Effectiveness of Interaction in Learner Centered Paradigm in Online Education (Part 2)

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Abstract This paper speaks to educators, program administrators and PhD Learners intending to teach adults. For three decades, critical reflection has been invoked as a good practice for adult education. "What is known about how adults learn and are motivated to participate in online learning to advance their career?" This second of two part analysis of the literature builds upon theories and scholarship that leads to recommending practitioner actions. The themes are: theories about adult learning theories, sharing my professional practice as a learning facilitator. Brookfield's critical incident question are adapted to apply the concept of student critique of the learning experience. In the context of exploring how to be effective in an online environment, this discussion 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 completing an academic degree. A recommended action applies Porter's value chain analysis for shifting focus from teacher-centered to learner-centered learning.

Key Words: Online education, critical incident assessment, Critical Incident Questionnaire (CIQ), Virtual Learning Environment, Scaffolding, Value Chain Analysis

Overview

The purpose of this second part of two is to further explore answers to "What is known about how adults learn and are motivated to participate in online learning to advance their career?" and offers to learning facilitators six additional suggestions to make a difference in adults' learning experiences. This paper evaluates further theoretical sources about traditional teaching, and online learning. Guidance for interpreting the literature on adult learning theory analysis is direct experience in the technology industry both worst and best practices. Attention is given to the demographic of learners earning degrees in Information Technology, a context relevant for selecting the most important theories, principles, and learning and how they can be applied to critical thinking.

Theoretical Foundation

This second of two parts shares the participatory evaluation based on the Critical Incident Questionnaire that is practical, open, dialectic and meaningful for adopting the following six tips: 7) Following a path from teacher to mediator to facilitator to mentor; 8) evaluating our own teaching; 9) evaluating the shared learning experience; 10) cultivating a holistic approach; 11) coaching, motivating, delegating, moderating, facilitating; and 12) getting ready to participate in shifting the paradigm. This two part discussion is organized into three themes in order to build upon philosophical scholarship that leads to practitioner wisdom in applying the theories for Andragogy and Adult Learning Theories Analysis.

Adult Learning Theories Analysis

This theme synthesizes ideas about teaching and learning in the digital age.

Scaffolding Concept Applied

The concept of scaffolding is promoted by educational practitioners (McKenzie, 1999; Misanchuk & Anderson, 2001; Van der Stuyf, 2002; Diaz, 2005; Hill, 2008). McKenzie uses the metaphor of surrounding a building with scaffolding to define the terms applied to education (1999, ¶ 6). The term and the concept can be understood as a structure in which a building (or learners) are supported while they are learning. McKenzie describes eight characteristics of scaffolding which can be summarized as follows. According to McKenzie (1999), applying the technique of scaffolding: provides clear direction and reduces students' confusion, clarifies purpose, keeps students on task, clarifies expectations and incorporates assessment and feedback, points students to worthy sources. It also reduces uncertainty, surprise, and disappointment, delivers lessons efficiently and creates momentum. Along these lines, Van der Stuyf (2002) defines results from a study that classifies the advantages as "it engages the learner"… "builds on prior knowledge and forms new knowledge" and builds self-esteem (pp. 11-12). The disadvantages are that this process is time-consuming; the teacher has to give up control, and a void in working examples about doing it successfully (p. 12). It is my perception that this scaffolding can be applied to adults in technology course from the faculty's world experiences.

Hill (2008) promotes training in learning management system 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 that is in the temperament and experience of the course facilitator and can be acquired when 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). He 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" (Diaz, 2005, p. 1). Diaz clarifies how to accomplish re-interpreting the traditional model to one that develops digital resources by having an inclusive and collaborative policies, contracts and agreements with courseware program directors, authors and facilitators.

