actively interacting with class members; promoting reflection on experience; relating new information to examples that make sense to learners; maintaining self-esteem; and evaluating what is being learned. This is the challenge and the opportunity provided by distance education."

The resources we have located clearly favor an andragogical approach to enhance students' higher learning, with incorporating *a* combination of methodologies, technology, consideration of learning styles, and prior knowledge.

With regard to the section of this question that asks if this course assisted students to 'achieve higher levels of learning,' I am not able to measure or assess this objectively.

Through comments/reflections offered by students, they clearly wrote that they believed they had learned alot. As a student in this course I would find it difficult to imagine anyone who completed the course not having experienced being on a learning curve these past months.

I've wrestled with the notion of 'higher learning.' I do not see myself as knowledgeable enough about the students or the intracacies of how the Internet functions to assess whether students' learning was of a

nature that incorporated higher levels of learning. For example, if a higher level of learning refers to: quality evaluation, application,and/or analysis, as compared to: describe, outline, explain, etc. (which may be considered a lower level of thinking/learning) - without evaluating the learner's via some sort of outcome measurement, one would not be able to accurately assess. I am not in a position to evaluate such learning of other students.

I *would* hazard to speculate that those students who had more experience/knowledge of the computer and the Internet would be in a better position to learn/think at a higher level. Frankly, I was too busy trying to keep up.
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CONCLUSION / SUMMARY OF THE QUESTIONS:

It should be noted that our group was viewing Internet resources on our Issue Topic from an andragogical perspective. As educators in various capacities we work with adults.

Our main question for discussion: "Pedagogical versus Andragogical interfacing using internet resources - is there a difference?" began by leading to the article Why Adult Training Hurts. This was to assist us in focusing on whether interfacing changed with resources provided for adults or children. The discussion was to focus on what elements of the Internet are possible hindrances to learning from either perspective of the noted learning theories. The questions and answers that developed have been summarized.

Various articles on adult learning were provided and it was noted that Malcom Knowles considered adults as self-directed leaners. Pedagogy, often perceives children as a more dependant learner. Could this be a reason that children find it easier to 'surf' the Internet because hyperlinks could be considered directive? Has the designer designed a path for the learner to take?

Amongst the sites that were summarized it was noted that critical thinking is also a part of adult learning. In comparison, children do not have the experience to build upon therefore, critical viewing is possibly more difficult to achieve.

The links provided also made us aware of constructivist theory where we build on each others experiences. This has been successful with both adults and children in the learning process. It is a theory that has caught much attention, especially in computer-mediated environments.

The Internet is a vast place filled with many resources and opportunities for learning. Because of this vastness it is difficult, if not impossible, to make any final conclusions. We suggest you take a look at the following link Learning: The Critical Technology which is a white paper on adult education in the information age.

We hope, as a group, that the questions that were raised, and the few answers that were provided, will help you to reflect on the issue we raised. As Dr. McLean reminded us at the beginning of our Issue Proposal, an issue "has some uncertainty" to it. Therefore, the questions and answers that were summarized will not end with a conclusion.
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COLLABORATION COMMENTS:

The necessity to collaborate as a group in defining, discussing, amd reporting on an issue has been a knowledge building experience in itself. Within a three week period the group had to work with each other, coming to terms with each other viewpoints, expertise, experiences and schedules to produce a final report on our issue. This was done through computer-mediated conferencing, e-mail, Internet resources and linking to a HTML document. Although there were times that I wondered if we could accomplish what was required our group was able to work around any obstacles and produce a collaborative report on an issue we were all concerned about. Thank you Tracy, Michael and Peter!

Collaborating as a group over the internet has been a unique but pleasurable experience. I believe we worked well as a group each assuming, sharing and completing various responsibilities to successfully complete our issues discussion report. We all seemed to "fall" into our respective roles within the group quite naturally which inadvertently worked to our advantage as we progressed through the knowledge building components of the course. We responded to each other's needs and we were responsive to those needs. Our leadership within the issues discussion component of the course was andragogical--perhaps our nature because of our interest and work with adult learners--which may not have been as effective in generating an extensive number of issue responses. Nonetheless, I believe we learned from each other, the 'class at large,' and our review of the internet resources necessary to complete our group report. Great work Bev, Peter and Michael!
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REFLECTION / RELEXIONS:

In "Researching the 'Good Life': Reflections on Professorial Practice" (Knowles and Cole, 1994) reflection and reflexion are differentiated. The significance of these two terms as they relate to what has been learned individually, as a group, and as a class while conducting the discussion on andragogy / pedagogy will become apparent in the following reflections.

