

Effectiveness of Interaction in Learner Centered Paradigm in Online Education

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Abstract This article speaks to educators, program administrators and PhD Learners intending to teach. For three decades, critical reflection has been invoked as a good practice for adult education. This paper explores answers to “What is known about how adults learn and are motivated to participate in online learning to advance their career?” A review and analysis of the literature builds upon theories and scholarship that leads to recommending practitioner actions. The themes are: theories about ways of knowing, adult development, andragogy and learning theories. This paper shares my professional practice as a learning facilitator. In the context of exploring how to be effective in an online environment, this article puts into perspective the elements of critical thinking and provides a summary of results from Brookfield’s Critical Incident Questionnaire adapted as an end of course evaluation in open shared discussion. For context, this article references four lenses through which educators view their own practice. A habit of critical reflective is a necessity for online educators who are teaching skills and concepts to adult learners in the technology industry or those completing an academic degree.

Overview

The theme is “Here’s what is known about how adults learn and are motivated to participate in online learning to advance their career. If learning facilitators follow the tips suggested, they can make a difference in adults’ learning experiences.”

This paper evaluates theoretical sources written during paradigms of traditional teaching, and online learning. Guidance for interpreting the literature is direct experience in the technology industry experiencing both worst and best practices. Attention is given to the demographic of students earning degrees in Computer Information Systems or Information Technology Management. This analysis provides a context of relevance for selecting the most important theories, principles, and learning how the theories can be applied.

Theoretical Foundations - A Literature Review

This literature review is organized into three themes in order to build upon philosophical scholarship that leads to practitioner wisdom in applying the theories.

1. Integrating Ways of Knowing
2. Adult Development and Andragogy
3. Adult Learning Theories Analysis

Integrating Ways of Knowing

This theme synthesizes ideas about ways of knowing as we move into the digital age.

Story Telling and Narratives. When summarizing theories about Narrative Learning, Merriam, Caffarella, & Baumgartner (2007) recognized that narratives take many forms which can be understood as “storying the curriculum” (pp. 207-210). Scenarios provide a context of understanding, so that when a design for a solution is drafted, it reflects a clear understanding of the problem. Narratives help clarify a problem for which possible solutions are being analyzed which will impact business processes. Early in a life cycle, stories are useful for simplifying complex concepts.

Story-Centered Curriculum. Schank anchors his teaching in telling stories. Stories hold the interest of people especially when they provide meaningful insights. Scenarios help make the unknown lose its uncertainty and ambiguity. For a project life cycle, scenarios are stories about a situation that needs to be analyzed carefully without knowing all the facts. Situations that reveal business rules can better be understood when a narrative or a visual model is put together. This enables learners “to understand when, why, and how they should use target skills on the job” (Schank, 2008b, ¶1). Describing a formalized Story-Centered Curriculum (SCC), Schank integrated lessons in Java or Ecommerce along with dragon slaying saying that “SCC can be delivered entirely online, in person, or as a live/online combination” (Schank, 2008a, ¶4). Schank integrates “goal-based scenarios” that engage learners in defining “long-term objectives and day-to-day operations” and which deal with “scalability issues” (p. 8). Further, Schank guides on the ground, online or hybrid courses with a balance of face-to-face and web-based interactions to leverage the “best and brightest mentors” (p. 11). The visionary philosophy integrates well with an Eastern cultural way of working together within groups and adds value to teams that have cross cultural diversity.

Tip #1 – Become Story Centered

The Great Learning. Non-Western ways of thinking is familiar to members of an outsourced team. Merriam, Caffarella, & Baumgartner (2007) acknowledge *The Great Learning*, which described a holistic approach for adult learning, “a highly complex process, involving commitment, continuous effort” (p. 227) which is more relevant to spiritual development than to acquisition of technical skills. To create harmony and trust in virtual learning teams, an instructor should assume the role of facilitator or mentor by becoming a stakeholder in team successes. The non-western way of thinking contributes to effective online communications for diverse teams in peer-to-peer collaboration. The philosopher Confucius expressed the insight that “the cultivation of the person depends on the rectifying of the mind” (500 B.C.E) which can be understood as expressing meaning as reasoning that is integrated with observations. While the world is constantly changing, full of challenges and stress, we can recognize an essential knowing that our present reality as an experience of synergy or of disharmony. Stories bring teams together.