Traditional Courseware. With Virtual Learning Environment tools, one-way monological teaching is becoming superseded by interactive dialogical learning. The opportunity for online courses is to exceed traditional practices of teacher-oriented delivery has been acknowledged. Traditional courseware and online courses that are merely adapted to be delivered using VLE tools usually contain publisher prepared lectures using PowerPoint style slides which illustrate content from the text book and hold attention during information vocalized by the instructor. This is a teacher-centric approach with students who can attend and be passive. In the chapter "[t]he Power of Knowledge and Preparation", Wlodkowski, states that, "In general, adult learns come to learn for a definite reason, to do, produce, or decide if what they are learning has real value to them" … "they want relevant concrete examples of how the new skills will help them" (2008 p.53). This principle ties to the first phase, modeling, of the five phase model above.

Teacher as a Mediator. The paradigm shift is toward the teacher-as-a-mediator of community of learners. "Virtual groups are physically isolated and visually anonymous. Members of virtual teams have a reduced set of social cues with which to control the effect of stereotyping on their relationship management" (Branson, Clausen, & Sung, 2008, p. 68). These authors conclude that virtual teams have issues with "both form and function" that are relevant to the logistics of working virtually. They not that virtual teams in their study "scored significantly lower on the constructive style than the F2F teams" (p. 69). 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 the first phase, modeling, of the five phase model as there is a transition into Phase 2, approximating supported by the teacher's scaffolding of the lesson between his or her own experience, the text, and the student's 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 in the learning instead of merely mediating the tasks, assessing results and monitoring progress on a prescribed agenda. Misanchuk and Anderson (2001) provide background descriptions of characteristics of a learning community and examine ways to use certain instructional strategies to work to move an entire class of student working as a cohort toward a community, suggesting ways to encourage interaction at three levels: "communication, cooperation, and collaboration" (p. 6) and ways the community contributed to deeper learning. Their study build a table intersecting Communication, Cooperation and Collaboration (as a migration from individual engagement to group interdependence) intersected with horizontal attributes of learning, inquiry, decision-making, goals, accountability, learning relationship. This maps to phase 2 during a transition into phase 3, observing and coaching of joint project teams, while still retaining "scaffolding activities rooted in the communication formats of communication, cooperation, and collaboration" (Misanchuk & Anderson, 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 that letting go of teach-centered, fading away from that role to 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 but not all adults possess this attribute in equal measure. In addition, if adults have been accustomed to teacher-directed learning environments, they may not display self-direction in adult learning settings (Imel, 1995, p. 17). Although adult learning for technology courses is rarely transformative in nature at a personal level, the wisdom gained my adopting some of the non-western insights goes a long way. It could come in the form of working with a virtual team, in order to adopt an approximate model from the textbook into more specific mock-up of a solution that is more complex and which reflects a real-world problem. This role is anchored in phase 3 in the model above but intends to pass on the perspective that leads to learned adopting the way of thinking, not just the technique in order to become more self directed. This involvement describes phase 2 dropping the scaffolding and moving into phase 3 self-directed learning. The responsibility is to provide conceptual scaffolding when it reminds students of previous learned or directs students to self-directed research.

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

Assessment of learning experiences

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 following 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. 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.

