"Being There" - Building Productive Scholarly Teams across Distance and Over Time

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Abstract

In response to the projected shortage of physicians and the needs of traditionally underserved communities, medical schools are opening regional medical campuses (RMCs). However, faculty members on RMCs face unique professional development issues, such as lack of access to distant university resources and colleagues. At the same time, access to user-friendly technologies that support virtual communities, asynchronous and audio/visual synchronous communication, screen share features and inexpensive artifact storage has expanded. The authors explored the viability of using these technologies to establish and maintain a virtual community of practice (CoP) for medical educators. We use Tuckman's four stages of group development to describe the evolution of our virtual community and provide tips for building virtual CoPs. Each current member of the community completed a short answer survey modeled after Brookfield's critical incident questionnaire. We include applicable quotes that highlight members' experiences in the community from charter members and members who joined the community later in the formation process. Technologies can support productive virtual communities and prescribe them as viable options for addressing the unique needs of faculty at RMCs or for faculty who could benefit from establishing a cohesive, productive professional network beyond their home institution.

KEYWORDS: Community of Practice, Web 2.0, group development, virtual communities, virtual groups, professional network.

Introduction

"Being on a rather isolated regional campus, at an institution that has not had a strong educational research program, I was instantly interested in the group and how I could learn about using distance collaboration techniques to help round out my research community."

One outcome of the Association of American Medical Colleges (AAMC) recommendation to increase student enrollment in undergraduate medical training[1] has been to boost student enrollment in already established programs and/or expand current training programs to regional sites.[2] While deploying a regional campus model is not without challenge, positive reports of student performance and noted

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additional benefits suggest that regional campuses represent a viable option for increasing student enrollment and addressing physician shortage needs.[2-4]

The AAMC Group on Regional Medical Campuses (GRMC) recently defined regional campuses as "campuses of medical schools at which a portion of pre-clinical or clinical education of medical students occurs...on a campus that is separate from the main medical school." [5(p. 1141)] Though associated with the main medical school site, the mission of RMCs is unique to their setting. Curricular resources are often different from the main campus and delivered by a separate faculty located at the RMC.[6] Faculty at RMCs are busy, fulfilling multiple roles with varying levels of interest and experience in research.[7,8] Still, faculty in academic medicine are expected to demonstrate scholarly productivity.[7,9,10] However, research productivity for regional campus faculty can be suppressed due to lack of time, inadequate research infrastructure and inherent difficulties with providing faculty development to regional sites.[7,8]

In their investigation of associations between faculty productivity and personal and institutional variables, Bland and colleagues described the association between high faculty productivity and being in a department where there are clear expectations regarding faculty research.[9] This association is problematic for faculty at RMCs where teaching is often the primary focus for faculty recruitment and development, and there is little to no focus on research.[2] However, Bland and colleagues also reported a negative association between high productivity and belonging to a well-developed network within a department. In contrast, they reported associations between high productivity and regular communication with an active professional network of colleagues outside of the institution, suggesting the potential for increased faculty productivity through participation in active professional networks beyond one's institution.

Futurists predict that in time, one outcome of the increased use of new technologies is the erosion of the boundary between a 'real' and a 'virtual' self. If these technologies are mastered, they will allow for virtual interactions that nearly mimic those we experience in 'real' time. They can challenge the barriers of distance that have historically limited consistent access to professional relationships beyond one's institution. We, the authors, represent medical education professionals who attempted to harness these technologies to establish and maintain a virtual community of practice (CoP). A CoP is "a set of relations among persons, activity and world, over time and in relation with other tangential and overlapping communities of practice." [11(p. 98)] CoPs are characterized by "sustained mutual engagement in practice, pursuit of a joint enterprise, and a shared repertoire of resources, experiences, stories, and tools." [12(p. 32)]. Driven by our mutual interest, we formed Collaboration at a Distance for Medical Educators (CD4ME). Charter members and subsequent members of CD4ME include physicians, psychologists, faculty developers, professional educators, basic scientists and student affairs professionals in academic medical institutions representing both allopathic and osteopathic programs in eight states across the AAMC Southern, Central and Western Groups on Educational Affairs. The purpose for authoring this manuscript is to provide our experience with CD4ME as an outlet to overcome time and distance barriers for scholarly collaboration and provide tips for faculty members at RMCs who wish to establish similar collaborations.

