

“Well, it's messy sometimes...”:

Barriers to building a learning community
and dynamic assessment as a system intervention

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Abstract

This article describes the perceived barriers to building learning communities, and the impact of self-assessment on two cases. One, a graduate cohort used traditional summative methods, employing Senge's (1990) characteristics as the self-assessment dimensions. The second, a following cohort, was introduced to dynamic self-assessment early in the program, using the same criteria. Interview data was collected. Barriers to building communities were elaborated, including individual, structural, and systemic processes. Differences were noted concerning community formation, and how participants lived the community experience. The cohort using dynamic self-assessment displayed more systems thinking, an elaborated shared vision and conceptualization of team learning; a deeper questioning of mental models; and more personal mastery attributed to being a member of a learning community.

KEYWORDS: workplace learning, learning communities, dynamic assessment, intervention, learning organizations, professional education, thought collectives

“*Well, it's messy sometimes...*”: Barriers to building a learning community and dynamic assessment as a system intervention

Organizations are now placing a major emphasis on transforming themselves into learning communities or learning organizations (Lave & Wenger, 1991; Senge, 1990; Senge, Roberts, Ross, Smith, & Kleiner, 1994; Wenger & Snyder, 2000) in an effort to maintain a leading edge. This is an especially important principle to explore in professional education whose purpose is to prepare individuals to work more effectively in modern organizations. The creation of learning communities in university classes as a modeling experience for workplace learning is becoming more widespread (Stinson, 2004; de Guerre & Taylor, 2004; M. Taylor, de Guerre, Gavin, & Kass, 2002).

Evaluation and Assessment in Learning Communities and Organizations

Evaluation and assessment have been cited as crucial to the implementation, maintenance, and sustainability of a learning community (Hubball, Clarke, & Beach, 2004; Laufgraben & Shapiro, 2004). There have been significant strides in evaluating or assessing learning community programs in higher education using both quantitative and qualitative methods (K. Taylor, Moore, MacGregor, & Lindblad, 2003). Some of the studies focused on the efficacy of technology-mediated learning environments (Davies, Ramsay, Lindfield, & Couperthwaite, 2005) or relied on anecdotal or testimonial evidence of satisfaction from students and faculty upon exiting from the community (Stinson, 2004; K. Taylor et al., 2003). More systematic evaluations tended to use various benchmarks as indicators of success: student academic achievement, course completion, retention rates, persistent membership in a learning community program, class attendance, student engagement, full integration into the university environment, the amount of study entwined with social time, emotional bonding (friendships), classroom

interaction, and /or small team functioning (Coulter-Kern, 2000; Hegler, 2004; Laufgraben & Shapiro, 2004; MacGregor, 2003; K. Taylor et al., 2003; Tinto, Goodsell, & Russo, 1994). Only a few studies tended to examine intellectual development (K. Taylor et al., 2003). Case studies and evaluation reports of university-based learning community programs (MacGregor, 2003) seem to indicate that assessments, though carried out collaboratively with different stakeholders, are often conducted top down by administrators and faculty members with a view to improving the effectiveness of the program itself (Laufgraben & Shapiro, 2004; Smith, MacGregor, Matthews, & Gabelnick, 2004). There has been little systematic empirical research about the efforts to sustain a learning community (K. Taylor et al., 2003), about the blocks to its development (Scott, 2003), and whether a system has successfully and effectively made this transition for a prolonged period of time.

In learning organizations (Senge et al., 1999), the overall objectives of assessment are more about processes than products; they are generally focused on the alignment of the community's processes to fulfill its function and purpose. Here, assessments are carried out with a view to (1) interpret observable behaviors that reflect normative standards [goals, mission, or vision]; (2) judge progress towards those standards; (3) guide the next steps and future goals; (4) provide a free flow of information up / down / across an organization vis-à-vis its members' learning capacity; (5) create an open forum in order to contextualize the meaning of the assessment results; and (6) develop judgment within a team.

However, the general goals of evaluation may be in implicit conflict with this espoused perspective of alignment since they involve the connotation of a judgment of worth or value. This negative mental model has inherent drawbacks, which can impede learning. Evaluation, especially evaluation of performance, is not a benign event; it carries messages about intentions,

power, and culture embedded within its process. In addition, evaluation can reinforce passivity with regards to monitoring performance. Judgment is in the hands of the evaluator, not the learner. In contexts of professional education that attempt to create reflective inquiry and mirror current practice within learning organizations, communities of practice, or knowledge management systems, new approaches to assessment must be developed.

