

## Developing Course Material for Online Adult Instruction

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### Abstract

Many instructors that teach face-to-face use the traditional method of teaching; lecture, discussion, lab, and practice. They move the course to the online environment using the same methodology. Adult instructors do not always have formal training in developing course material and do not always understand the pedagogy of the adult learner. To use the online tools effectively, instructors must be familiar with the technology available to them as well as how to use it. This paper describes effective andragogical methods for adult instruction. It will also present the available tools and the method and reason for using them. By reviewing the research of current methods of instruction, a road map to course design will be recommended. There are effective techniques to presenting face-to-face material in the online environment that will allow the adult student to achieve a higher level of satisfaction of learning and cognitive understanding of the course material.

**Keywords:** instructor facilitation, pedagogy, andragogy, motivation to learn, Knowles, delivery methods, virtual learning environments, course modules, course design, RSS, wiki

### Introduction

Traditionally the methods used to teach are based upon educational research and best practices. Much of the way untrained instructors teach students is derived from how they were taught as students themselves. The role of the teacher can be either as facilitator or director. When teaching younger individuals the teacher achieves best results using the director mode. However “when teaching adults it is the mode of facilitator that can guide the student to achieve proficiency.” (Knowles, 1975)

Because, online instruction has permeated the educational culture of our schools and Universities it is becoming more the requirement than the option that course material be deliverable online and facilitated effectively. Much of the same material can be used for online instruction but it needs to be massaged for the audience to use in the most effective manner. This paper is not meant to be an anthology of resources just a starting point for the best and available methods to date.

Many instructors have experience with using technology in the classroom but do not have a good grasp of effective methods of teaching online. A study from the University of Glamorgan, UK pointed out that, “most lecturers focus on content, are experienced in face-to-face teaching, have little pedagogical training (although this is changing) and experience of facilitating learners online” (Connolly, 2007) The methods used in online instruction do not differ extremely from face-to-face methods but the barrier of communication is much more difficult to bridge and must always be taken into consideration. Because this barrier can be more pronounced for online courses than in face-to-face taught courses the delivery method of the material should be extremely well organized and the communication methods should be more pronounced and more diverse.

One method of instruction that works well for student learning assimilation is group collaboration or cooperative learning. Even though this is a highly effective method of instruction and is quite manageable in an online environment it is quite a broad subject and deserves to be left for discussion of its own.

## **Pedagogy or Andragogy?**

### *Pedagogy*

The literal translation of pedagogy is the art and science of teaching children. Typical practices of teaching children use a teacher directed approach where the teacher decides what is learned. The teacher has full responsibility for making decisions about what will be learned, how long to give child before testing for learning, and if the material has been learned. This places the student into a submissive type role in their learning. It is assumed that the child learner must be shown how to learn and given all the techniques to understand what they are learning. Students would be dependent upon the teacher to provide the topic, what they will learn about it, and how they will learn about it. The teacher plays the role of authority and the learner is not used as a resource for information but to be given information. It is assumed that the young learner has a uniform learning by age level and curriculum. The students relationship to the learning is subject centered. The students motivation is provided through external rewards and punishments or credit for learning.

The younger student is taught through lecture, practice, evaluation, and review. Such newer methods include journaling to aid in understanding and self reflection, and cooperative learning to assist with comprehension.

### *Andragogy*

Andragogy is the art and science of teaching the adult to learn. Malcolm Knowles developed five assumptions on the characteristics of the adult learner.

- Self-concept: As a person matures his self concept moves from one of being a dependent personality toward one of being a self-directed human being
- Experience: As a person matures he accumulates a growing reservoir of experience that becomes an increasing resource for learning.
- Readiness to learn. As a person matures his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles.
- Orientation to learning. As a person matures his time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly his orientation toward learning shifts from one of subject-centeredness to one of problem centeredness.
- Motivation to learn: As a person matures the motivation to learn is internal (Knowles 1984).