The evolution of CD4ME

Sustainable, productive group relationships are rarely spontaneous phenomena. They require time, effort, attention and commitment. Tuckman described group formation as a sequential process that includes four stages: forming, norming, storming and performing. He noted that the purpose, duration and tasks associated with a group could impact how it experiences the four

stages.[13] Tuckman's stages of group development accurately depict our own experiences in developing CD4ME and have adopted it as the framework for describing our evolution as a productive virtual team. We integrate applicable statements from CD4ME members who voluntarily reflected on their personal experiences of the group via a short answer survey modeled after Brookfield's critical incident questionnaire.[14] This exercise allowed members to consider the CD4ME interactions that inhibited or disinhibited their personal commitment to or engagement with the group. Based on the lessons we learned, we provide tips for building a virtual community of practice which can be used by professionals on RMCs to expand opportunities for collaboration, scholarship and community.

Forming: In forming stages of development, group members work to determine their place in the group, understand the patterns of behavior particular to the group and obtain direction from group leadership.[13]

The CD4ME group originally formed as a result of one author's (GEC) AAMC Southern Group on Educational Affairs (SGEA) member-at-large project that explored web-based solutions for establishing peer-to-peer networks. The seven authors from six sites are the current membership of CD4ME. Three of the authors are charter members of the group, and the remaining members joined in subsequent years. Since our inception, the total membership included up to eight (representing seven sites) and as little as five (representing four sites) members. CD4ME's original purpose was to explore the viability of building a sustainable virtual community of practice that would allow medical educators to participate in both simple (idea/resource sharing) to complex (scholarly pursuits) collegial interactions. The initial task of CD4ME was to identify preferred technologies that would afford optimal authenticity for group interactions. In selecting the technology, it was important to utilize solutions that were not 'institution specific' and were accessible by anyone, anywhere and at any time. Under the initial leadership of GEC, the first

agenda was to determine frequency of meetings and a regular day and time to meet. This was somewhat complex given the varied schedules and time zones of CD4ME members, but the group eventually identified a regular time each month for meetings. In order to anchor the meeting time in group members' schedules, calendar invites for the year were sent to all members. In initial meetings we explored various online collaboration tools, such as screen sharing, using the chat and additional features that allowed members to express their personalities. These activities introduced spontaneity and humor early in our group interactions, characteristics our group have embraced and sustained over time.
From a charter member:

"I suggested that we use Google Hangout for its convenience (no need for institutional support) and cost (free) and ability to support video calls as the centerpiece of the collaboration technologies. The first several monthly meetings consisted of getting to know each other, figuring the nature of our shared interests, and getting comfortable with the technology."

From a member who joined later:
"I've always spent a great deal of time in relationship building before asking to be part of something, and here, it was quite the reverse. I was suddenly going to "belong" to a group of folks I didn't really know. Given my circumstances in my institution, however, I felt like I had to try something new. I wasn't sure how to go about it; how to mix the business with the fun, over the internet,…but I gave it a shot."

Storming: In this stage, the group attempts to define their structure, roles, rules and evidence of short and long-term productivity. Individual beliefs, opinions and preferences are challenged. Effective group process requires consistent negotiation related to equity in verbal space and group member interaction. Though typically unobservable, group members may experience friction as a result of participating in these group processes. However, if group dynamics proceed appropriately, the level of internal conflict is assuaged by both the benefits of and commitment to the projected purpose of the group.[13]

Since the goals of CD4ME were yet to be firmly established, early CD4ME meetings seemed directionless at times as group members shared their reasons for considering membership in the group, their professional interests and what the potential promise of the group held for them personally and professionally. Group members still deferred to GEC for direction and purpose, and different members frequently introduced redirects to refocus the dialogue on what we wanted to accomplish in a meeting or as a group.
From charter members:
"Early on, we, as a group, violated the rules of group formation and process for distance groups. I generally do not recommend that you try this, but for several months, early in the group process we did nothing but meet, play with avatars and add-ons, and talked in an unstructured way about our challenges and ideas. I was worried that an online "greenhouse group" would fail, as some of the literature suggests that distance/virtual groups should have a clear direction and roles assigned early, less risk the group disbanding. We didn't heed this advice. We couldn't because, early on, we had no clear idea why we were doing what we were doing."