Inquiry was described by Knowles and Cole (1994) as becoming reflexive "when we situate this inquiry in the context of our personal histories in order to make connections between personal lives and professional careers, and to understand personal and early influences on professional practice." This term was contrasted with the term reflection which is described as "the ongoing process of critically examining and refining practice, taking into careful consideration the personal, pedagogical, curricular, intellectual, societal (including social, political, historical, and economic), and ethical contexts associated with professional work? (p. 11). Knowles (1996) elaborates further on the notion of reflexion,

A reflexive practitioner engages in the inquiry. By 'reflexive practitioners' I mean teachers who are able to critically examine their own pedagogical practices in the light of encountered educational, social and cultural, political, and historical contexts--as well as their personal histories and professional experiences--for the purpose of taking proactive positions within the context of their professional program responsibilities and domains of practice. These people, in essence view teaching and their other professional activities as an ongoing inquiry process. As such, reflexive educators are empowered in decision-making and are potential change agents within the contexts in which they work.

The notion of reflexion is certainly very compatible with andragogy's learner-centred focus. In Learning:

The Critical Technology (A White Paper on adult education in the information age) the discussion on pedagogy and andragogy is recommended for the readers reflection as well as reflexion. The authors begin their discussion by suggesting that "teaching systems have gotten somewhat off track and have been concentrating on pushing information into the students." Instead of learning being seen as a process of active inquiry, too often it has become one of passive reception. In this context, teacher-focused learning (pedagogy) has come to dominate formal education. John Dewey's attempts to emphasize learning through various activities rather than traditional teacher-focused curriculum have influenced many educators to adopt a learner-focused education philosophy. Unfortunately, a century after Dewey proposed learner-focused education, most formal education for children as well as adults still focuses on the teacher. Malcolm Knowles, in 1973, published the book The Adult Learner: A Neglected Species. "Knowles asserted that adults require certain conditions to learn. He borrowed the term andragogy (and-rè-go´jê) to define and explain the conditions. Andragogy, initially defined as "the art and science of helping adults learn," has taken on a broader meaning since Knowles' first edition. The term currently defines an alternative to pedagogy and refers to learner-focused education for people of all ages." In the following comments we are going to reflect on what was learned about conducting this activity in the context of five issues related to learning within the andragogic model. These issues include:

1. Letting learners know why something is important to learn
2. Showing learners how to direct themselves through information
3. Relating the topic to the learners' experiences
4. People will not learn until they are ready and motivated to learn
5. Requires helping them overcome inhibitions, behaviors, and beliefs about learning.

From the general discussions in 1514F on the potential issue topics, four individuals emerged with an interest in exploring the issues related to andragogical versus pedagogical interfacing on the internet. Discussion by e-mail resulted in some concensus about the direction to pursue as a group with the class and a note being posted on WebKF related to the topic. Knowledge building has occurred during the remaining weeks of the course. As we reflect on what we have learned about conducting this activity, it seems worthwhile to consider our thoughts within the context of the five issues associated with the andragogic model. In the process of learning and articulating our beliefs about andragogy much reflection as well as reflexion has occurred for everyone in the group as we have attempted to relate andragogy to ourselves within a learner-centred model. How successful have we been as individuals, as a group and as a class in addressing these five issues?

1. Letting learners know why something is important to learn
2. Showing learners how to direct themselves through information
3. Relating the topic to the learners' experiences
4. People will not learn until they are ready and motivated to learn
5. Requires helping them overcome inhibitions, behaviors, and beliefs about learning.

Individually and as a small group of four, all five issues have become very relevant personally and professionally. We have however experienced limited success in engaging the larger class in our discussion and addressing these issues. The few who did participate in the discussion extended it through their questions, comments or suggestions. Some factors that may have influenced the process include:

- We were a minority interested in adult learners as compared to the majority being involved with children.

- We were more learned-centred (andragogical) in our approach to asking as well as answering questions rather than being teacher-centred (pedagogical).
- The topic was less applied compared to others and did require a higher level of thinking. Rather than looking for the right way to teach adults we were considering the implications of adults learning via the internet.
- The course itself in terms of its methodology is primarily pedagogical with elements of andragogy.

In light of these considerations we believe that we have let the class know why it is important to learn about andragogy; showed them how to direct themselves through information and encouraged course participants to relate the topic to their experiences as learners. The contributions of group members to the discussion reflected the success in these areas more than the contributions from the larger class group. Some of the initial confusion over definitions may have influenced some not to participate as well as the fact that there was not time to participate in all discussions. For many, the discussion on andragogy / pedagogy may have been seen as less relevant to their learning. The last two issues may also partially explain the limited success that the group had in engaging others in the discussion. If one agrees with the assumption that learning for children and adults continues to be primarily pedagogical rather than andragogical, perhaps it is not unreasonable to expect that others in the class were not ready and / or motivated to learn about andragogy and interfacing with the internet. It may also be a reality that we as a group of four individuals interested in and committed to andragogy were not able in the time available to address the inhibitions, behaviors, and beliefs about andragogy.

The most significant success in relation to all five issues has definitely been at the individual and small group level. Reflection and reflexion have been occurring simultaneously during the past few weeks. As we reflect back on what we have learned through conducting this activity each one of us recognizes that the learner-centred focus that we have discussed will be a signficant influence in our personal and professional lives as we complete 1514F and direct our learning in new and / or related directions.

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Learning: The Critical Technology (A White Paper on adult education in the information age) http://www.wavetech.com/whtpaper/abttmwp.html#Information

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