Dynamic Assessment as a Process to Bridge Professional Education and the Workplace

Dynamic self-assessment emphasizes authentic contexts in recursive, developmental, and scaffolded assessment situations. It focuses on potential and assumes that individuals are open systems (Gredler, 1999) who are continually developing expertise (Sternberg, 1998). This makes dynamic assessment an ideal alternative to traditional top-down evaluation methods. As well, this approach is aligned with the present call for new forms of assessment procedures that promote learning organizations (Block, 2001; Senge, Kleiner, Roberts, Ross, Roth, & Smith, 1999).

Since human learners are conceptualized as open systems, one of the purpose of dynamic assessment is capacity development in that the assessment procedures describe the zone of proximal development (Greenberg, 2000; Lidz, 1997), the space where culture and cognition co-create each other (Cole, 1985) and learning takes place. As well, dynamic assessment assumes that substantive changes can occur in behavior if feedback is provided across an array of increasingly complex or challenging tasks (Swanson & Lussier, 2001). This assumption reflects one of the major orientations of dynamic assessment: assessment as modification (Sternberg & Grigorenko, 2002), demonstrating that human functioning has plasticity and modifiability (Jenson, 2000). The goal of dynamic assessment is to assess the highest level of performance (Karpov & Gindis, 2000), while focusing on longitudinal growth. It also assumes that

competency reveals itself in new situations with new social actors. Strengths (Jenson, 2000; Karpov & Gindis, 2000) of this approach are that it:

- allows for multiple opportunities to demonstrate competence in several contexts and across system cultures;
- focuses on potential, not just needs and deficits;
- invites individuals to be more accountable for their behavioral goals and for shaping their environment;
- focuses on the quality of the learning and the experience, not just the performance;
- addresses the question: “What effort was expended to achieved the desired goals?”;
- reflects the importance of the internalization of actualized change in behavior or performance; and
- can facilitate the novice / expert transition.

Since the timing of dynamic assessment is ongoing and recursive, it reflects the continuing dynamics of workplace learning, and increases the correspondence between professional education contexts and the workplace. As well, it allows individuals the time to do something about achieving their identified objectives.

Additional Theoretical Frameworks That Guide This Inquiry

A primary guiding framework is Vygotsky’s (1978; 1987) theory of learning and cognition that emphasizes social and cultural relations. Within this context, cognition is an adaptation of the individual’s consciousness to social and cultural interactions with the learner as an active agent in relation with other active agents. Lave and Wenger (1991) anchor learning in the process of co-participation and social engagement in authentic practice contexts. Knowledge does not just reside in the head, but also in the meanings, relations, and skillful executions of

praxis. Learners participate in communities of practice (Wenger, 1998) and mastery requires newcomers to move from the periphery towards full participation in the socio-cultural practices of the community. Thus cognition and expertise are seen as embedded in social relationships situated in authentic contexts and nested and negotiated within a culture of practice.

Purpose

This project was an attempt to identify the blocks to developing learning communities and to develop a model for assessing their evolution. The overall purpose of identifying blocks was to illuminate those processes that interfere with the progression of a learning community. In this way, members of the community could address forces impeding growth and minimize their influence. Long-term goals of this project were to describe the process of self-assessment in an open learning system: what structures are most helpful and which ones hinder; what kind of support is needed by members from the cohort; how can accountability be promoted; and what kind of feedback timetable assists the optimization of the learner's and community's capacity. This inquiry also attempted to make a unique contribution to the knowledge about learning communities by examining efforts at sustaining the effectiveness of a learning community through the focused efforts of its members.

The Research Questions

Research questions that guided this inquiry were:

- What meaning do individuals have of the concept “learning community”?
- What hinders the evolution of a learning community?
- What role do self-assessment procedures play in how a learning community functions or develops?