Considering these assumptions it is proposed that adult instruction is accomplished differently. Since the adult learner is the center of the instruction instead of the teacher, the teacher is the facilitator of the students learning. To aid in the facilitation of course information, Malcolm Knowles and Stephen Brookfield, also considered an expert in the field of adult learning, developed principles to be implemented in adult teaching methodology. These are:

1. the participation of the learner should be voluntary,
2. create a cooperative learning climate and demonstrate respect for the students self worth,
3. collaboration to develop goals and objectives,
4. utilize practical application to achieve goals and objectives,
5. critical self reflection of learning and the quality of what they learned, and
6. nurture of the self directed, empowered adults. (Brookfield, 1986; Knowles, 1980)

A strong level of communication must be used to facilitate the adult learners feeling of worth, and provide opportunities for collaboration and reflection. To help visualize the difference between the two educational models the following chart summarizes each.

**Assumptions of Pedagogical and Andragogical Models (Kelly, 2006)**

<b>Assumption about:</b>	<b>Pedagogy</b>	<b>Andragogy</b>
Concept of the learner	Dependent on teacher (passive)	Increasingly self-directed (active)
Role of the teacher	Authority figure	Guide and facilitator
Role of the learner's prior experiences	To be added to more than used as a resource	A rich resource for learning by self and others.
Readiness to learn	Uniform by age level and curriculum	Develops from life tasks and problems.
Orientation to learning	Subject-centered	Task or problem-centered to meet life needs.
Motivation	By external rewards and punishments ("credit")	By internal incentives and curiosity.

*Why use Andragogy?*

Because of the adult students needs and motivations the most suitable format for course arrangement would be to use the Andragogical model. Courses are still taught in a pedagogical style but as instructors of adults it is important to evolve and enhance their own understanding of how they, the instructor has learned the same material. This is termed metacognition. "It (metacognition) includes knowledge about when and where to use particular strategies for learning or for problem solving." (Santrock, 2008) Until a student can metacognitively evaluate their learning. It is best to use a pedagogical approach to instruction. Once the individual has achieved the ability to evaluate how they learn and what they want to learn then andragogical instruction methods are best used.

Much of the struggle of moving face-to-face course material to the online format has been in the area of technology but with improvements in the tools available and the increase of the mainstream consciousness of Web and Internet concepts, there really isn't any reason for not being able to effectively put a course online.

**Face-To-Face Courses versus Online Courses**

Research in the field of online instruction has found that there is very little difference in a students ability to learn course material from online methods versus face-to-face methods. A study conducted by Charlotte Neuhauser for Madonna University, School of Business evaluated two courses with the same content. One was taught online and the other was taught face-to-face. Her results supported prior research finding that there is no significant difference in the major metrics-test scores, assignments, participation grades and, final grades. With the right resources and a good plan a very strong effective course can be developed and implemented.

Except for what has been discussed about the assumptions of the adult learner it is safe to say that there are rarely any additional assumptions from the online learner. The availability of a computer and a high speed internet connection no longer needs to play a significant role in the decision to put a course online.

A strong consideration to evaluate is the students ability to make their way around the operating system and understand the basic operation of a computer. If there are to be additional requirements made of the online learner then they are usually made in the course syllabus, giving the student enough time to consider their ability to meet them. More detail will be discussed on this topic later.

### *Online Delivery Methods*

It is very easy to get caught up in the jargon of computers when talking about teaching anything online but if the emphasis is given to the principles of facilitation then the creation of course content becomes easier. There are numerous methods to deliver course material to students. Most of the Universities in the United States will use at least one method. This method of delivering course material is called, the virtual learning environment. This learning environment can be achieved using preprogrammed software packages such as [WebCT/Blackboard](#), or Web programmed applications such as [Mindflash](#). An open source solution such as [Moodle](#) or [Sakai](#) can be used by anyone to deliver course content or custom designed Websites that assist in delivering content. Open source means that the code that created the application can be altered to fit any need. All of them can help achieve the same result of delivering course material some will seem more virtual than others. The delivery method is often beyond the control of the course designer and all of them have limitations.