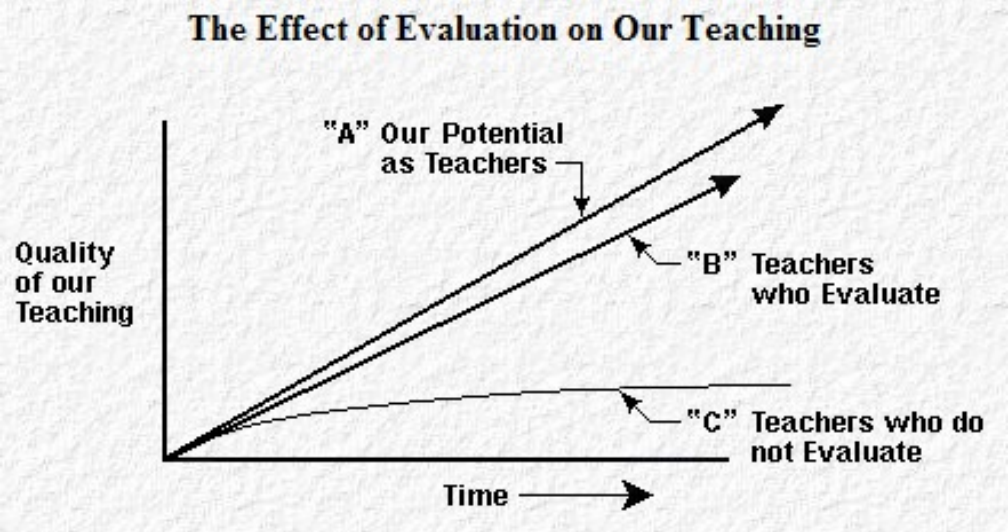

Figure 1 Effect of Evaluation of Our Teaching (Fink, 1999, Figure 1)

Questionnaires can be objective score cards (fill in a radio button for a range) 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 class, polling replies are a form of question/answer.

Tip #8 Evaluate our own teaching

Critical Incident Questionaire (CIQ). Brookfield (1986) extends an idea put forth by Mezirow (1985) called "perspective formation", by achieving "critical reflectivity" that "adult 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. Brookfield (1990) defines the term, as "Critical incidents are brief descriptions written by learners of significant events in their lives" widely used by educators who give to the learners a set of short clearly written instructions that identify the kind of incident to be described, asking for details and the reason the event was significance (p. 179). This 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" (p. 180). When Brookfield (1995) used the CIQ in his own teaching, he ask learners to submit an "analysis of their comments over the semester as part

of their assessed participant learning portfolio" (1995, as cited in Brookfield, 1998). He tells the story of the value gained in order to improve his delivery of a better learning experience.

Critical Commentary. Brookfield (1998) expresses concern learners' anonymity is guard "as a precondition of honest critical commentary has shaped the development of the classroom CIQ (p. 151) assuming that students are "are understandably reluctant to be too honest with us". His answer is a "cloak of anonymity" so that students could point out their experience that the teacher may have "unwittingly stifled free discussion, broken promises, or treated certain kinds of people with more deference than others".

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. Brookfield did not want to know the names of students leaving their CIQ form upside down, keeping a copy for themselves, at the door as they exit. It is impractical to drop off an anonymous CIQ upon exiting an online class. Therefore, some adaptations were made to the process and adapted it to a discussion forum format, which meant that confidentiality was sacrificed. Instead of the questions being motivated by a student having a critique immediately following a single event, the evaluation questions were timed for the final week of a class.

Tip #9 Evaluate the shared learning experience

Evaluation of Learning Experience. The following table shows Brookfield's five original questions which are focused on a single teaching session adapted to be an extended end of course questions. Students were encouraged to answer these discussion questions and received points for asynchronous 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 their critique. The vocabulary "critical incident" was not used when asking for an evaluation of the four week course on criteria that was to be expressed openly and with dialog. Although I do participate in online discussion forums, I did not reply to any of these evaluation postings.

Table 1 CIQ questions vs. Evaluation Criteria

	Critical Incident Questionnaire (Brookfield, 1998, p. 115)	Evaluation Criteria (adapted from Brookfield, 1998)
		Eval#1: Which of the learning outcomes (from the list in the course outline) 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?

		Eval #4: Were the "bonus" lectures useful? ... beyond the chapters and lectures? What value did you receive?
		Eval #5: If you played the archives of the meetings, did they have value?
3.	What action that anyone in the room took this week did you find most affirming or helpful?	Eval #6: 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 #7: What lesson or event is this class that 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 #8: If you had an "ah hah!" moment, when the light of understanding turned on, what was it?
		Eval #9: What was the advantage of doing a case study, together with a virtual team? Did it work ok to have a flexible schedule for composing a work-in-progress deliverable? Did the templates help? Did the examples help? Did the case study in the text book help?
		Eval #10: Did it work out to have the quizzes and the exams become learning opportunities? What would make the exams better for this course?