Visionary Performance Indicators. The *International Society for Technology in Education* has a voice in effective education in IT. For students who are good “digital citizens”, it is important to identify alternatives to support informed decisions and to apply “multiple processes and diverse perspectives to explore alternative solutions” (ISTE, 2007, ¶ 4). Building a scenario about the alternatives enlivens team brainstorming and brings out the wisdom of team-thinking. This means going beyond the minimum interpretation of assignments and digging deeper into research. For teachers who engage in growth and leadership, a goal is to demonstrate “a vision of technology infusion, participating in shared decision making and community building, and developing the leadership and technology skills” (ISTE, 2008, ¶ 5) in order to meet standards and performance indicators of the programs. A successful program is designed to cultivate *ways of knowing*. Enlightened higher education administrators provide visionary leadership which inspires and facilitates stakeholders toward a “shared vision of purposeful change that maximizes use of digital-age resources to meet and exceed learning goals, support effective instructional practice, and maximize performance of district and school leaders” (ISTE, 2009, ¶ 1). A positive influence of performance standards is best when it based on awareness of differences in learning styles.

Tip #2 Open evaluation of learning experience increases awareness and trust.

Experimental Learning Cycle. The theory of experiential learning (Kolb, 1984) has been often referenced as a framework for progress through a “four stage learning cycle”. The cycle starts with concrete experience leading to observation and reflection, which then leads to “abstract concept formation” (Kolb, Boyatzis, & Mainemeli, 2000 as cited in Moallem, 2008). As a practitioner, Moallem (2008) applies this framework to organizing multiple instructional activities: collaborative real-world lessons, reflective individual tasks, group discussion, and use a self-assessment instrument in a manner that enables students “to experience all four stages, while choosing to proceed with their own preferred style” (p. 224). Moallem discussed a version of Kolb’s framework as a consolidation combined with that of Solomon and Felder’s self-scored survey known as Index of Learning Styles Survey (2002, p. 224). In the nature of *story telling*, the instrument puts into perspective the students’ *way of knowing* by including an autobiographical narrative with demographic and background knowledge collected about each student. A cautionary note is “A student’s learning style profile provides an indication of possible strengths and possible tendencies or habits that might lead to difficulty in academic settings” (Solomon & Felder, 2002, ¶ 4). In a pre-release of his book, Chapter 4, *Sixteen Cognitive Processes that Underlie Learning*, Shank discusses experimentation, “Learning to analyze what has worked out and what has not and why is part of living a rational life” (2008, p. 64). Shank cautions that anonymous evaluations “are not by themselves a valid measure of teaching effectiveness”, meaning that when student critique of instructor’s performance are included in the evaluation process then they should “represent only one of many measures that are used” (p. 36). Educators often discuss the concept of learning from life lessons, both successes and failures. Conversational evaluation of learning experiences is enlightening when the dialog is shared in the open.

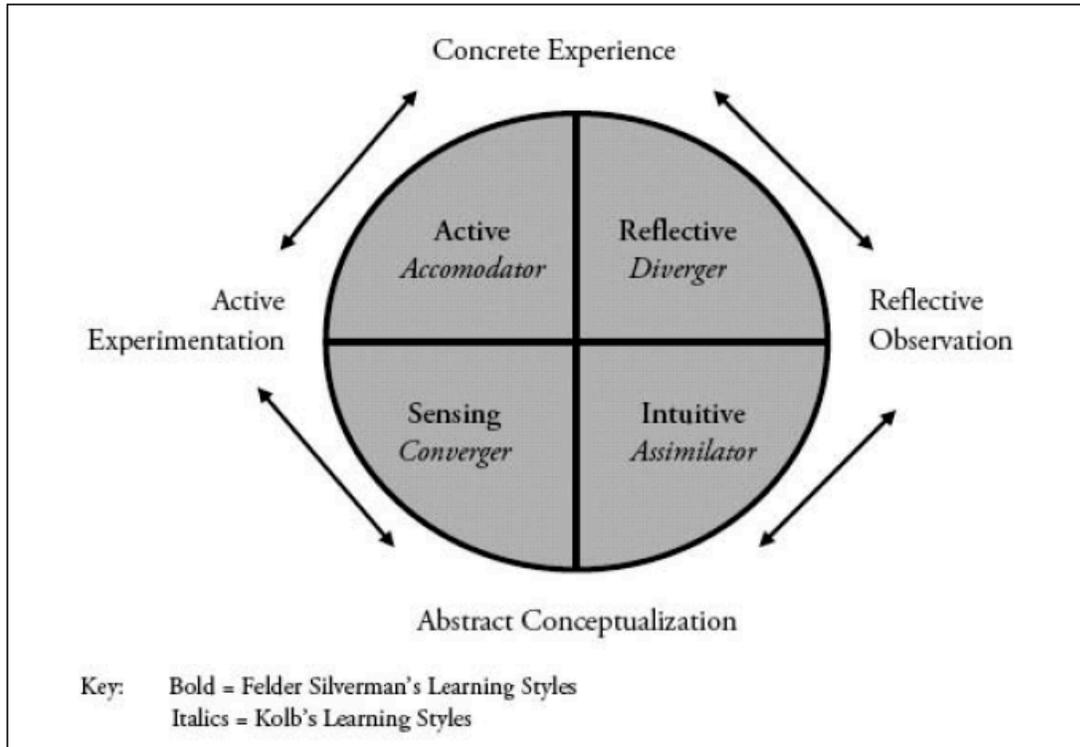


Figure 1 Experiential learning cycle and basic learning styles (Kolb, 1984)

