

Adult Learning Theories and their Application in Selecting the Functionality of Synchronous Learning Tools

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The study discusses some major adult learning theories and practices and their application to the functionality of synchronous learning tools in order to better support the needs and satisfaction of stakeholders while interacting in a web-based environment. It examines how best to provide guidelines for them in choosing the synchronous learning tools. The paper will also consider the need for facilitators to focus on adult learning practices as they making use of synchronous learning tools.

Keywords: Adult learning, Synchronous learning tools, Web-based learning

Statement of the Problem

Web based learning is one of the fastest, alternative and complementary delivery methods for adult learners in workplace learning. For example, web based courses and learning materials are being designed for all levels and for various groups of adult learners at various organization. As a consequence, many adults are acquiring web-based knowledge, tools and competence. More recently, there has been a significant relationship between communities of practice and technology and “technology requires accumulative collective learning that needs to be tied to social practices” (Langer, 2004, p.80). As a result, interaction and interactivity among individuals and groups plays an important role in the learning process.

When the challenge to adopt web-based learning face adult educators, it is easy to loose sight of the importance of using the principles of adult learning in facilitating interaction among adults. Thus, good interaction in web-based learning requires adult to understand the adult learning practices in different stages of interaction. Even if individuals in teams interact with each other using adult learning principles, they may not be aware of which synchronous learning tools to be selected during different stages of interaction. Should certain tools be used during all stages of interaction or certain tools be used more often in specific stage of interaction?

In this study, I attempt to show how adult-learning theories can be used in different stages of interaction in order to help them select the necessary synchronous learning tools. It is my belief that if adults are able to choose the appropriate synchronous learning tools at different levels of interaction using adult learning principles, they are able to learn effectively. The organization chosen for this research is a non-profit organization, where teamwork and capacity building are taking place as a means for continuous learning. While there have been several researches done on web based-learning, there haven't been many studies done on connecting synchronous web-based learning to interaction and adult learning principles.

Synchronous web based learning utilizes internet technology with a live instructor and moderator who facilitates the live presentation of information and the interaction of learners who are remotely located. Its delivery methods include chat-room, e-classrooms and audio/video web conferencing. Organizations may choose various synchronous learning tools to help fulfill their needs. Some of the tools are real time or online chats, yes/no polling, instant surveys, hand raising, application sharing, and whiteboard. While synchronous tools help adults to learn, the focus should not be mainly about the technologies of learning nor about the instructor, but about the adult learners. Synchronous learning that is designed for learners without clear understanding of their needs or how they learn will lead to less productive outcomes for individuals and organizations.

Purpose of the Study and Research Questions

The purpose of this study is (1) to discuss some major adult learning theories and practice and their connection to different stages of interaction; and (2) to identify the interconnectedness between adult learning practices, interaction and web based synchronous learning tools. Based on the theoretical frameworks discussed in the subsequent section of this paper, the research questions are: (1) What are the various adult learning practices needed in different stages of interaction? (2) What are the web-based synchronous learning tools that can be selected at different stages of interaction?

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(3) What are the interconnectedness between adult learning practices, interactions and web-based synchronous learning tools?

Theoretical Framework

Multi-media Communication Construct

The process of communication is essential to web-based synchronous learning. A theory that is very important to this type of instruction is that of interactivity. It should be noted that some literature distinguishes between interactivity and interaction. Interaction is defined as the interplay and exchange in which individuals and group influence each other, while interactivity seems to have emerged from “description of technological capability for establishing connection from point-to-point in real-time” (Wagner, 1997). Thus, interaction focuses on people’s behavior, while interactivity focuses on characteristics of the technical system.

Moore (1993) identified three types of interaction: learner-content, learner-instructor and learner-learner. Kuboni (1997) added to that three holistic constructs: social interaction, learner-media interaction and learning-knowledge interaction. Social interaction recognizes that all interpersonal interaction involves communication (both verbal and non-verbal) between and among stakeholders. These communications take place in some social context and behavior change takes place in the process of communication. Learner-media interaction is based on the premise that in teaching and learning, media should be considered in terms of their capability to support learning rather than as vehicle for transmission of content. The interaction between the learner and the technology that supports social interaction needs to be paid attention. Learner-knowledge interaction relates to how humans construct knowledge rather than acquire it, so that meaning making is the ultimate goal of the learning process.

Adult Learning Theories

Adult learning theory helps us to understand the needs of people as they learn and make meaning. All levels of learners who engage in the practice of learning have certain unspoken (tacit) beliefs about life and how to apply them in life. In a non-profit organization, learners create conversational spaces with all generations, races, ethnicities, economic levels and genders so that they enrich one another through their varied experiences and locate the common qualities and aspirations that unite them. Therefore, two key purposes of interaction are:

- (i) Adults are more than cognitive being where they have feelings, awareness and creativity.
- (ii) Adults learn not for the sake of learning but for the purpose of meaning-making, understanding and transforming.

