Andragogy in the 21st century:
Applying the Assumptions of Adult Learning Online

Dan Ferreira
English for Liberal Arts Program
International Christian University

George MacLean
Global Education Center
University of the Ryukyus

Abstract

Regardless of whether their motivation is intrinsic or extrinsic, adults undertake a course of learning with much more sophisticated needs and expectations than younger learners, and this will strongly influence their persistence. The six assumptions of Knowles' Andragogical Model provide insight into this psycho-motivational cocktail that we will use to make practical recommendations for instructors about how to fully activate adults' imperative to articulate and accomplish their online educational goals—an essential variable toward their success. Given an attrition rate of up to 80% for some online learning contexts, it is vital that the educational approach of instructional design for online learning aligns with the learning objectives that correspond to learners' real-world needs. If educational technology is to live up to the promise of enhancing online learning outcomes, a different paradigm for instructional design and delivery of content is needed. This paper will provide guidelines and techniques for incorporating adult learning principles into the structure, delivery, and mentoring/administration of online courses of study.

One of the few things that almost everyone will agree on is that online learning is an increasingly viable means of obtaining an education. Still, whether it is a single course or a full-fledged degree program, the reality is that instructors and instructional designers at most institutions are poorly trained to deliver online learning content effectively. A simple Google search about online education will return a plethora of results reporting on high attrition rates. Nevertheless, more and more institutions are offering online education components (Onah, Sinclair, & Boyatt, 2014; Shimoni, Barrington, Wilde, & Henwood, 2013). One of the main reasons for such high dropout rates is that online instructional design and delivery does not account for the distribution of diverse characteristics that online students bring to the learning situation. Typically, online programs are designed to deliver a fixed amount of learning content in a predetermined amount of time. The result? Slower learners are forced to advance with the syllabus before mastering integral stages of content, thereby creating a deficit of skills and knowledge necessary to succeed at future developmental stages, and thus increasing the likelihood they will drop out. Conversely, advanced learners become bored and frustrated; their initial excitement and their motivation to expand and innovate based on what they have learned is quickly squandered, and their likelihood to continue steadily decreases.

If educational technology is to live up to the promise of enhancing online learning outcomes, a different paradigm for instructional design and delivery of content is needed. Inspired by the six assumptions of Knowles' Andragogical Model, practical applications, guidelines and techniques for incorporating adult learning principles into the structure, delivery, and mentoring of online courses will be outlined below. The relative merits of each principle will be clearly stated, along with a discussion of how to apply them in an online learning environment.

Learner's Need to Know

The assumption that adults are driven by a *need to know* before they participate in a learning event is the foremost premise that distinguishes the mature learner. Unlike the pedagogical assumption that young learners' *need to know* is driven by what they must learn to pass a test or achieve an academic accolade, andragogy assumes that the adult learners' *need to know* is prompted by a desire to apply learning to some aspect of their professional or personal lives. The positive implication of this for online learning is that adult learners are more likely to invest energy into exploring the benefits of learning, and this could overcome an initial sense of isolation that is often associated with distance learning. Conversely, a strong impetus to immediately access the benefits derived from their (often newly) undertaken online learning and a fervent desire to quickly apply these benefits toward career advancement and other personal goals typically characterize adult online learners. Simply put, they want 'it', and they want 'it' NOW. They lack younger learners' patience/docility, and need to have reasons set out for them that explain why the path toward their desired learning goals might be longer and more arduous than expected. Helping the learner become aware of their *need to know*—and what they do not know is one approach that can facilitate more positive adult online educational engagement. Implicit in this proposition is the idea that it is imperative that instructional design aligns learning objectives with the learner's real-world needs.

Raising learner awareness of the *need to know* also has implications for the way the instructional design of online activities can assist facilitators to foster that awareness. Knowles, Holton, and Swanson (2014) suggest the design of simulated or real activities that nurture opportunities to discover such awareness. "Personal appraisal systems, job rotation, exposure to role models, and diagnostic performance assessments" (p. 43) are examples of activities that could make learners aware of what they know now and what they need to learn to narrow any gaps in knowledge or skills. A combination of the aforementioned activities could help the learner draw more meaningful connections. For example, teacher training for 21st-century online instruction skills could involve job rotation, whereby an instructor could experience the role of instructional designer. This could contain a self-assessment component, using an instrument such as the Core Competency Diagnostic and Planning Guide (see Knowles, Holton, & Swanson, 2014), and would help them understand what competencies are involved in performing that role. In other words, they would actively learn what they need to know in the context where access to such information has its greatest salience.