Basic Learning Styles. Moallem found that “integrating student preferences for learning helps the course designers to improve interactivity and social presence in online learning environments” (2008, p. 240). His discussion references Kolb’s framework for basic learning styles integrated with that of Felder & Silverman’s (Figure 1).

Balanced Instruction. The goal of different learning styles is intended to suggest teaching each student exclusively in the manner that he or she prefers. In a context of the Myer-Briggs personality types, Felder (1996) concludes that the essence of balanced instruction is to “teach around the cycle,” making sure that every style is addressed to some extent by the instructor. If this approach is followed, then all students will receive learning that addresses their preferences in some moments and not being uncomfortable when they are confused. It also anticipates that learners can function in a less preferred mode, helping to develop skills in those modes. Understanding the different learning styles of students can put into perspectives the ways in which students respond to instruction or mentoring. This leads to applying the concept of andragogy compared to pedagogy.

Tip #3 Teach “Around the Circle”

Adult Development and Andragogy

This theme examines the published ideas of scholars and practitioners in the fields of education, adult learning and theories of andragogy compared to pedagogy.

Satisfying the Demand for Online Education. Availability of accurate market data for forecasting future demands for online education is unavailable but can be extrapolated from recently published statistics, so, the models assume a continuation of the status quo. The statistics in Table 1 indicate that the pace of connectivity will continue to escalate as use of video objects and social networking applications soak up the available broadband. Learning objects have taken on the attributes of eCommerce objects for distribution by way of Voice-over-IP. The statistics show an escalation of user growth and penetration.

Table 1 Internet Users & Population Statistics (*Miniwatts Marketing Group, 2009*).

INTERNET USERS AND POPULATION STATS FOR THE AMERICAS						
THE AMERICAS	Population (2009 Est.)	% Pop. of World	Internet Users, Latest Data	% Population (Penetration)	User Growth (2000-2009)	World % Users
All the Americas	927,494,299	13.7 %	431,939,479	46.6 %	242.4 %	24.9 %
Rest of the World	5,840,310,909	86.3 %	1,302,054,262	22.3 %	454.5 %	75.1 %
WORLD TOTAL	6,767,805,208	100.0 %	1,733,993,741	25.6 %	380.3 %	100.0 %

NOTES: (1) Internet Usage and Population Statistics for the Americas were updated for September 30, 2009. (2) Population numbers are based on data contained in the [US Census Bureau](#). (3) The most recent usage comes mainly from data published by [Nielsen Online](#), by [ITU](#), and other trustworthy local sources. (4) Data on this site may be cited, giving due credit and establishing an active link back to [Internet World Stats](#) © Copyright 2009, Miniwatts Marketing Group. All rights reserved.

Demographic of Online Learners. A professor of learning technology at Harvard described learners as “more sophisticated and the expectations for online professional development are rising” (Dede, 2009, p. 3). Students enrolled in on-line courses are often full time workers with an ambition to gain technical skills perceived to increase success in the information technology (IT) industry. Ambient Insight market research, which forecasts technology, content and services for buyers and vendors concerning products that are in decline or in demand in a vertical market. This summary defines the evidence-based research methodology which uses predictive analytics in an iterative process and defines the characteristic of self-paced e-Learning in terms of the pedagogical structure including catalog off-the-shelf packages, LMS, and content services (Adkins, 2008, pp. 6-9). Concerning the demographics of adult in higher education, Caudill (2007) indicates that the fastest growing category for online courses is career and technical education with demographics being age 23 for on-campus and age 37 for on-line (p. 188-189). Recognition of growth of access to online facilities has been proven.

Tip #4 Build upon a problem-oriented approach

Andragogy vs. Pedagogy. Green offered his comparison of Andragogy and Pedagogy (See Table 2) defined by the demands in 1999 for learning (within a balance of priorities), the role of the facilitator, relevant of life lessons, the reason to learn and the persistence of the lessons. Green’s tips are to watch for opportunities to use “problem oriented instruction” and to then use open ended questions to “bring out the vast experiences of adult learners” (1998, ¶ 5). Whereas Green’s perception may indicate

progress from early phases of schooling to a more mature state of mind, he points out an attitude about learning that is exhibited in very young students.