Description of the Learning Community: The Practice Context

The graduate program in Human Systems Intervention (HSI) is designed to provide expertise for future organizational leaders and consultants in order to facilitate change processes within human systems. It emphasizes the development of process-oriented observation and intervention expertise, and relies on an empowerment model of consultation so that organizations can develop these capabilities internally. Its andragogical approach (Knowles, 1990) embodies a socio-ecological perspective (de Guerre & Taylor, 2004). A distinctive feature of this graduate program is the use of the cohort learning community model. Following the characteristic structures of curricular learning communities (K. Taylor et al., 2003), students are organized into a cohort of up to 25 students, who take the same courses at the same time. However, the use of the learning community structure aims to achieve goals in addition to greater coherence in what students are learning and greater interaction with faculty and peers (Washington Center's Evaluation Committee, n. d.). It aims to create a "thought collective" (John-Steiner, 2000), that is, a loosely structured collection of individuals with common concerns who, during focused collaboration, engage in the co-construction of knowledge as interdependent intellectual and emotional processes. A thought collective's pool of knowledge exceeds the capacity of any one individual. Thoughts pass from one individual in the community to another

... each time a little transformed, for each individual can attach to them somewhat different associations. Whose thought is it that continues to circulate? It is one that obviously belongs not to any single individual but to the collective. (Fleck, 1979, as cited by John-Steiner, 2000, p. 195)

Thought collectives demonstrate the quality of socially shared cognition (Resnick, 1991), as well as emphasizing the potential of stretching one's identity through partnership and collaboration, sustained and varied action, and the interweaving of social and individual processes (John-

Steiner, 2000). They differ from cooperating teams since members take emotional and intellectual risks to construct mutuality, productive interdependence, and jointly negotiated outcomes.

Integrative Program Design Elements

The HSI learning community members identify their own specific common values, generate norms regarding their functioning, and determine learning priorities during their first residential weekend in the Masters program. For the rest of the year, students "live and work" in multiple human systems, which are nested within the cohort structure, in order to facilitate the meaningfulness and usefulness of student involvement in a learning community. Students work in teams of various configurations on group and individual projects during the course of the year; they are also involved in learning and coaching triads at various points in order to provide learning support.

Faculty members engage in meetings to discuss the cohort composition [prior to the start of the year], to plan how the year and the courses will proceed, and, during the year, monitor the learning community's progress and developmental trajectory. As well, faculty members may co-teach, or be responsible for more than one course over the two-year period, and therefore, are familiar with the metaconceptual frameworks across the entire curriculum. Learning processes that are active and collaborative are privileged, consolidating links between experience, theory, and future practice. Since learning from courses is interrelated and faculty members create conditions for conceptual connection, students are able to embody the knowledge and skill competencies across the curriculum.

Courses are held in residence three consecutive days per month, or for one-week periods twice a year, so that students can pursue their professional careers. This format generates

intensive learning sessions that emphasize learning-in-relationship, reflective inquiry, and full engagement with practice. In this way, learning emerges from the dynamic relationships within the learning system and is applied to contexts interconnected with the learning community.

As an added opportunity to link experience and future practice, HSI students are given the opportunity to actively mold the learning community that is designed to maximize the benefits of experiential enquiry; they are invited to shape and model the qualities of an effective learning system. Through this methodology, human systems are understood as evolving configurations of relationships amongst people with intentions and goals. The cohort learning community format allows for the integration of theory, values, and skills in practical application. Learning goes beyond the acquisition of knowledge and skill to understanding and intervening effectively in social processes, including the use of one's self as instrument (Funches, 1995; Hanson, 2000).

Description of the Learning Community Members

This inquiry focused on two separate cohorts within the Masters program in human systems intervention. The cohort in case 1 was composed of 23 students, ranging in age from early twenties to late fifties. Four were men, while the remaining were women. Geographically, students came from Canada [both anglophone and francophone] and South America; two students were people of color. The majority of the learning community was middle class, working in the private or public sector. The cohort in case 2 was composed of 17 students, ranging in age from mid-twenties to late fifties. Six were men, while the remaining 11 were women. Geographically, students came from Canada [both anglophone and francophone], the United States, and South America. The majority of the learning community was middle class, working in the social service sector, government, or middle management in private industry.

Methodology and Methods

Methods

This inquiry used the comparative case study method (Stake, 1994) with two learning communities: one that used a standard form of self-assessment [case 1] and another that used principles of dynamic self-assessment [case 2] (Lidz, 1987; Elliott, 2000) as applied to an open learning system.

Methodology

A qualitative methodology was selected, since it is conducive to understanding meaning attributed to certain events, how context influences actions, and the process by which events and actions take place (Maxwell, 1996). A system is a unique yet socially interactive entity and is distinct because it has effective reciprocal social relationships within its subsystems. Since the entire learning community constitutes each case, members were recruited as representatives of the subsystems within the community.