Raising learner awareness of their need to know also has implications for the way online tools and resources are used. Using online digital tools to facilitate robust student discussions could induce adult learners to identify awareness of their *need to know*. Sharing this awareness through dialogue could strengthen community engagement and be a source of solidarity. Research shows that online discussion between peers positively affects learning

when learners provide feedback, share new ideas, answer questions, or respond to general issues about a course of study (Al Zumor, Al Refaai, Eddin, & Al-Rahman, 2013; Arenas, 2015). Thoughtful consideration should be given to how digital tools can be used to apply this principle in meaningful discussions online. Such discussions are classified into two categories: synchronous, and asynchronous.

Synchronous discussions are live, ongoing exchanges that require the participants to be together at the same time. Asynchronous discussions are those that are also ongoing but do not require people to be scheduled to meet. Each approach has its advantages and disadvantages. For example, for an asynchronous approach, a web forum (e.g. using Google Groups) could be created where the participants could engage in a discussion related to the role mentioned above as a diagnostic performance assessment. The web forum could be extended to a Q&A forum, providing more flexibility in user interactivity. A synchronous approach might use video chat (e.g. Skype or Google Hangouts) to arrange a real-time discussion between participants. It could be scheduled as a one-time event where the learners take turns sharing their reactions to an activity. The facilitator could decide in advance how long the discussion would be, and the learners could prepare feedback to questions. Whatever tool or approach an instructor decides to integrate, raising learner awareness at the outset, could be instrumental in establishing commitment and active participation that could positively impact both the community, and the individual.

Self-Concept of the Learner

As an individual biologically matures, the psychological process of gaining self-concept begins in adolescence and develops rapidly through young adulthood. Integral to self-concept are the needs to be accountable for one's decisions and one's direction in life (Knowles et al., 2014). Concomitant with this self-directed development is the psychological need for it to be recognized by others. The adult learner's self-concept is expressed by a desire to be treated by peers as a person capable of directing their behavior, beliefs, and values. Within any social context, failure by others to respect this ability can result in resistance. Adult learners may resist a learning event if they feel instruction is being promoted at the expense of their need to be treated with respect. Participation in training requires a certain degree of dependency whereby a learner is admitting to some level of vulnerability or inability to fully self-direct. This learner-as-dependent feeling can have negative impacts for an online course, especially if the facilitator is slow to clearly establish an atmosphere of mutual respect. It is important, therefore, that the learning environment maintains a methodology wherein adult learners retain a sense that they are respected for their efforts throughout the learning process, and that their efforts are at least partly self-directed.

The challenge for teaching adult learners online is to create a learning environment that nurtures the growth of self-concept. It is sometimes difficult to reconcile an adult learner's need for control and respect all the while filling gaps in their knowledge as professionals. The answer to the pedagogical approach to training might be a transmissive model of instruction (i.e. teacher transmits knowledge that students receive). Research advocates raising instructor awareness of teaching style as a way to resolve this dilemma (Knowles et al., 2014; Liu, Qiao, & Liu, 2006). To measure instructor deployment of andragogical principles, Suanmali (1981) developed the Andragogy in Practice Inventory (API). The API was designed to measure an instructor's acceptance and agreement with the assumptions that underlie the andragogical theoretical framework. The impact of raising

instructor awareness with the API assisted learners to define, plan, and evaluate their learning. It also reinforced their self-concepts as learners (Suanmali, 1981, p. 327). Furthermore, it resulted in:

- a decrease in learners' dependency;
- improved procedures to help learners use learning resources; and
- learners defining their own learning needs.

Similar to Suanmali's API is the Principles of Adult Learning Scale (PALS) developed by Conti (1991, as cited in Liu, Qiao, & Liu, 2006). Although it was not designed for evaluating the implementation of principles specific to andragogy, it remains one of the few scales that accounts for the development of self-concept. In constructing the PALS tool, Conti was more concerned with assessing a learner-centered teaching style. Among the seven factors of PALS, climate building and participation in the learning process complement the andragogical assumption of self-concept. A practical reason for including Conti's interpretation of self-concept is that it engenders instruction that:

- encourages dialogue between the instructor and the learners.
- facilitates learner exploration of self-concept.
- supports learners to identify problems they wish to include as topics covered (Conti, 1991, as cited in Knowles et al., 2014, p. 328).