Andragogy is not just a matter of learners' chronologically. It refers to a maturity of attitude about learning. It is about setting personal objectives for acquiring and retaining learning that is relevant, meaningful and worthwhile. This involves the cognitive processes not just obtaining a college degree.

Table 2 Andragogy and Pedagogy (*italics show adaptations to Green's table, 1999*)

	Andragogy	Pedagogy
Demands of learning	Learners balance life responsibilities with <i>chosen</i> demands of learning.	Learners can devote more time to the demands of learning, responsibilities are <i>taken care of by someone else</i>
Role of instructor (<i>facilitator</i>)	Learners are autonomous and <i>self directed</i> . <i>Facilitators</i> guide the learners to their own knowledge rather than supplying them with facts.	Learners rely on the instructor to direct the learning. Fact based lecturing is often the mode of knowledge transmission by <i>passive listeners</i> .
Life experiences (<i>lessons</i>)	Learners <i>apply lessons from</i> life experiences, <i>recognizing the value in connecting</i> the learning to their own knowledge base,	Learners build a knowledge base and <i>are shown how</i> life experiences connect with the present learning.
Learning Purpose	Learners become goal oriented and <i>define the purpose served by new information</i>	Learners are <i>uncertain about reason for a particular course</i> . They <i>accept instructions to learn certain</i> information.
Learning Retention and Abortion	Learning is self-initiated, <i>self propelling and long term</i>	Learning is compulsory and tends to <i>be forgotten</i> shortly after instruction.

Cognitive Processes. Shank (2009) discusses mental processes that people learn to do well when they are guided by a balanced program of learning, framing his lessons around conscious or unconscious cognitive processes. Prediction about outcomes, making an objective judgment, building a model, experimentation based on success and failure, describing situations to identify faults and handling real time issues and case-based planning are conscious mental processes (Chapter 4). Processes include learning sequential step-by-step scenario thinking, improving an artistic assessment, making a value judgment. Tying in with technology careers, other cognitive processes include diagnosing complex situations for relevancy and causal explanation, mapping goals to case-based planning, detecting sequencing of events and reasoning, and further discussing external influences, team work, negotiating and goal prioritization. His work focuses on what it means to learn a mental process.

Tip #5 Encourage goal orientation and define purpose served by new information

Adult Learning Theories Analysis

Five Phase Model Applied. A cognitive five phase model consist of: 1) modeling, when an instructor verbally describes an activity, 2) approximating, when the learner is coached live during class and using media generated guidance, 3) fading, when the coach observes with interested detachment while teams work with less defined scenarios, 4) self-directed, when guidance is in response to requests, 5) generalizing. It is perceived that skills transfer to from school work places. (Merriam, Caffarella, & Baumgartner, 2007, p. 181). This model is essentially the life cycle of a project and represents a learning team that comes together, forms team for a specific short term purpose, brainstorms the problem and the possible solutions, performs the work, then after an assignment is submitted, acknowledges that it is complete. Adaptations to the original model are shown here in *italics*.

Table 3 Cognitive Apprenticeship Phases (*cited in Merriam et al. 2007, p. 182*).

Phase	Role of Model	Role of Model	Role of Learner	Key Concepts
1	Modeling	Real-life <i>tasks with explicit guidance using artifacts and lectures that explain “tricks of the trade”</i>	<i>Establish a mental model of real-life purpose for performing work, observe and listen proactively</i>	Articulation, domain specific heuristics, <i>pedagogy</i>
2	Approximating, <i>Scaffolding</i>	Coaching and providing <i>immediate feedback to learners</i>	<i>Perform the activities, deliver assignments, apply feedback, integrate individual results with those for the team, self monitoring and group correction</i>	Scaffolding, coaching, <i>andragogy, forming team roles and responsibilities & brainstorming</i>
3	Fading, observing and coaching	Delegating coaching to teams, lighten the <i>scaffolding, more dialog instead of lecture style instructions</i>	Working within virtual team, adopt the approximate model <i>into more specific mock-up of a solution that is more complex</i>	Collaboration, brainstorming & performing
4	Self-Directed Learning (<i>by individuals and teams</i>)	Provide assistance. <i>Encourage requests for further guidance based on direction already established independently</i>	<i>Adapt the group assignment using new research in a way that integrated it into the team final result</i>	<i>Learner-centered, virtual team collaboration, forming, storming, norming, performing and then adjourning.</i>
5	Generalizing, <i>contextuality</i>	<i>During an end-of-course evaluation (based on Brookfield’s CIQ), generalize what has been accomplished).</i>	<i>Conceive to future possibilities of SDLC options, critique the models, apply ideas to various scenarios that will go beyond the minimum</i>	<i>Assessing Adjourning</i>

In online programs, team members might find each other again in a next class for a next cycle of teaming up. The real lesson is about capability to join forces, synergize, and to communicate. This cycle is an opportunity for people with experience to provide scaffolding to others on the team who are new to a concept.