Norming: Cohesion is the primary characteristic of group development at this stage. Group members are able to manage the interpersonal and group dynamics in ways that contribute to productive group interactions. Group members regularly participate in meetings and correspondence, actively contribute to the group discourse and commit to tasks that reflect their interest or identified group needs. Consistent attendance, member participation, productive meetings, meaningful contributions and timely completion of assigned tasks builds trust in the group's ability to optimize the distributed intelligence of the group, function effectively and build momentum. This fosters creativity and continued engagement in group endeavors.[13]

For CD4ME, a consistent core of group members regularly participated in meetings and other correspondence. As different members of the group recommended projects, we determined viability, set goals, delegated tasks and deadlines, established commitments and went to work as a group. These steps influenced group norming as more firm roles were established regarding leadership, and the process of virtually managing projects was determined. Specific technologies supported the group's development at this stage. CD4ME formed an online community to create a virtual space and build a member network. The group also created project specific cloud-based folders, which afforded members the ability to synchronously view and edit work products. The need to keep a running record of group goals, decisions, delegated tasks and deadlines became evident at this stage to keep the group's energy focused between and during meetings. An online document was created for CD4ME to serve as a running record of such items, and two group members spontaneously took the lead in capturing this critical information during meetings.

From charter members:
"... early on, even though I proposed the group, I predominately served as the logistical (techie) and meeting coordinator role. This did create problems,

but I believe that it did allow others… to eventually step into the leadership void and take over when we had specific initiatives to complete."

"When it became clear that I could not find a time to move the CD4ME meeting to suit everyone else's calendars, I suggested that I continue to participate asynchronously. During the last few virtual meetings before I left the video environment, I began to experience what I was soon to be losing: comradery, connectedness, collectiveness, and better understanding (through verbal and nonverbal communication). I truly believe that the video presence using real time audio and motion video helps with building understanding through enhanced communication, enculturation, and commitment that I never experienced through asynchronous emails or teleconferences."

From members who joined later:
"Immediately joining the group I volunteered to take notes (on Google Docs) so I could get to understand the dynamics, get to know each person, and learn about the topics being discussed."

"It is always effective when team members know exactly what they need to do by certain due dates. It is very helpful to assign each member certain tasks to be completed by the agreed upon due dates."

"That shared interest has been more than enough to bridge the gap between us, and to help me get through the times when I didn't know if I was fitting in. It took about 4-5 months, but I finally figured out how to contribute in what felt like meaningful ways to me."

"Stepping up to lead a portion of one project and feeling like I was contributing to the group through service and action. I do not need to be lead all of the time as it is distributed - it was more the feeling of pulling my weight to give back to the team. "

Performing: Unity, interdependence and productivity are the distinguishing feature at this stage of group development. The group completes tasks together in sub-groups or as independent members. Leadership and group roles are flexible depending on the group's goals, resources, deadlines, member interest and availability. Group members enjoy a sense of belonging and identify as members of the group.[13]

CD4ME has been an active, productive, working group for four years. Despite time differences, job changes and shifting personal and professional values, the group continues to meet regularly to select meaningful projects, define workable plans of action and achieve selected goals. Different group leaders emerge and group members step into different roles depending on the shifting group agendas. Members of CD4ME have benefitted professionally from the productivity of the group. To date, the scholarly activity of the group includes one publication, three presentations at regional conferences, three presentations at national conferences and a successful attempt to present at multiple regional conferences simultaneously (see appendix for a complete list). The benefits for members of CD4ME are not limited to the tangible professional achievements; all members enjoy the benefit of connecting with professionals beyond their local circle that CD4ME affords. This has been especially valuable to CD4ME members who have limited access to like-minded professionals in their local professional setting. For these members, CD4ME ameliorates professional isolation by providing a sense of belongingness to a meaningful professional group.

From Charter Members:
"The things I've noticed that I enjoy with the group are the humor, group members' commitment to the kinds of things that sustain a group, such as regular attendance at meetings, completing delegated tasks within established deadlines and the group's ability to process tangible and intangible elements of group process productively."

From members who joined later:

"(The group) Working together to accomplish goals, accepting roles, affirming email about projects (I'm in!) laughing at my jokes."

"I also like when members bring up new references, concepts, models that impact or are relevant to our work."

Building a successful virtual, collaborative and productive professional network

We assert that CD4ME is a model of a successful virtual, collaborative and productive network. CD4ME members have established a record of collaborative scholarship attained through active participation in our virtual community. We are working on new projects and discussing expanded membership. In this section, we share three factors we have identified as contributing to our longevity and success: 1) the characteristics of our members, 2) the effective management of group dynamics and processes and 3) our 'virtual presence'.

Member Characteristics: Persistence, flexibility and conscientiousness are the primary member characteristics that CD4ME associates with our success. As members, we have persisted through the processes of virtual group formation. We learned new technologies and navigated the transitions of new members joining the group and members temporarily or permanently disengaging their online presence.