Since there are several adult-learning theories, for the purpose of this paper, the author would like to focus on three theories: Knowles adult learning principles, Mezirow’s transformative learning and Brookfield’s adult learning components. The reasons for choosing these theories are:

- (i) To incorporate and understand adult learning characteristics in interaction.
- (ii) To encourage self-reflection at various levels of interaction.
- (iii) To understand how participants experience learning and engage in dialogue.

First among these theorists is Malcolm Knowles (1980) whose andragogy is one of the best known of the adult learning theories. Andragogy is defined as “the art and science of helping adults learn” (Knowles et al, 1998). His theory provides the following six learner-centered guidelines for the educators of adults:

- Adults must recognize the necessity of learning something before undertaking to learn it;
- Adults recognize the responsible for their own decision for their own lives;
- Adults enter an educational experience with more and different experience than youths;
- Adults are more eager to learn things they must know and apply in order to cope effectively with the real-life situation;
- Adults are life-centered (or task-centered or problem-centered) in their orientation to learning; and
- While adults are responsive to some external motivation (ie. better job, higher salaries, promotions), the most potent motivations are internal pressures (the desire for increased job satisfaction, self-esteem, quality of life).

Knowles theory is applicable to web-based synchronous learning due to its relevance in understanding learners’ characteristics and needs in interaction. Adult learners who participate in synchronous learning such as chats, white board, and application-sharing features create a safe and respectful environment that is learner centered.

Jack Mezirow (1990) developed the theory of transformative learning that explains the impact of critical reflection on adult learners. Transformative learning is defined as a process by which we question our taken for granted frames of reference in an effort to make them more integrative, so that they become more justified in guiding our action. The goal of transformative learning is to understand why we see the world the way we do and to

shake off the constraints of limiting perspectives we carry from our prior experience. Interaction in synchronous learning would require participants to reflect about how this learning is different with regard to their interactions with other learners, with media and with the content. In addition, it also helps participants to reflect about how their meaning schemes and perspectives are affecting themselves in the interaction process.

Stephen Brookfield's two components of adult learning help participants to interact in synchronous learning. The first, explored the adult learning process of experiential learning where adults' teaching should be based on adults experiences. According to Brookfield (1995), "knowing something of how students experience learning helps us build convincing connections between what we want them to do and their own concerns and expectation." (p.95). Brookfield (1999) also focused on dialogic methods of instruction such as circles of voices and circular response are some of the examples.

From the work of Knowles, Mezirow and Brookfield, we can isolate principles relevant to instruction in a web-based synchronous environment. These adult learning theories are derived from the belief that adults are unique, and that they hold both tacit and explicit beliefs about life and work from which to draw meaning as they incorporate new information and learning. In applying these ideas to the functionality of synchronous learning tools, it can be inferred that adults have the following traits that should be considered in selecting these technologies:

- A store of real-life experiences
- An inclination to problem-centered learning
- Opportunities for continuous learning
- Operating from various learning styles
- Desire for meaningful learning
- Potential for self-directed learning
- Responsibilities beyond the training situations

Types of Learning

The intention, to increase the knowledge and skills of adults through participation in a web-based event, suggests that there are related outcomes desired. These outcomes are referred to as types of learning. Understanding these categories is vital in facilitating stakeholders to utilize synchronous learning towards the desired impact on the participants. Bloom (1956) identified three types of learning. These are noted as follows:

- (i) Cognitive (knowledge) learning includes the ability to discern concepts and rules. For example, the goal of managing synchronous chats as well as the content during a web-based conference. This learning is best suited to delivery through web-based synchronous learning tools because they communicate to the learner using language, texts, numbers, symbols etc.
- (ii) Psychomotor or kinesthetic (skills) learning includes translation of mental plans into physical action. For instance, the goal of using shared whiteboards and chat tools simultaneously. Synchronous learning applications in a web environment can support this type of learning by providing verbal directions; providing and reinforcing practice for mastering using keyboard, mouse, audios etc.
- (iii) Affective learning implies behavior based on an underlying attitude or belief. For example, the goal of proper way of interaction in the synchronous chat by using tools such as hand raising, instant survey, yes/no poll, etc. These tools reinforce proper behavior and provide verbal guidance in synchronous learning.

Methodology

Sample

The data were collected between June and August 2004. Seven respondents from a non-profit organization were interviewed about the synchronous learning events. They had participated, facilitated or coordinated such events. Some of them hold leadership positions and are knowledgeable about the synchronous learning processes, while the others had facilitated and coordinated several challenging synchronous learning events in the organization.

Methods

The research design of this study includes interviews, observation and extant data analysis. Since synchronous web-based learning has only been recently launched in the organization, the people interviewed were very important resource persons for feedback. The information obtained from the interviews was important because they correlate with how to apply adult learning principles to select synchronous learning tools at different stages of interaction. A list of questions interviewed is attached in appendix A. However, several portions of interviews were self-administered to facilitate the collection of ad-hoc information and are not listed in the appendix.