Cognitive Apprenticeship. This five phase model has found broad support in the literature about cognitive apprenticeship which applies to the sequence of lessons in this course. The pairing of people with broad experience with those who are new comers is a favored selection process for learning teams. The five phases are referenced in Table 3 using arguments that defend alternatives ways of designing and delivering online courses. The ideas about cognitive apprenticeship phases is a map to further discussion below, starting with a brief discussion of virtual learning environments, then assessments of learning experiences (not just for the outcome of group assignments), followed by theoretical foundation and application for self-directed and transformation learning.

Traditional Courseware. With Virtual Learning Environment (VLE) tools, one-way monological teaching is becoming superseded by interactive dialogical learning. Traditional courseware and online courses that are merely adapted to be delivered using VLE tools usually contain publisher prepared lectures using PowerPoint slides which illustrate content from the text book. This paradigm is a teacher-centric approach with students who attend and can be passive.

Scaffolding Concept Applied. The concept of scaffolding is promoted by educational practitioners (McKenzie, 1999; Misanchuk & Anderson, 2001; Hill, 2008; Dede, 2009). McKenzie uses the metaphor of surrounding a building with scaffolding to define the terms applied to education (1999, ¶ 6). The metaphor can be understood as a structure in which a building (or learners) are supported while they are being built (or learning). Applying the technique of scaffolding provides clear direction and reduces students' confusion, clarifies purpose, keeps students on task. It also clarifies expectations and incorporates assessment and feedback, points students to worthy sources, reduces uncertainty, surprise, and disappointment, delivers lessons efficiently and creates momentum. Likewise, Hill (2008) promotes training following "the principle of scaffolding" in which early lessons provides "step-by- step instructions and hints to learners, guaranteeing early positive experiences" (p. 123). This idea is a mindset anchored in temperament of a course facilitator. The idea can be encouraged by program directors and course designers. For professional development of course facilitators, Dede (2009) encourages focusing on training that "could really help build your teachers' capacity and invest in that systematically and deeply, rather than settling for tactical wins" (p. 5). Dede points out that "distributed learning is vastly different from what has traditionally been covered with copyright (books, articles) and brings with it several important areas that must be addressed to ensure its long-term viability and proliferation" (2009).

Tip #6 Build upon prior knowledge

Teacher as a Mediator. The paradigm shift is toward the teacher-as-a-mediator of community of learners. A virtual learning community culture is ideal for joint assignments which evaluate the process of team formation as well as create a high quality deliverable that is a result of inspiration and collaboration. This principle ties to *approximating* supported by the teacher providing *scaffolding* between his or her direct experience, the text book, and the students' level of knowledge. The responsibility is to provide scaffolding when it is necessary.

Mediator as Facilitator. A teacher who is a good communicator is also a facilitator of learning. By listening and answers questions, the role is expanded into participation instead of merely mediating the tasks, assessing results and monitoring progress. Misanchuk and Anderson (2001) provide background characteristics of a learning community and ways to use certain instructional strategies to work to move an entire classroom toward a community. They suggest ways to encourage interaction at three levels: communication, cooperation, and collaboration (p. 6) and ways the community contributes to deeper learning. Their study build a framework intersecting communication, cooperation and collaboration with attributes of learning, inquiry, decision-making, goals, accountability, and learning relationship. This maps to a transition from observing to coaching of project teams, while still “scaffolding activities rooted in the communication formats of communication, cooperation, and collaboration” (Misanchuk et al., 2001, Conclusion). The responsibility is to provide scaffolding when it is requested.

Facilitator as Mentor. The pathway from instructor to facilitator to mentor may be a personal choice. Letting go of teach-centered, fading away from coaching when requested, does not ignore “challenging learners to consider why they hold certain assumptions, values, and beliefs” (Imel, ¶ 8). Self-direction is considered by some scholars to be a characteristic of adulthood. Not all adults possess this attribute in equal measure. If adults are accustomed to teacher-directed learning environments, they may not display self-direction. It could come in the form of working with a virtual team, in order to adopt an approximate model from the readings into more specific mock-up of a solution which reflects a real-world problem. This involvement describes dropping the scaffolding and moving toward self-directed learning. The responsibility is to provide conceptual scaffolding when it reminds students of previous learning.