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 tellers and who has a practical worldly experience in the technology industry. 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 (2006) "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. They frequently ask questions to get more information from participants, 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 that Brookfield is preparing for publication, he posted, “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 ("if this is the case then I should do that") is balanced against, and constantly intersects with, the contextual imperatives of a situation. The recognition and honoring of the importance of *contextuality* - the recognition that specific situations make nonsense of general rules or theories - is something that is learned developmentally” (n.d.). This theme also maps to the final phase *generalizing* in “Cognitive Apprentices Phases” (See Part 1 Table 4, page 9).

Stages of Self-Directed Learning

Situational Leadership. The following table 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 (adapted from Grow, 1996, Figure 1) using italics for the accepted stage that include interdependence between learners and teacher, and for the preferred stage for a holistic approach.

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

Staged Self-Directed Learning (SSDL) Model. The concept was developed as the staged self-directed learning model has been adapted from Grow’s professional web site. The left column labels stages from 1 to 4. The columns are labeled with the role of the teaching style. For this discussion, the preferred balance of stage with teaching style is shown *in italics* while the expectations can be fulfilled by those intersections between roles and stages.

Table 2 Learner's Four Stages Toward Self-direction

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

Grow's narrative describes the way this model provides guidance. Three representative description follow, extracted and summarized from his web pages. 1) Sometimes the teacher's knowledge matters more than anything else; 2) Lecturing may best for setting up a situation for dialog to follow. During lectures, the students may loop back to S1 Dependent Learner or S2 Interested Learner mode, then after dialog, return to S3 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 to S4 Self-Directed learner mode, and then carry out a joint project independently. As a way to share his ideas, 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 3 Applying Staged Self-Direction Model (adapted from Grow, 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. The classical diffusion theory is an explanatory approach to the problem of individual or organizational adoption of innovations, new ideas or solutions. Hogarth and Dawson's study empirical study which applied the technology acceptance model, suggest that "important practical gains to be made from a well-designed model, such as a guiding framework within which practitioners can plan and coordinate their on-the-ground efforts" (2008, Conclusion). In evaluating there case study, the authors put into perspective "facilitating conditions" and suggested that "such an inductive research approach would be a useful one for e-learning researchers interested in implementation processes to adopt" then confessed a short fall in dedicated research interest in this area.

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). 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 Systems (KMS) adoption and diffusion. During the study the researcher to uncoverd "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.

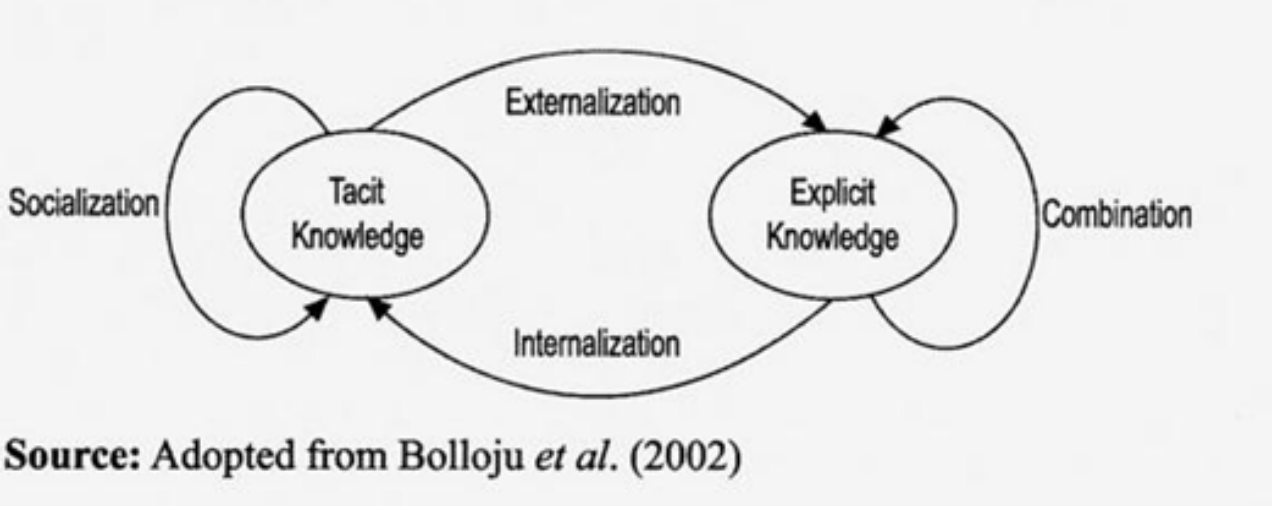

Figure 2 Noaka's knowledge creation model (Xu & Quaddus, 2005, Figure 1)