### *Communication between Student and Instructor*

There are many ways to open the lines of communication between the student and instructor if the instructor focuses on acting as facilitator. The methods of communication must be varied and not just exist between student and instructor but between student and student. The methods used should be timely and available to all students. That doesn't mean that all students must communicate using all methods but should be able to use more than one. The more methods of communication available to the student the more collaboration possible and the student feels the instructor values the students input. Many students are not in the same time zone so that communicating at specific times is not always possible. In other words it is very important to have multiple forms of asynchronous, and synchronous communication methods. An example of asynchronous communication would be email where the initial message is sent and the sender must wait to receive a response. Chat is an example of synchronous communication where both users are online at the same time giving and receiving information in a real-time conversational mode. The student will be informed before beginning a face-to-face course what the minimum communication requirements are, and if there is a scheduled class time requiring synchronous communication. Making a required meeting time might be unrealistic for adult students and would erode the feeling of student self worth and value that is necessary when teaching adults. It is necessary to be open minded about the potential methods of communication. Thinking beyond the traditional methods of telephone and e-mail is mandatory.

It is highly recommended that if any tool is to be used that it be tested first by having the students complete a simple assignment. Testing the methods of communication can be accomplished many ways by creating an assignments that requires the student to use different communication methods. An ice breaker, such as personal introductions are commonly used in the beginning of a course to introduce the discussion board process. Which aids the instructor with evaluating students ability to use the discussion board system, a form of asynchronous communication. Online meeting tools, such as [Adobe Connect](#), [WebEx](#) or [iLink](#), can be used to have synchronous communication This communication can occur either from instructor to student or instructor to entire class. These methods of communicating are used best when there are more than two people involved. These types of tools provide a robustness to static material being presented to students, such as a PowerPoint presentation. It is possible to display a PowerPoint while the instructors voice is broadcast to the students in attendance, describing what they are seeing. Other features offered by these tools include a simulated chalk board or writing tablet that allows the instructor to hand write or type out key parts of their audio presentation. Some of these tools provide the instructors the ability to take control of a students computer, with the students permission. This tool provides for a more instructor directed approach to solving a problem. All of these tool features can be recorded allowing those students that cannot attend the ability to view the same discussion at a more convenient time, thereby not missing any course content that others might have benefitted from. To test this method of communication it is recommended that the instructor have a discussion of a predetermined topic or some other ice breaking method to make sure that any audio and visual

communications problems are solved and demonstrate to the students another method of synchronous communication.

To test students chatting ability and open up another method of synchronous communication, is to have students either set chat appointments or have them have a chat with you by the end of the course's first week. Macintosh platforms have an application titled [Adium](#), that allows for simultaneous chat between multiple chat accounts. One version that is available for the Microsoft operating system is titled [Pidgin](#). Almost all the methods of distribution and communication should be platform independent. There should be a way for all users to access the course information on any platform.

A schedule of communication should be laid out for all to see and use. Initially course communication should be frequent and detailed as the course progresses and students develop a comfort level with the technology and the course communication requirements stabilize. Also a set of conduct guidelines or rules should be posted and enforced. It is not pleasant but there are conflicts which must be dealt with swiftly. Course evaluations are much less favorable if the technology doesn't work and the student has had continual trouble.

### *Course Design*

Most face-to-face courses will have these components but they might be accomplished online using a variety of formats. If Web usability is considered, it is valuable to note that end users do not always like being required to download documentation. This varies from user to user but it is strongly advised that there be an online viewable method. A PDF file is perfectly acceptable form of delivering information but not the most efficient. Not all computers will open the file immediately upon a students download request which makes it necessary for the student to have to hunt for the file and open it. This method is fine for archiving course material but when viewing the course from other devices other than a computer, such as smart phones, this process is too cumbersome. Still continuing to provide the course content PDF file in addition to the content on a viewable web page is important as many students still like to print out the course information as well as read it in a web page format.

### *General Course Areas*

Somewhere right up front in whatever delivery method you use, the course description and course syllabus along with contact information, office hours and objectives of the course should be available. It is recommended that a separate calendar of assignments and weekly topics be posted in a relevant order for reference at any time. The calendar of events and due dates will be accessed much more frequently than the general course syllabus.