Tip #7 Follow a path from teacher to mediator to facilitator to mentor

Effect of Evaluations. Fink (1999) indicates that a key to evaluation is to answer the questions “How well am I teaching?” (¶ 5) and illustrates her research using the model trend over time to distinguish a) potential as teachers, b) quality of teaching for teachers

who do evaluation, and c) a flattening trend for performance by those who ignore the opportunity (Figure 2). She identifies five sources: self-monitoring, audio and videotape recording, information from students (questionnaires and interviews), students' test results, and an outside observer and promotes a thesis that all five have both value and limitations. Her chapter gives tips on selecting of creating instruments for assessing the quality of teaching.

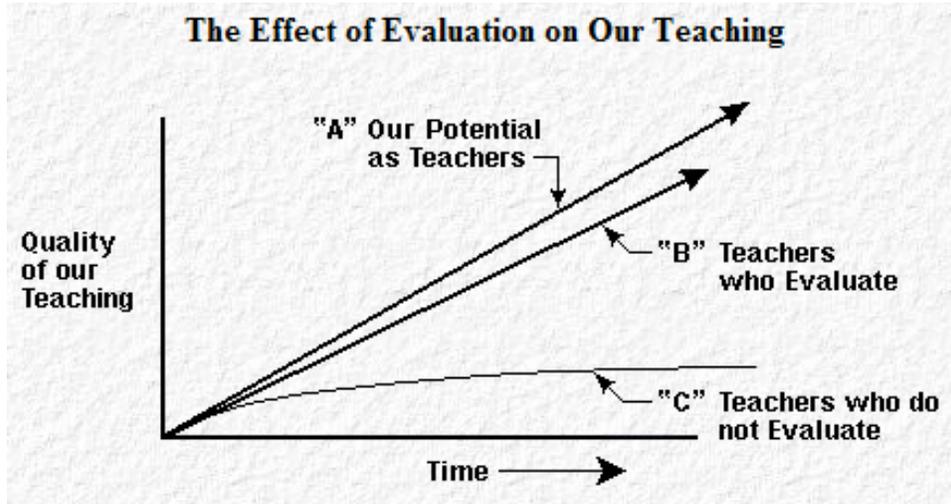


Figure 2 Effect of Evaluation of Our Teaching (Fink, 1999, Figure 1)

Questionnaires can be objective score cards to a series of questions, or be open ended short essay replies, be submitted anonymously or not, specific to the course content or the experience of the learning opportunities presented by the online facilitator. During live online class session, polling is a form of questionnaire, yes, however answers that are composed after reflection have higher value instead of clicking a icon. I recommend using both asynchronous discussion in the one, and also confidential anonymous surveys.

Tip #8 Evaluate our own teaching

Critical Incident Questionnaire (CIQ). Brookfield (1986) extends an idea put for the by Mezirow (1985) called “perspective formation”, by achieving “critical reflectivity” that “adults come to reflect on their self-images, changes in their self-concepts, question their previously internalized norms (behavioral and moral), and reinterpret their current and past behaviors from a new perspective ...” (pp. 213-214). Brookfield (1990) defines critical incidents as brief descriptions written by learners of significant events in their lives. Table 4 shows the original CIQ next to my own adaptation as an online learning end of course survey is shown in using open discussion threads.

Table 4 CIQ questions vs. Evaluation Criteria

	Critical Incident Questionnaire (Brookfield, 1998, p. 115)	Evaluation Criteria (end of course survey set up as asynchronous discussion)
		Eval#1: Which of the learning outcomes was most meaningful to you? Why?

1	At what moment in the class this week were you most engaged as a learner?	Eval #2: Which learning segment of this course engaged you the most? or had the most relevant to your learning agenda?
2	At what moment in the class this week were you most distanced as a learner?	Eval #3: Which lecture or chapter was the least interesting to you? ... which did not grab your attention? Why?
3	What action that anyone in the room took this week did you find most affirming or helpful?	Eval #4: What event took place in this class that was the most meaningful to you? Why?
4	What action that anyone in the room took this week did you find most puzzling or confusing?	Eval #5: What lesson or event in this class was the most puzzling or confusing to you? Why? How could it be corrected?
5	What surprised you most about the class this week?	Eval #6: If you had an "ah hah!" moment, when the light of understanding turned on, what was it?
		Eval #7: What was the advantage of doing a case study, together with a virtual team?

The questionnaire is a means for probing the assumptive world of the learners. Further, as a “technique, critical incidents are idiographic rather than nomothetic” seeking to “highlight particular, concrete, and contextually specific aspects of people’s experiences” (Brookfield, 1990, p. 180).