Experiential Learning. Characteristics of a motivated facilitator is being curious, being active, seeing meaning in experiences, becoming effective at whatever we value and being very persistent in translating knowledge into something tangible and simple to understand. These are behaviors that generated inspired learners. Wlodkowski said that "while in flow, people report feelings of joy, happiness, creativity, and capability. Emotionally, intrinsic motivation is not static…" (2009, pp. 22-23). This state of mind potentially generated original thinking.

Tip #12 Participate in shifting the paradigm

Adapting Theory into Practice

According to Knowles' *Theory of Andragogy,* the key factors for adult education are maturity, accumulation of experience; readiness for learning; being problem vs. subject centered; intrinsic vs. extrinsic motivation; and curriculum that is anchored as problem-centered rather than content-oriented (Knowles, 1989, p. 44) and to cultivate a need to know why (p. 88).

Transference of knowledge, however, needs more that adapting scholarship and proven theories. Transferring learning requires production of curriculum and design of delivery environments that leverage the best of the online tools. An important outcome is learning that can be applied in a professional position. 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". The list of 50 theories is actually there… naming the theory and the authors name between parenthesis, a sampling of articles found the scholarly papers very interesting, following the protocol and has the potential to inspire pragmatists to apply the concepts with worthwhile suggestions. Each is cited and has links at the bottom to other sites. This site also lists 18 Learning Concepts relevant to

The five forces model is a trusted framework for both business and technology that can guide a shift of scenario for academic research and publishing practical planning for business transformation. Michael Porter said "There is a tremendous pressure in U.S. academia to publish scholarly papers, and usually, it is quite difficult to break away from the existing structure of that literature and develop ideas that are orthogonal to the mainstream. This makes it more difficult to achieve true innovation" (2007, p. 270). This notion brings forward ideas from the paradigm of value chain analysis that are meaningful to building upon prior knowledge and defining a holistic approach for integrating Porter's value chain analysis with curriculum for practical interactive skills for today's industries. Essential is the involvement of faculty with a pragmatic mindset. Sasse et al. (2008) conclude that "institutions will need to become more creative in how they acknowledge faculty work. Rank and tenure is typically wedded to the three categories of scholarship, teaching, and service" (p. 46). The role of faculty is essential for a complete picture of value chain analysis when the product being delivered is learning content.

Sasse, et al. (2008) illustrate two frameworks (figures 3 and 4) which distinguish a familiar traditional teacher-centric discipline with a proposed learner-centered dimension. The teacher-centered paradigm ends with student learning being appraised in an objective manner using exams that maps back to the assigned readings and course content and participation. The learner centered paradigm aims at appraising learning using assessments from which course grades are merely a metric that meets formalized and approved curriculum guidelines.