When appropriate, a location within the virtual learning environment should be designated to post examples of the best student work. This method works well when having problems with students achieving a minimal level of acceptability. When posting student work, comments why the work is exceptional or what the students can do for general improvement are valuable class comments. Demonstrating how the work is exceptional is valuable to those that might need to stretch their abilities. This doesn't have to be reserved only for exceptional work but for good work. Any positive examples that students can learn from help improve confidence and understanding of the objectives. It is important to make sure that when posting any student work that the syllabus has informed the student of this method and the student gives permission to do so, unless the student contacts the instructor and makes other arrangements. Also it is not appropriate to post poor student work and use it as an example of what not to do. Posting poor student work can be done as long as it is anonymous and the work is critiqued in a positive learning form and not a negative demeaning form.

### *Module Oriented*

Modules typically consists of the same content that would be in a face-to-face course lectures. This material is enhanced through links, visuals, tutorials and mined Internet content that can be delivered to students in any number of segments. It is not necessary to deliver the modules weekly but, it is imperative that they are delivered consistently. The course material can be a written lecture but using the power of the internet for timely information and adding accessible links adds relevance. It is not recommend to use a detailed PowerPoint unless an audio track or detailed slide notes are included to help describe the line items within the PowerPoint. However a basic audio lecture shouldn't be the only method used to deliver

content for a course. An audio lecture should include links to other resources for additional explanation of the material or tutorials that demonstrate the material. With a lack of variety of distribution methods, students can quickly become bored and their opinion of what they are learning decreases, meaning course evaluations are lower. A fine line must be traversed between creating an interesting course and a confusing course. By offering a variety of distribution methods the instructor is not removing consistency.

One of the newer methods of delivering course content is the wiki. A wiki is a Web page or collection of Web pages designed to enable anyone who accesses it to contribute or modify content, using a simplified markup language. Wikis are often used to create collaborative Websites and to power community Websites. The collaborative encyclopedia Wikipedia is one of the best-known wikis. Wikis are used in business to provide intranets and Knowledge Management systems. (Wikipedia, 2008) A study conducted in 2007 at Victoria Wellington University by Irina Elgort (2007), used wikis in a face-to-face course to assist part time students to do more outside the classroom and to help those students that weren't extremely comfortable with technology, to make improvements in their use of the technology. The results of the study found that the wiki environment was clearly perceived as effective in supporting group work, as indicated in students' comments provided in an anonymous post-course survey.

Another method of module distribution is an RSS feed. RSS is a family of Web feed formats used to publish frequently updated works—such as blog entries, news headlines, audio, and video—in a standardized format. Web feeds can benefit instructors by letting them syndicate content automatically. (Wikipedia, 2008) Syndicating is just another way of saying publish or notify. This is very useful when instructors have to change any of the already posted material within the course. Students are immediately notified and can respond if necessary to any of the changes. Today's smart phones have RSS readers making this technology extremely timely.

Developments in social software and social websites (RSS, podcasting, blogs, Facebook, Twitter, etc.), combined with instructional support tools such as online video tutorials and course management software, create new possibilities for both library instruction and outreach initiatives. Because of this, the Virginia Commonwealth University (VCU) Library system science library undertook an initiative to incorporate social software in their operation. The installation of the initiative was deemed successful because there was an increase in library presence from four classes to fifty-five classes. (Kirlaw, 2006) Additional initiatives were being planned at VCU for incorporating social software into class material.

Social software and websites can be used in courses to facilitate group communication by providing students the ability to update each other on new material faster and share appropriate content examples of work for critique or evaluation. For example Facebook sends an automatic notification when someone has posted new content to a Web page or posted feedback.