Observation of the synchronous learning was also done during a specific event. Extant data analysis was also used to examine the outcome and accomplishment of previous synchronous learning events. Content analysis was also carried out in order to identify the functionality of mass-market web based synchronous learning tools. All data collected in this study were qualitative in nature.

Results

The interviews, observation and extant data analysis demonstrated the importance of applying adult learning practices in selecting synchronous learning tools. The following results represent selected quotes from the respondents categorized according three levels of interaction.

Social Interaction

- “Understand learners’ needs are crucial.”
- “Participants should use the chat tools very often to interact with each other”.
- “Some synchronous learning events are effective when there are real time video”
- “Participants and facilitators should be made aware about different styles and capabilities of online learning”.

Learner-Media Interaction

- “Allow participants some time to familiarize with white board”.
- “Understanding participants pace is essential in coordinating online learning”
- “There should be both moderators and producers in a synchronous learning event.”
- “Participants should be prepared and informed on how to use different tools in online learning”.

Learner-Knowledge Interaction

- “Stopping and doing application journal for participants is essential.”
- “Participants should be allowed to experiment tools such as white board and application sharing in interaction.”
- “Participants previous experience should be valued by using application sharing tools.”
- “Symbols available in tools such as survey polls or Q&A makes learning more interactive.

The findings show that stakeholders who utilize the synchronous learning tools in an environment facilitated employing adult learning principles are more satisfied and better able to transfer learning to the workplace.

Conclusions

It is concluded that in order to create learners’ satisfaction and enhance their performance in interaction in a synchronous learning event, adult educators need to be attuned to adult learners needs, the way learners make meaning, and their ability to create learning from experience. It was determined that successful web-based synchronous learning that supports adult learners’ needs would provide:

- Interactive synchronous learning attuned to learners’ processes, needs and styles rather than as vehicle that over-emphasize content development or technical processes.
- Conducive environment for learning, i.e. safe and respectful space based on stated expectations for participation.
- Opportunities for stakeholders to construct knowledge rather than acquire it, so that meaning making is the ultimate goal of the learning process.

Significance of the Study

This study has linked the importance of both theoretical and practical aspects. It linked the interconnectedness between adult learning practices and interactions in selecting appropriate web-based synchronous learning tools in a web-based learning environment. These relationships are shown in table 1.

Table 1: The interconnectedness between adult learning practices, interactions and web-based synchronous learning tools.

INTERACTION	ADULT LEARNING PRACTICES	SYNCHRONOUS LEARNING TOOLS
Social Interaction	Create a Safe and Respectful Environment	Chat, Q/A sessions, survey polls and evaluation, security features
Learner-media interaction	Involve Stakeholders in planning and evaluation	Evaluation, Q/A sessions, survey/polls, chat, application sharing, membership directory, project management tools
	Develop Problem-Centered Program	Application sharing, white board
	Understand Stakeholders' Learning Style	Slides, white board, chat, audio, web-based video conferencing, voice over IP
Learner-knowledge interaction	Learners' Previous Experiences in relating New Knowledge	Application sharing
	Making Learning Meaningful	Chat, application sharing
	Encourage Exploration, Reflection and Transformation	Web safaris, white board
	Nurture Self-directed Learning	Web safaris and all other features

The results of the study shows that adult learning practices should be taken into consideration by facilitators when organizing web-based synchronous learning events. For the purpose of future research, the author feels more research should be done in exploring more creative and user-friendly synchronous web-based learning tools that enhances adult learning practices. While the issue of technology and synchronous web-based learning tools are important, the focus should be about the adult learners and how to create varieties of interaction based on adult learning principles. Research should also be done on how to promote reflection through web-based synchronous learning especially about how one's learning can be different with regard to their interactions with other learners, with media and with the content. In this regard, one areas of research is how can transformative learning be facilitated using web-based synchronous learning tools. The author also feels that more research should be done on how to enhance dialogue and discussion through online in a more creative, fun and challenging ways.

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Appendix A: Interview Questions

Technology Requirement

- *How technology worked during the event?*
- *Was it successful, why? If not, why?*
- *What are the components of technology that inhibits synchronous learning?*
- *What and how do participants use synchronous learning tools at different stages of interaction?*
- *What are the tools used frequently throughout the events?*

Facilitation Process

- *Was it easy to interact?*
- *Was the information obtained during the event comprehensible?*
- *How do you manage learners with different learning styles and needs?*
- *How do you manage pace in synchronous learning?*
- *How do you manage people with strong reaction?*
- *What do you do to enable them to reflect?*
- *What specific activities did you use to help participants to learn successfully online learning?*
- *What mind-set is important for facilitators in help adults learn in synchronous learning events?*
- *What are the components that make synchronous learning successful for learners and for facilitators?*

Virtual Space

- *How easy was it to set up the space?*