CIQ Mechanism. The mechanism for Brookfield’s CIQ was a single sheet of paper with five questions for which a student can jot down a concern and hand in the paper, anonymously. It is impractical to drop off an anonymous CIQ upon exiting an online class, therefore, adaptations were made to the process and to be a discussion forum, which meant that confidentiality was sacrificed and the evaluation questions were timed for the final week of a class. He tells the story of the value gained in order to improve his own delivery of a better learning experience. Answers to these shared evaluation questions are a rich experience of sharing ideas about the learning adventure and valuable for the instructor’s self appraisal.

Tip #9 Evaluate the shared learning experience

Evaluation of Learning Experience. During the open evaluation during the last week of class, students were encouraged to answer these discussion questions and received points for postings as outlined in the syllabus. Good ideas earned a bonus point. Most students responded, not just to earn the point but because they wanted to express themselves. The vocabulary “critical incident” was not used when asking for an evaluation on criteria that was to be expressed openly and with dialog. Although I frequently participated in the discussion forums, I did not reply to any of these postings so as not to constrain the ideas. Non-Western learning acknowledges *interdependence* in learning, linked to *communal* nature of learning and integrating a *holistic* approach (Merriam et al., 2007, pp. 237-238). The ideas represented by these words, interdependence, communal and holistic, provide conceptual variables for success of online virtual teams working and succeeding together under the guidance of a motivated learning facilitator who takes on a role of mentor, who is a story teller and who has a practical worldly experience. The motivation would be to maximize the opportunity for learners to become self-directed.

Tip #10 Cultivate a holistic approach

Importance of Contextuality. According to Brookfield (n.d.) “One of the best ways to enliven and deepen dialogue is through the skillful use of questioning. Discussion leaders who seem to have a knack for keeping discussion going tend to emphasize their role as questioner and inquirer, frequently asking questions to uncover the sources of participant opinions, and to get clarification on those opinions. They also raise questions to underscore the links between comments and to synthesize or sum up an entire conversation. Questioning is also a practice that “embodies respect” (Section 24, p. 39). In a working paper Brookfield (2006) noted, “adults think dialectically when they inhabit the arena of decision-making in which an awareness of universal rules, general moral strictures and broad patterns of causal and prescriptive reasoning ... is balanced against, and constantly intersects with, the contextual imperatives of a situation”. This recognition honors the importance of *contextuality* - a recognition that specific situations make nonsense of general rules or theories.

Tip #11 Coach, Motivate, Delegate, Moderate, Facilitate

Situational Leadership. Table 5 exhibits four stages of self-directed learning model for described in Situational Leadership which re-enforces an understanding that “teacher's purpose is to match the learner's stage of self-direction and prepare the learner to advance to higher stages” and is illustrated by the following table using italics for the accepted stage that include interdependence between learners and teacher, for the preferred stage for a holistic approach.

Table 5 Four Stages Toward Self-direction (*adapted from Grow, 1996, Figure 1*)

	Student	Teacher	Examples
Stage 1	Dependent	<i>Instructor</i> , Coach, Authority	Coaching with immediate feedback. Drill. Informational lecture. <i>Objective assessments</i> . Overcoming deficiencies and resistance.
Stage 2	Interested, <i>asks and answers questions</i>	Motivator, guide	Inspiring lecture plus guided discussion with real world scenarios. Goal-setting and learning strategies.
Stage 3	Involved	Facilitator, <i>storyteller</i>	Discussion facilitated by teacher who participates as equal. Seminar. Group projects.
Stage 4	Self-directed	Consultant, delegator, <i>moderator</i>	Internship, dissertation, individual work or self-directed study-group.