### *Feedback and Evaluation*

There are many types of evaluation methods. What works for the face-to-face system, works for the online environment. The method of choice can still be delivered virtually. Online delivery methods can incorporate testing of various types, multiple choice, true false, essay, etc. Passwords can be given so that only registered students can access and submit test. Timing tests and forcing completion of test can help in determining the level of course material understanding. If the course is project based, project submission methods could be by e-mail or what Blackboard calls, drop boxes. External evaluation sources can be used by an instructor that does not have access to a all encompassing course deployment system, such as Blackboard.

### **Andragogical Course Development and the Online Learning Environment**

The *New Horizons for Learning Quarterly Journal* published an article by Dorothy Billington (2002), a writer and researcher on adults and how they live, which gives seven key factors found in learning programs that stimulate adult development. These factors take Malcolm Knowles basic principles and expound upon their meaning.

1. An environment where students feel safe and supported, where individual needs and uniqueness are honored, where abilities and life achievements are acknowledged and respected.
2. An environment that fosters intellectual freedom and encourages experimentation and creativity.

3. An environment where faculty treats adult students as peers--accepted and respected as intelligent experienced adults whose opinions are listened to, honored, appreciated. Such faculty members often comment that they learn as much from their students as the students learn from them.
4. Self directed learning, where students take responsibility for their own learning. They work with faculty to design individual learning programs which address what each person needs and wants to learn to function optimally in their profession.
5. Pacing, or intellectual challenge. Optimal pacing is challenging people just beyond their present level of ability. If challenged too far beyond, people give up. If challenged too little, they become bored and learn little. Pacing can be compared to playing tennis with a slightly better player; your game tends to improve. But, if the other player is far better and it's impossible to return a ball, you give up, overwhelmed. If the other player is less experienced and can return none of your balls, you learn little. Those adults who reported experiencing high levels of intellectual stimulation--to the point of feeling discomfort--grew more.
6. Active involvement in learning, as opposed to passively listening to lectures. Where students and instructors interact and dialogue, where students try out new ideas in the workplace, where exercises and experiences are used to bolster facts and theory, adults grow more.
7. Regular feed back mechanisms for students to tell faculty what works best for them and what they want and need to learn--and faculty who hear and make changes based on student input.(Billington, 2002)

Considering the objectives for andragogical course design, Knowles principles and Billington's descriptions, the following techniques should be used to best design online course content. To foster a safe online environment have discussion board rules and make sure that students are aware that any criticisms or critiques used for grading purposes are distributed individually and privately. Provide assignments that allow for personal opinions and those that draw from past student experiences and allows for the students choice of topics to foster intellectual freedom and encourage experimentation and creativity. Create assignments that ask the student to locate new research or a new development and then have them share their experience or their findings aid in showing students the desired peer to peer respect. Use the capabilities that wikis bring to build better course material for future courses which gives the instructor a continual improvement process that is not self driven but student need driven. Require students to incorporate a new technology into their method of communication and pace assignments to aid in improving the level of intellectual challenge a course offers. Use online content delivery methods such as Adobe Connect, Sabre Centre or WisLine Web to bring the student closer to the instructor and ask for active involvement. Have students evaluate how well they performed each assignment and how they might use it in their everyday lives, this will incorporate a timely method of active evaluation and give the adult learner the comfort level that the instructor is using a method of continual improvement in delivering course material.

## Conclusions

It is appropriate to incorporate assumptions of adult learning when teaching adults. Adult learning assumptions include the ideas that adults are self directed, look to the instructor as a facilitator, wish to have their background included as the rich resource that it is for additional learning by themselves and others in the course, wants assignments to be relevant to life tasks and problems and is motivated by their own desires not by others.

Online courses work well for adults because of the daily stressors and time constraints that adults have. Studies have shown that courses delivered online or face-to-face have little difference in performance outcomes for students. The methods of online instruction might be out of the instructors control since the method of delivery such as Blackboard, Moodle or Sakai might be already chosen by the institution that employs the instructor however, the additional tools that are used and how they are used are not. Not all tools discussed here need to be incorporated into a courses delivery to create an effective online learning environment. There is still room for personal preference in choice of methods of communication and module delivery. Continuing to learn and try new methods of communication will aid in improved learning and foster teacher student respect and collaboration.



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