Participants in this Inquiry

Eight individuals were interviewed, two women and two men from each cohort. Felicia, Frank, John Smith, and Veronique were members from case 1, while George, HB, Margaret, and Rachel were members from case 2. All participants are identified by pseudonyms. Participants ranged from 24 to 56 years of age. Aside from their full-time involvement in the Masters program, the majority of participants were employed as inside consultants in either public or private organizations; two participants were self-employed. Participants were recruited through an email invitation. They were contacted directly after they had indicated their willingness to volunteer in the project. One of the co-researchers acted as the interviewer of the participants.

Assessment Procedures

Case 1 was introduced to the activity of self-assessment in March, two months prior to the ending of the second semester of their first year in the HSI program. They were presented with various notions of assessment, such as traditional performance evaluation models and authentic assessment. After an experiential exploration of the contextual factors and the impact of various kinds of assessment, the learning community was offered the challenge of performing a self-assessment on the community as a whole, on its progress and effectiveness as a learning system. Students were to explicitly use the five dimensions of a learning organization as outlined by Senge (1990):

- *personal mastery*, i.e. an expansion of personal capacity in order to form a coherent picture of practice;
- *mental models*, i.e. reflection and inquiry skills to develop awareness of attitudes and perceptions that influence thought and interaction;
- *shared vision*, i.e. a learning community focus of mutual purpose [a collective shared image of the future];
- *team learning*, i.e. dialogue as the means to transform collective thinking, mobilize energy, achieve common goals, and draw forth synergetic wisdom and talent; and
- *systems thinking*, i.e. understanding and optimizing the dynamics of learning interdependency and personal and collective change.

Students were to collaboratively develop their own explicit, concrete criteria for each dimension, and were invited to focus on their journey and on how well the learning community fit the criteria. Students were given the opportunity to consult with faculty in the development of the criteria. They were to present their findings in the form of a historical review to the community, faculty, and teaching assistants on the final day of the final weekend of year 1. As

well, students were to submit a developmental analysis of the community's impact on their self-designed learning project.

Case 2, the HSI cohort from the following year, was introduced to the activity of self-assessment in October, two months into their year 1. Students were introduced to various notions of assessment, such as traditional performance evaluation models and authentic assessment, but were also introduced to the framework of dynamic assessment. After an experiential exploration of the contextual factors and impacts of assessment, the learning community was presented with the challenge of performing a series of dynamic self-assessments on the whole system and on its progress throughout the rest of the year. The community was to determine where it was in terms of its evolution, using Senge's (1990) criteria. In order to develop a norm for self-assessment, the members of the learning community were to define concrete, behavioral, and explicit criteria that reflected each of the five dimensions. Students were also invited to identify what they needed to become a more effective learning community, and were asked to determine those interventions and actions that would get them there. The cohort was allotted time each weekend when it met throughout the rest of the year to attend to the self-assessment process; one faculty member provided support and presence for this process. Each month, for at least two hours, the cohort would reflect upon the mutually defined criteria, and engage in a whole system dialogue about the community's functioning. Concrete manifestations of the 5 dimensions were shared; it was at this time that the leaning community members would suggest actions or enact interventions to promote realization of the community's potential. Two months prior to the ending of the semester, students were informed that the learning community was to present its history to the community, faculty, and teaching assistants on the final day of the final weekend of year 1. As well, students were to submit the impact analysis paper.

Both HSI cohorts used the five disciplines (Senge, 1990; Senge et al., 1999) as the dimensions of an effective learning community. These were deemed comparable to those called for by Patton (1999) in assessing the development of organizations, and therefore valid criteria for self-assessment. As well, students were familiar with the literature on systems theory, group development, and learning organizations; they also had experience in building the skills of process observation, data collection, and intervention based on collected data. In both cases, the members of the cohort were able to build on their knowledge, translating these competencies into praxis.

Data Collection Procedures

In order to detail the impact of the different self-assessment processes, members of the learning community were interviewed. They were asked to describe their lived experience within the learning community and to give meaning to their experiences (Kvale, 1996). Data was collected either through interviews or email responses to written questions. Five participants were interviewed face-to-face and one was interviewed over the telephone; two participants responded through email and one of these responses was complemented by a telephone interview. The one-time, face-to-face and telephone interviews lasted from 60-90 minutes.