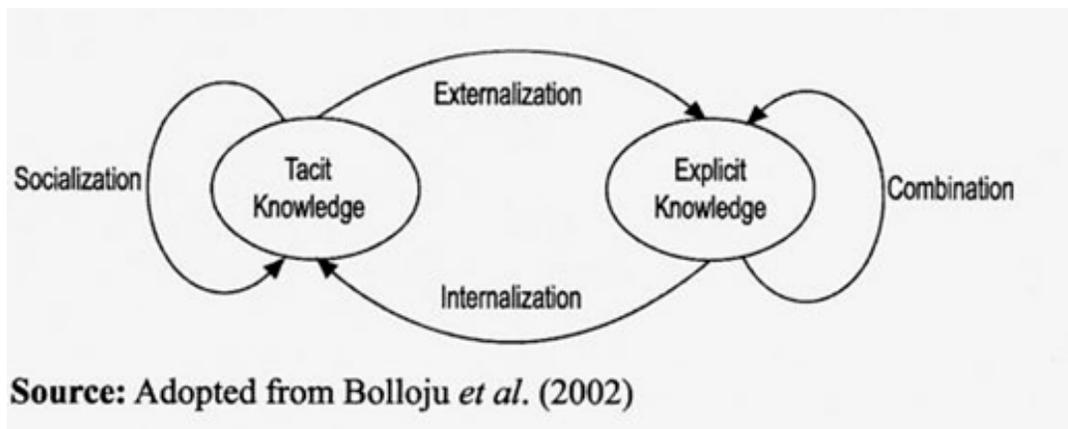
Staged Self-Directed Learning Model. The concept was further developed as the staged self-directed learning model by Grow and has been displayed in *italics* from Grow’s professional web site. Grow’s narrative describes the way this model provides guidance.

1) Sometimes the teacher's knowledge matters more than anything else; 2) Lecturing may be best for setting up a situation for dialog to follow. During lectures, the students may loop back to Dependent Learner or Interested Learner mode, then after dialog, return to Involved Learner in response to the group interaction and subtle facilitation. 3) Sometimes, individuals or subgroups become ready to expressed self-direction and leadership, looping back up to Self-Directed learner mode, and then carry out a joint project independently. Grow suggests that “Looping may be a more effective way to use the SSDL concept than trying to follow a sequence of linear stages” (1996). Table 5 shows the stage self direction model.

Table 6 Applying the Staged Self-Direction Model (*adapted from Grow, 1996, Figure 3*)

S4: Self-Directed Learner			Independent Projects, student directed discussions...	... discovery learning, facilitator as mentor and moderator
S3: Involved Learner		Application of material. Facilitated discussion...	...Teams performing the assignments...	... Critical thinking. Learning strategies.
S2: Interested Learner	Lecture and discussion,applying basics in stimulating way...	Instructor as motivator.	
S1: Dependent Learner	Introductory material...	Lectures, Drill. Immediate Correction.		
	T1: Authority Expert	T2: Salesperson Motivator	T3: Facilitator	T4: Delegator, Moderator

Inductive Approach. Inductive approaches are consider to be grounded in educational theory and supported by numerous empirical studies (Felder, Felder & Dietz, 2002; Felder & Prince, 2007; Xu, & Quaddus, 2005).



Source: Adopted from Bolloju *et al.* (2002)

Figure 3 Noaka's knowledge creation model (*cited in Xu & Quaddus, 2005, Figure 1*)

When pondering a self assessment, a relevant question to ask is "Do these methods work?" According to Felder who teaches using an inductive method, "An analysis of the literature suggests that there are sometimes good reasons to "teach backwards" by introducing students to complex and realistic problems before exposing them to the relevant theory and equations" (2007, ¶ 2). Xu and Quaddus (2005) provided a qualitative research and a comprehensive model that they claim is "exploratory in nature" and leads toward how it can guide practical applications for Knowledge Management System adoption and diffusion. During the study the researcher uncovered "key patterns/themes and produce key words/phrases" using an inductive process (Xu & Quaddus, 2005). The following diagram illustrated the synthesis of source of knowledge, a process the authors regard as "applying knowledge in practice and reflects the concept of learning by doing". In support of the inductive approach, this would mean guiding learners into internalizing lessons for explicit knowledge. Hands-on practice helps strengthen the absorption of the learning, perhaps in time to be acknowledged during an end of course evaluation.

Tip #12 Participate in shifting the paradigm

Adapting Theory into Practice. Kearshey (2009) grants permission to glean from his Theory into Practice (TIP) database ideas for adapting theory into practice, summarizing "50 major theories of learning and instruction". Each is cited and has links at the bottom to other sites.

Summary. The important contribution of this paper has been to evaluate the literature that research on ways of knowing, telling stories using scenarios, acknowledging different styles of learning, distinction between andragogy and pedagogy and the adult learning theories that increase effectiveness of online education.

Tip #1 Become Story Centered

Tip #2 Open evaluation of learning experience increases awareness and trust

Tip #3 Teach Around the Circle

Tip #4 Build upon a problem-oriented approach

Tip #5 Encourage goal orientation defining purpose served by new information

Tip #6 Build upon prior knowledge

Tip #7 Follow a path from teacher to mediator to facilitator to mentor

Tip #8 Evaluate our own teaching

Tip #9 Evaluate the shared learning experience

Tip #10 Cultivate a holistic approach

Tip #11 Coach, Motivate, Delegate, Moderate, Facilitate

Tip #12 Participate in shifting the paradigm

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