In short, the elements required for the principles of self-concept to be manifested suggest a change in the role of the instructor; one that defines an instructor more as a facilitator of needs than as merely a transmitter of knowledge.

Prior Experience of the Learner

Perhaps the strongest incentive to incorporate adult learning theory is acknowledgement of an adult learner's previous experience. Years before adult education became a recognized field of inquiry, Lindeman (a Dewey proselyte and pioneer of adult education) endorsed the view of adult experience as a teaching resource that would set the stage for integrating prior experience as one of the most important assumptions held in andragogy today. Lindeman (1926) wrote:

> The resource of highest value in adult education is the learner's experience. If education is life, then life is also education. Too much of learning consists of vicarious [sic] substitution of someone else's experience and knowledge...In teaching children it may be necessary to anticipate objective experience by uses of imagination but adult experience is already there waiting to be appropriated. Experience is the adult learner's living textbook. (p. 9)

The contrast between pedagogy and andragogy regarding experience is evident; it would be remiss for an instructor of adult learners to *not* integrate the learners' previous experience into the learning event. In proposing a methodology for teaching adults, Lindeman (1926) went so far as to suggest that analysis of adult experience should serve as the core of that approach.

According to Knowles et al. (2014), the domain of previous experience has important implications for instructional design and teaching methodology. The various effects of adult experience on instruction are that it:

- creates a wider range of individual differences;
- provides rich resources for learning;
- creates biases that can inhibit new learning; and
- provides grounding for adults' self-identity (p. 175).

The points outlined above may partly explain why a one-size-fits-all approach to instructional design may result in resistance. This means the whole-group teaching approach, especially in an online setting, may not be sufficient in and of itself. Accounting for adult learners' broad range of experiences should entail the incorporation of small group and one-to-one mentoring sessions.

Schön (1987) proposed the notion of *reflection-in-action* as a practice by which a learner can make the necessary changes to existing ways of thinking to create new cognitive structures (or what he calls schema). Reflection on the process of learning creates an opportunity for the learner to combine previous experience with new learning to update or develop new schema. Although learning might happen regardless of whether a learner engages in reflection, the practice of consciously recognizing the filter of previous schema can reinforce the retention of new cognitive structures. Also, learner reflection may account for why learning did *not* happen.

Sharing this *reflection-in-action* process between peers through an online blog can be an ideal way to amplify the benefits of this practice for all the stakeholders. Using blogs as online journals where everyone has a chance to read each other's entries is likely to increase engagement and result in an enriching learning experience. Learning about the variety of experiences that learners have could result in the development of mutual respect. It is also possible that some learners may identify with others' experiences. Similar or not, learning about others' learning processes through blogging maximizes opportunities for accelerated learning on an exponential level. Another resource that could be used to share each other's experiences and also serve as a model for collaboration is a shared Google Slide project. Each learner could be assigned a slide. On each slide they could include their strengths and needs, and areas of interests. The learners could browse through the slides to learn about each other and use this resource as a class profile reference for the future.

Motivation to Learn

Adult learners tend to be more motivated to learn if they perceive that instruction will lead to some form of internal reward. External rewards such as social recognition or work-related benefits are secondary to the more powerful motivation associated with internal inducements (Knowles et al., 2014). The first andragogical assumption of the need to know is closely linked to motivation. In addition to wanting to know why they are being asked to learn something, adult learners' motivation is driven by a need to express a choice about what it is they are learning. This sense of free will to choose content is an internal motivator that is responsible for ensuring quality in any given experience. If an adult learner does not perceive that a learning event will add value or satisfaction, they are unlikely to be motivated to commit energy toward its fulfillment.