The interviewing process was approached as a collaborative and interactive process, minimizing hierarchical relationships in favor of a joint enterprise approach (Oakley, 1981). This was facilitated by the fact that the interviewer is an alumna of the program, thus a peer to the participants. Using a semi-structured guide, the interview attempted to elicit stories about membership in the learning community since this perspective is reflective of participants' consciousness and perceptions (Vygotsky, 1987). The interviews focused on the participants' understanding of the concepts of learning community and assessment processes. Students were

asked about the impact of their experiences on their understanding of assessment and on their self-concept as learners and as members of a learning community. They were also invited to discuss how their experiences had influenced their interactions in the learning community; they were asked to share their own insights into the benefits and drawbacks of dynamic self-assessment, and how this experience had influenced their perceptions about organizational learning in their future practice. Questions attempted to elicit feelings, thoughts, intentions, and meanings. All interviews were taped.

Data Transformation

Data Transcription, Storage and Retrieval

The audiotapes were then transcribed and rendered into text for analysis. Since experience is central to understanding the processes involved, and in order to preserve the integrity of this experience (Clandinin & Connelly, 1994) and the fidelity of the data (Lincoln & Guba, 1985), the participants' exact words were transcribed, regardless of grammatical errors, repetitions or stutters. In order to prepare the data for coding, each transcript was read a minimum of two times (Bogdan & Biklen, 1998), with the researcher drafting memos of substantive issues and themes. Impressions of emergent motifs or processes were recorded in order to prepare the ground for analysis (Dey, 1993). The software, *The Ethnograph*, which supports hierarchical coding, text annotations, and advanced data search strategies, was utilized to store and analyze the data.

Coding

Coding was done using open and axial coding procedures (Strauss & Corbin, 1998), and was conducted at the level of units of meaning. Sometimes these units of meaning were quite short, while at other times, they were more extensive. Interview data were processed whereby: 1) the data were unitized in an ongoing manner by provisionally categorizing the responses that seemed

to relate to the same content into propositional statements (Miles & Huberman, 1994); and 2) rules for categorizing the data were developed and given a title which captured the essence of the rule for inclusion. Review of all the data was followed to check for consistency and relevance. This proceeded until the interview data fulfilled the four criteria proposed by Lincoln and Guba (1985): exhaustion of data sources, saturation of categories within the interview transcripts, emergence of regularities within the data, and overextension. Theoretical saturation (Dey, 1999) of categories was deemed achieved when no further properties or relationships were generated.

Data Display

A conceptually ordered display (Huberman & Miles, 1994) in the form of a mind map (Buzan & Buzan, 1993) was created to illustrate the core concepts, the subcategories, and their relationships. This type of graphic representation helped to prioritize, integrate, and illustrate the interplay of the core processes.

Results

Products: Major Themes Concerning Barriers

The data revealed 3 major types of barriers to building learning communities that were common to both cases. Figure 1 represents the interplay of the conceptual themes.

Individual processes. One major theme concerning barriers that permeated the interviews was the impact of individual processes, that is, those processes or dispositions that were anchored in the individual member of the learning community. These were further delineated into three major subcategories: emotional, cognitive, and behavioral. Individual emotional barriers were those barriers that created emotions or emotional climates that blocked individuals from engaging fully with the community.

M: *So, now, what do you feel hindered the development?*

Rachel: *... myself, fear... I think people, myself, were fearful, and... I think that what people are essentially, I think that's what hindered us... the sensation of fear... and having this extreme need to be heard and maybe blocking the process.*

And that need to be heard, because they were maybe not, for whatever reason, not being heard elsewhere.

Individual emotional barriers included a lack of openness, an individual's orientation to conflict avoidance, complacency on the part of the individual to work toward building a learning community, and the individual's need for control.

Veronique: *And then I just think personality differences...*

M: *And that was not resolved?*

Veronique: *No. And conflict style, you know, whether you were someone who avoided or whether you were someone who challenged or compromised. If you were someone who avoided, and we had a group of avoiders, then they weren't gonna raise a conflict, they weren't gonna talk about these things; they much preferred to just let it go and hoped and pray it goes away.*

Individual cognitive barriers included the mental model that learning is an internal, individual process rather than one that occurs in relationship, failure to see the teams as the arena for learning, and a lack of readiness to change engrained assumptions about learning.