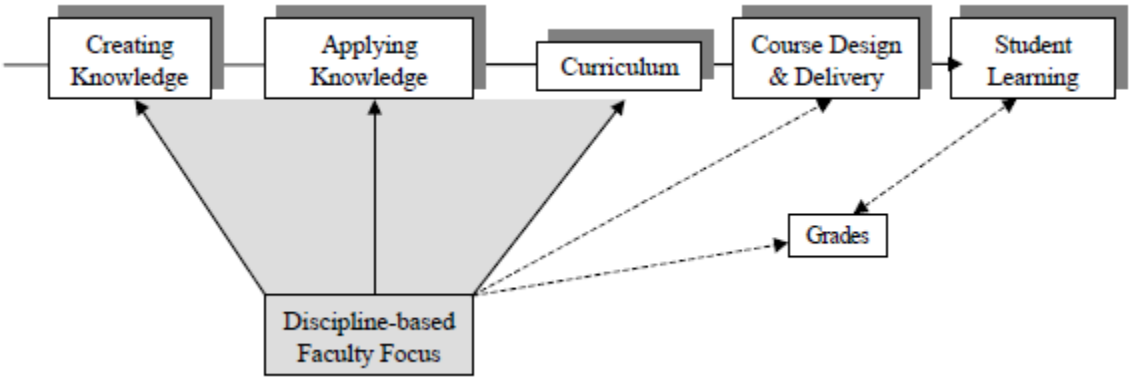

Figure 3 Faculty Focus in Academic Value Chain (Sasse, et al., 2008, p. 40)

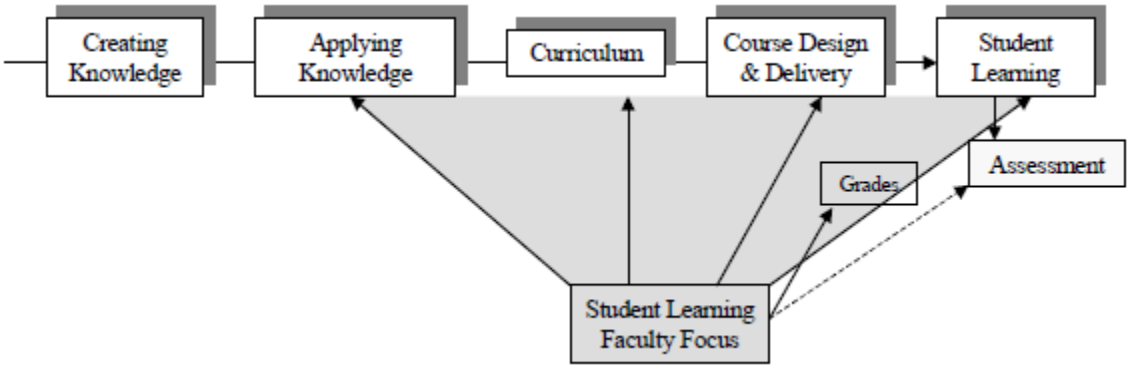

Figure 4 Downstream Faculty Focus for Student Learning (Sasse, et al., p. 42)

Motivated and Skilled Faculty. Sasse, Schwering, and Dochterman (2008) apply value chain analysis thinking to identify creating leverage among activities performed by teachers and to focus on work located along the chain for delivering an educational service. "This analysis yields a shift in faculty focus 'downstream' in the value chain, where more is expected of faculty in the areas of course design and student learning and assessment" (p. 35). This study offered ideas about online programs that differentiate faculty roles based on type of service delivery. This resource offers ideas about applying value chain analysis as a lens for examining how a diverse faculty contributes and for comparing the dual roles of research and teaching.

Conclusion and Recommendation

The important contribution of this paper has been to contribute ideas for offering experience of participatory evaluation of the learning experience in the form of an evaluation based on the Critical Incident Questionnaire that is practical, open, dialectic and meaningful. This has extended the six tips of part one: 1) Become Story Centered; 2) Open evaluation of learning experience increases awareness and trust; 3) Teach Around the Circle; 4) Build upon a problem-oriented approach; 5) Encourage goal orientation defining purpose served by new information; and 6) Build upon prior knowledge.

This paper has contributed scaffolding of formalized curriculum guided learning experience in the form of teacher self-evaluation based on the Critical Incident Questionnaire that is practical, open, dialectic and meaningful for adopting the following six tips: 7) Follow a path from teacher to mediator to facilitator to mentor; 8) Evaluate our own teaching; 9) Evaluate the shared learning experience; 10) Cultivate a holistic approach; 11) Coach, Motivate, Delegate, Moderate, Facilitate; and 12) Participate in shifting the paradigm.

The ideas articulated in this paper may be too broad to be implemented within a single task force engagement and active participation. Therefore, as stakeholders encourage shifting the paradigm an evolutionary task plan could be based on recorded evidence of success of the value chain analysis as technique for appraising the value added for each task in the plan.

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