Adult instructors who are attuned to the role of motivation in adult learners can leverage it to their advantage and achieve results where their learners show greater commitment, perseverance, and ultimately attainment. In *Enhancing Adult Motivation*, Wlodowski (1985) suggests criteria for instructor behaviors that are conducive to facilitating a highly motivating adult learning environment. The model includes expertise, empathy, enthusiasm, and clarity. The specific behavioral characteristics underlying each trait are described as follows:

1. Expertise: the power of knowledge and preparation. The instructor:
   - knows something beneficial to adults;
   - knows it well; and
   - is prepared to convey it through the instructional process.
2. Empathy: the power of understanding and consideration. The instructor:
   - has a realistic understanding of the learner's needs and expectations;
   - has adapted instruction to the learner's level of experience and skill development; and
   - continuously considers learner's perspectives.
3. Enthusiasm: the power of commitment and animation. The instructor:
   - cares about and values what is being taught; and
   - expresses commitment with appropriate degrees of emotion, animation, and energy.
4. Clarity: the power of language and organization. The instructor:
   - can be understood and followed by most learners; and
   - provides for learners a way to comprehend what has been taught if it is not clear in the initial presentation (p. 184).

As admirable as Wlodowski's model above is, a cursory look at the characteristics outlined therein makes it clear that it was designed for face-to-face instruction in mind. Empathy and enthusiasm are not affective traits that are quickly associated with online learning—especially, not with an asynchronous mode of communication. Though not easily replicable for online instruction, many of Wlodowski's criteria can be adapted through innovative applications of technological resources.

To adapt instruction to the learner's level of experience and skill development calls for differentiated instruction. Project-based learning is a highly personalized approach to learning, where small groups of learners select problems to research and for which they develop solutions. An instructor could set up a peer group learning management system for the purpose of distributing materials and instruction, using Google Classroom, for example. This method will allow an instructor to further analyze the performance of each participant and respond to the needs of each accordingly. Response to individual students could be in the form of a flipped instruction where a host of resources could be made available for the learner to pick and choose to self-direct learning. Of course, one-to-one synchronous communication through video or audio chat can also be arranged. In so doing, the face-to-face connection becomes an excellent opportunity for the instructor to express empathy and enthusiasm. Modeling the use of Google Classroom in this way could also serve as a good example to inspire learners to use the same technological resources in their own classrooms.

Readiness to Learn

Under the pedagogical framework, the concept of *readiness to learn* is defined as learners doing what is necessary to meet the passing criteria as determined by the teacher and the course syllabus. For andragogy, on the other hand, *readiness to learn* is largely determined by the learner; the main criterion is knowing how to adapt learning to real-world situations effectively. Although this seems similar to the assumption of *need to know* described earlier, the developmental aspect of *readiness* distinguishes it, and merits closer consideration. For instance, university freshmen may not be ready to appreciate the importance of time management and punctuality fully, but when they enter the ranks of the working populace, they have to be ready. Similarly, online instructors may not be prepared to become instructional designers until after they have mastered being an online facilitator. *Readiness to learn* is about matching instruction with the developmental stage of the learner.

It should be noted, however, that this is not a matter of reducing the authority of a pedagog to that of an andragog, and relinquishing complete control to the adult learner. Rather, determining readiness requires a coalition of efforts between the instructor and the adult learner. Previous experience of the learner naturally comes into play. It is entirely possible that the best methodological approach could be a teacher-fronted pedagogy if the learner has little to no previous experience in a particular learning content. For example, if a student is learning high-level computer programming language for the first time at the age of 60, there would be no development stage upon which to build. Therefore, an expert-fronted approach may be worth implementing at the start of the learning cycle.

Conversely, a lack of *readiness to learn* can be exacerbated by the situational context of online learning. In the late 80s, Pratt (1988) recognized that previous experience is highly situational; a learner may be confident with content given a *specific situational context,* but not in others. Within a new learning environment, such as an online learning context, the same learner may not be as confident with similar content. This view is supported by a recent study by Sun (2016) who writes: "If many users are hesitant to adopt an ICT (instructional computer technology) approach because it evokes some negative experiences compared with a traditional method, developers need to improve application design and/or enhance user training" (p. 292). In Sun's (2016) research it was found that a tool-mediated activity required a certain measure of competency with the tool itself; if the learner is not prepared to use the tool (e.g. online technologies), he/she would most likely not be ready for the learning endeavor.

Readiness to learn thus has two implications for online instruction: one requires instructors to find out how much the learners already know about the content and the other requires a tool-readiness assessment. It would be a mistake to use a one-size-fits-all, whole-task approach with adult learners who have a large, differentiated range of experiences with online ICT. Sun (2016) suggests dividing a whole online activity into smaller tasks as a step-by-step procedure that can assist inexperienced/low-experience learners in becoming accustomed to new technologies. As confidence grows with tool-mediation, so, too, will the ability to adapt new learning content using existing cognitive structures. One idea is to identify the more technologically proficient students through a survey (e.g. such as using Google Forms). Once identified, an instructor could create small groups wherein a low-tech-experienced learner is in a group with a more proficient user. Tasks using technology with which the more tech-abled users are familiar could be used for a collaborative assignment. The combination of mentoring and teaching presence can mitigate the anxiety associated with

the transition to using new tools and also create opportunities for building a productive online community.