HB: *It [time and exploration] allowed us to intellectually accept it [learning in relationship] and the different types [of] material that we covered, different perspectives that were being surfaced as we're discussing that material, allowed us to come to understand it at an intellectual level... It didn't get you in the guts, but it got you in the brain, so that personally, you know, I became more open as I dealt with the material.*

Individual behavioral barriers included a failure to experiment with new behavior, an inability to share leadership with other members of the cohort, a lack of collaborative conflict resolution strategies, a failure for the individual to take ownership and responsibility about the formation and development of the learning community, and an absence of risk taking.

Frank: *Why did we let things drag on? We should have been... Everybody knew it wasn't working. Why didn't we take responsibility for changing that?*

Structural processes. Structural barriers were those that were inherent in the structuring process of building the learning community. These were further partitioned into three major subcategories: those that concerned the task, those that were embedded in the cohort structure, and emotional support. Task structural barriers included a lack of clarity about the nature of a learning community, a loss of focus on learning in relationship, and confusion about purpose.

Frank: *I guess what hindered it is in the early stages... the confusion about what it is... we strove to try and be a learning community in the early SMLG [self-managed learning group] but we didn't understand what we were doing, and that was a hindrance but it seems like a very natural normal type of thing, whenever you start doing something there's a certain amount of just flopping around just trying to figure it out.*

Cohort structural barriers included time, a need for structured interactions, and a lack of a safe space in the community.

Rachel: *... no, no, because I think it really comes down to the community making that time available for itself... creating that space for things to happen.*

Emotional support structural barriers mainly focused on the need for individuals to have support in their own learning and change process from peers in the community, who were experiencing similar patterns of disequilibrium.

Felicia: *... like every check-in you found like... people going through so much. And so when you have that hanging in the air...*

Margaret: *It was more, uh, it was more, we should be able to talk to each other, we, it's like, we should be able to deal with our... our pink elephant about, uh, decision-making, and we should be... be able to share leadership, and... and... Every time I was hearing that, for me, I got the impression that, ah, I'm dealing with my struggles here (laugh) in the room, and, yes we will get there but can we, you know, can we just acknowledge that we're doing our best...*

Systemic processes. Systemic processes that were barriers to the building of a learning community were those processes that were embedded in the whole larger system. These were further delineated into three major subcategories: group dynamics, collective processes, and power relations. Group dynamics were those processes that are common to most groups' developmental trajectory (Kass, 2004) and included competition, dependency / counterdependency and fight / flight (Bion, 1961), subgrouping, covert processes, a lack of cohesion, and norm violations.

John Smith: *Not aware of the opportunity to do so (you don't know what you don't know...) which was caused by some dependency on the prof. But this aside, dependency is inevitable regardless of the situation whenever a grade of some sort is looming over one's head.*

George: *But, we focused on task, from my perspective as a... as a means of flying away from the issue of how are we forming this community, what does it mean to us, what do we want from it, you know, what are you doing that bugs me, what am I doing that bugs you. Those processes, those maintenance issues; we used the task as a means of flying away from that.*

Collective processes included a lack of connectivity, a failure to process, debrief, and use the tool of public reflection (Raelin, 2000), the primacy of external rewards (grades) over learning, and not valuing or building on diversity.

George: *Some members are almost obsessive about grades. I guess that it is directly related to personal values. Some group members would contribute almost nothing of themselves during difficult group discussions. I would see these same people hand in massive papers and get A or A+ as a grade, and think...how can this be? Is the goal the paper or the experience? Again, this relates to value differences. My rather convoluted point is that some members, fearful of grades, would not [be] open to experimenting with different approaches to the curriculum.*

Power processes were those that had to do with the distribution and equalization of influence and influencibility within the cohort and were mostly focused on tensions about competence and control issues within the community (Schutz, 1984).

HB: *[The cohort] for a long time did not come to grips with issues of power, people's comfort level, level of engagement, uh, and we were I guess working, focusing on course work, and the external, you know, what the professors think, you know that sort of things, and then, you know, then that messy process of developing comfort, the level of trust, the ability to communicate, to share leadership, uh... all of those issues, aren't coming around. Getting there is not a very neat circle or process...*

Process: Differences Between the Two Cases in the Formation of the Learning Community

During the analysis of the data, we were particularly aware of the difference in the "talk" about the community and the impact of assessment between the two cohorts. Further examination and analysis reveal differences along the five dimensions characterizing a learning system (Senge, 1990; Senge et al., 1999), and these were used as sensitizing concepts (Blumer, 1954; 1969) in the analysis.

Mental models as inquiry around awareness of attitudes and perceptions that influence thoughts and perception. In case 1, the talk, particularly around assessment focused more on traditional notions of deficits and on learning as a solitary activity.

Frank: *... seeing what we are doing... seeing if I am doing a good job or not such a good job. Ah, seeing if there's something I need to tweak.*

Felicia: *I'm a very, like I'm more of a reflective learner and... and I work things out a lot myself...*

Within case 2, the focus of mental models was on capacity and capacity building. This suggests that the format of assessment had an influence on the mental models of the cohort members regarding learning as a relational activity.

Margaret: ... *it means, uh... uh... being capable of saying "From there to there... we did so many steps. Uh... we achieved so many goals, or parts of goals." ... It's also for me, when I hear assessment... "Where we are now... from there, what do we do?"*

HB: *The purpose of the community is as a support system in learning, covering different topics but more the process of how we learn.*

Metaphors are perhaps one of the better indications of an individual's mental model. Metaphor in this context is the use of figurative language that suggests private representations organized into an image (Lakoff & Johnson, 1980). Practitioners tend to have well-organized schema, many of which are encoded as metaphoric images (Pressley & McCormick, 1995) which guide their practice (Calderhead & Robson, 1991). The metaphors from the participants in case 1 tended to focus on the individual within the system.

Frank: *I'm the cog that fits well into this machine, which is doing this task.*

The participants in case 2 tended to use a metaphor for the entire system, not differentiating its parts, but seeing the whole.

Rachel: *And that I really saw self-assessment in our conversations around the code of ethics. And how we wanted to do the tree, and the tree that was manifested in ... [the presentation of the findings]. There was a tree, hum, they wanted... we wanted to actually visually demonstrate... in a tree. So, there was like ah, the values at the root, and there was the general purpose of the trunk, and then there were all, and the leaves were like other statements, and the sky meant*

potentiality. And that symbol manifested itself in [the presentation of the findings] where we drew a tree and attached things to it.

Systems thinking as the development of interdependency that shapes whole system changes.

Participants from case 1 tended to value leadership, that is one person taking charge, and leading the group out of difficulty.

Frank: *Well, I did it... I spoke up. I'm... I'm the one who spoke out around shortening check-ins.*

Participants in case 2, on the other hand, pointed to the interdependency between leadership and followership, noting that the community could not evolve unless these two were co-existent and in balance.

Rachel: *And... and we were willing to say, yeah.... like you're a facilitator; but help us focus. I think that was necessary. And people followed instead of everyone moving. And the followership was important I found that was so... whoever played follower was congruent and that there were leaders that emerged based on a given task.*

Team learning as the transformation of discussion into collective thinking and mobilized energy. In case 1, participants did not use the community collective dialogue processes in order to create and shape insight into team learning. Members of this cohort reported that they needed to check perceptions, safely, in dyads and triads, outside of the learning community proper. This cohort failed to use the learning community as a sounding board.

Felicia: *Yeah, for me, and different kinds of dyadic relationships, so you know, there was one relationship in particular... I share more with her than I have probably with anybody. But there were other members of the cohort who I would talk to only about certain things.*

Participants in case 2 tended to focus on those processes that promoted collective thinking, e.g. dialogue, as important dimensions that increased as a result of the use of ongoing dynamic self-assessment, and they pointed to these processes as those that moved the community forward.

HB: *The aspect of the instruments... and the other dialogues, the conversation and feedback; formal and informal groups, I think they were key towards leading the community to where it is now. 'Cause, I mean, it's all about sharing, it's about being open. It's all about understanding other perspectives and that sort of thing. And the only way that we can really be sure that's happening is to have, is assessment back and forth, you know. Developmental sort of things. I mean in terms of how the program develops, I don't even know but as a community it develops through everything that the community goes through.*

Shared vision as collective mutual purpose. Members of the cohort in case 2 tended to identify many more benefits of being in the learning community, and they recognized the value of ongoing self-assessment. Many of these benefits were benefits to the system, rather than solely to the individual. As well, this cohort built their mutual purpose on diversity.