Orientation to Learning

Subject-matter content forms the basis of pedagogical learning; an adult learner's orientation to learning is life-centered. Instead of dividing learning into subjects, it should be divided into real-world situations (Knowles et al., 2014). With this orientation, the learner is motivated to acquire abilities, attitudes, and principles that are grounded in an everyday-world application. Learning that is most likely to resonate with adult learners is that which encourages them to combine their work-based experiences with new techniques. The role of instructional design has less to do with disseminating new content than it has to do with constructing activities that allow the learner to modify old ways of doing things to accomplish a novel task. This learning attitude corresponds with Vroom's (1995) model of expectancy theory—a model developed from research on workplace behavior, re-training, and job satisfaction. For Vroom, an adult learner orientated towards learning for job-related rewards will respond to the following three factors of the expectancy model:

- Valence: The value a person places on the outcome of learning.
- Instrumentality: The probability that the valued outcomes will be received given that certain outcomes are achieved.
- Expectancy: The belief that effort will lead to outcome rewards
(Vroom, 1995, p. 184).

The learning implications of the expectancy model are that learners are motivated to commit effort to learning if they believe it will result in rewarding outcomes. The learning also has to be useful for solving real-world problems, and that usefulness has to be important in their lives.

Neuroscience offers valuable insights into explaining why adult learners are drawn to a problem-solving orientation to learning. According to Tokuhama-Espinosa (2011), the part of the brain that controls for problem-solving ability is more developed in adults. As a result, their brains are better at responding to problem-solving situations that connect experiential learning with new knowledge. While this may explain in part the inability for their younger counterparts to make those kinds of connections by their own volition, in any case adult learners will be more resourceful when applying new information towards practical outcomes.

The practical application of adult learners' orientation for learning is to design and facilitate activities that are task—or problem-centered. As mentioned earlier, problem-based learning (PBL) projects are ideal for this purpose. A PBL activity is designed to encourage learners to collaborate in groups, to find a problem relevant to their real-world experiences, and to devise original solutions that have not been tried before. According to the Buck Institute (2017), the advantage of pairing technology with PBL is that it can connect learners with resources, experts, and audiences around the world. Learners can also interact with other organizations, and work-related situations while contributing new solutions or ideas to shared problems. Working in groups, learners can create their websites (e.g. using Google Sites) where they document their learning like an e-portfolio. A home page could identify the problem and purpose of the site. Other pages could be dedicated toward becoming a resource for the community as a whole. In short, a PBL project can be the ideal approach to encourage

adult learners to connect their previous experiential learning with real-world situations. By facilitating research and exploration, online instructors can leverage orientation to learning such that it is more meaningful and practical for the learners' real-world needs.

Conclusion

Online learning has become one of the most popular educational alternatives to meet the demands of today's global knowledge economy. Institutions of higher learning continue to make vast investments in programs that allow people to update their skills, yet very little attention has been given to how these skills are taught within this relatively new environment. Improved educational technologies and methods herald the onset of an age where the potential of online learning is finally realized. However, a different paradigm for instructional design and delivery of content is needed— one that combats its greatest obstacles as mentioned above. Perhaps an outdated instructional model is responsible for the inordinately high attrition rates for online education—one rooted in a one-size-fits-all industrial mindset. The advent of online content delivery has quickened its demise and, especially because of drastically inflated attrition figures, emphasized that it is no longer a viable approach. To account for the diversity of learning needs and learners' experiences, this paper proposed the application of adult learning principles to the online learning context with practical suggestions for it application. We hope this paper will promote inquiries into what yet remains a dearth of research about the benefits of applying the assumptions of andragogy to the online learning context. By combining a sound teaching methodology with innovative use of e-tools, it is hoped that some of the ideas contained in this paper will not only reverse the tide of online attrition but also guide instructors towards the kind of teaching that instills in learners a sense of responsibility for their own education, and allows them to assume a more active role in maximizing its potential.

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