HB: *So, that decision, that commitment to get fully involved, to stand up for what we believed in, to be willing to have conflict, to be willing to understand different people's perspectives, and to be able to respect the idea that people within whatever cohort or the smaller groups could have two different perspectives, could decide to be true to them, and still work together even if those points of view were not alike...*

Personal mastery as expanding personal capacity. In both cases, participation in the learning community, and the tool of assessment contributed to a sense of personal mastery. The difference, however, was in the purpose for the mastery. In case 1, participants' talk focused more on individual competence.

John Smith: *Yeah, that was my one time I got to really, uh... [laughter]*

M: *Shine?*

John Smith: *Show my stuff. There were other times I got to move the group forward. I got to use myself in that regard. That happened every time we'd get together... That's one thing I'm able to do is to move it forward, move the group forward.*

In case 2, the point of gaining mastery was to further serve the community as well as to explore one's potential.

Rachel: *The feedback I got, was that I helped bring the whole creative aspect. I... I among many others. But I will say that I've always wanted to be very creative with the community, and felt that, that wasn't happening and that... that the community was finally ready when the need was to be creative.*

Discussion

The results concerning barriers to the building of a learning community are supported by the literature that suggests that individual factors (Davies et al., 2005) and organizational structures (Elkjaer, 2001) can contribute enormously for the failure of a learning community to thrive. In addition, barriers, which are inherent when groups of people work together, are also powerful forces that hinder the evolution of an effective learning community. This suggests that a professional education classroom that wishes to transform itself into a learning organization must address these barriers in multi-layered ways. The data also suggests that the mental model of learning as an individual, internal, and solitary activity contributes to the failure of students, and individuals in the workplace, to see the value of collaboration and learning in relationship (Davies et al., 2005). In fact, it has been observed that generally organizations decided to institute learning communities within their structures without addressing the inherent barriers their own processes encumber (Elkjaer, 2001). Wishing for or dictating the creation of a learning community does not make it so.

Dynamic Assessment as Intervention

The ways in which the members of the cohorts spoke about the learning community, and self-assessment, were qualitatively different. Participants from case 2 suggested more adherence to Senge's (1990) dimensions that have been used to describe learning communities than those in case 1. Though individuals and experiences are different, this indicates that dynamic self-assessment may be one influential way of promoting a learning community. In general, dynamic assessment has been conceptualized as intervention as well as a means of measurement (Sternberg & Grigorenko, 2002).

Therefore, the intervention of using dynamic assessment with case 2 can then be construed as an intervention into the system, inviting the cohort to view the learning community through Senge's 5 faceted lenses, while there is still time and space to modify and shape the system. As well, the intervention then becomes the scaffolding process (Greenberg, 2000) for traversing the zone of proximal development, since an inherent consideration of the assessment was the question "What do we need to further develop the community into an effective learning community and how will we do this?" In this way the assessment-as-intervention included the "how", and not just the "what", a key feature of dynamic assessment (Elliott, 2000).

In addition, the mental model of learning as internal and solitary may force an overemphasis in the mind and in actions of people on personal change, rather than organizational or community change (Elkjaer, 2001). The use of the 5 dimensions and the ongoing assessment along those dimensions provided a context for the cohort to continually confront the core problems of learning communities, and to develop ways of shaping its effectiveness and evolution on a system level. This included a particular emphasis on the dimensions of mental models (their implicit conceptions of learning in community) and the concept of team learning.

Conclusion

Authentic learning communities are challenging to build. If one *also* takes into account building in an "awareness" on the part of the community to monitor its own effectiveness and to take steps to enhance its functioning [an expectation in the world of organizations], an added layer of difficulty emerges. But with this difficulty comes opportunities to allow members of learning communities to become self-directed, self-managing learning systems, and transform themselves into thought collectives or thought communities (John-Steiner, 2000). As illustrated in this inquiry, a continual confrontation of the core characteristics of a learning community by the participants may be necessary for it to become a reality (Elkjaer, 2001). The use of dynamic on-going assessment can prod a community to face and resolve these challenges more effectively on an ongoing basis, allowing for the exploration and utilization of the full potentiality of the learning community.

Frank: ... *there's a learning there, there's a real big learning being a human being in a community.*

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Figure 1. Themes concerning barriers to building learning communities