CD4ME members are able to flexibly adopt either leader or follower roles depending on personal goals and the needs of the team. High levels of ego strength translate to a limited need to be right, to lead or to have one's own way in processes and decisions. These characteristics allowed us to successfully navigate the conflicts that occurred when the virtual community's goals were not aligned with our individual institutional goals and missions.

CD4ME members are conscientious, realistic and honest with themselves and the team regarding what they can contribute to a team project given other commitments and deadlines.

They practice and maintain the values of personal ownership, agency, follow-through and collective achievement in their virtual relationships.

Group Dynamics and Processes: We recognize that effective processes for one group may not be effective for another group. However, members of CD4ME agree that our productivity is a result of the group's values including a collectivist perspective, flat or flexible hierarchies and a shared sense of purpose.

Since virtual CoP members are not in the same organization, their roles must be constantly renegotiated. CD4ME members view our group as a flexible team of equals. The function of membership is to serve group needs, goals or deadlines. This requires acceptance and flexibility with decision-making processes, shifting authority and variability in group members' responsibilities or role assignment, in task delegation and work effort. Focus on long-term tasks, like a literature review, or more immediate tasks, like preparing a conference proposal, creates a shared sense of purpose that generates sustainable momentum. All members need to be willing to take a leadership role. This can occur organically, as it did for CD4ME, or more formally.

Virtual Presence: As individuals increasingly engage in virtual interactions, the boundary between a 'physical' and 'virtual' self grows increasingly blurry. Most CD4ME members had not met face to face until presenting CD4ME generated scholarship at a professional conference. We had to select and co-manage a co-owned virtual space so that the sustainability of the group would not be overly dependent on any one member and/or the features of, or accessibility to, any one institution's technologies.

Our primary interactions are via email, text, our online community, video conference, online documents and folders. All CD4ME members had to learn how to use the technologies needed to access and operate in a virtual world and to synchronize our interactions with a variety of communication and collaboration tools including audio, video, chat, screen sharing and document editing, as well as access from a variety of

hardware. We use chat to share links to resources without disrupting the primary conversation. Screen sharing enables all members to synchronously view the artifacts under discussion. While one or two members may take the lead in online document editing, all members are able to edit and view edits of artifacts under discussion in real time.

CD4ME meetings are most productive when all members have audio access to the meetings. Since all CD4ME members have access to resources of interest to CD4ME projects, members who join a meeting using only audio can access artifacts under discussion in our cloud-based folder. CD4ME meetings are less productive when members have only video access. While they can see the artifacts under discussion, they are dependent on the chat feature for sharing their responses, ideas and feedback, making the process cumbersome and time consuming.

CD4ME members have learned that archiving the synchronous components of CD4ME interactions and applicable artifacts is critical to maintaining momentum from meeting to meeting. Having one or more members consistently serve as the group scribe ensures that important decisions, task delegation, deadlines and goals are recorded on a shared document that all group members can access as needed. This is especially useful if group members have missed a meeting and provides a reference point in cases when the group purpose or focus derails during a meeting.

Discussion

Lack of resources and faculty isolation are barriers to medical education research and scholarship on university campuses. Isolation can negatively affect faculty development since there is limited intellectual stimulation, education, formative feedback from peers and motivation derived from momentum generated with peer collaboration.[15] These factors can be particularly debilitating for RMC faculty who may experience unique isolation as a result of distance from the main campus and comparatively different curricular missions, roles and resources from faculty at the main campus. Some of the CD4ME

members have or are currently working on regional campuses. Some have experienced isolation due to geographic separation from professional colleagues. Other members have unique scholarly interests that make it difficult to establish effective collegial collaborations at their home institutions. Our experiences suggest that virtual CoPs can serve as replacements for or supplements to productive professional relationships at one's home institution. Virtual CoPs can potentially address both faculty productivity and faculty development concerns for RMCs, especially when the mission, curricular resources and faculty are different from the main campus.

As the CD4ME group formed, members experienced challenges communicating with powerful but more complex media, establishing clear common goals, establishing an online culture and clarifying individual roles. Once these were established, the group's productivity and satisfaction increased and helped sustain its growth and prevent departures. As members subsequently joined, their integration was enhanced and accelerated since group goals, norms and roles were better established.

One area of future scholarship regarding online collaborative communities is better elucidating how the interface of technology and human interaction hinder or help sustain such collaborations. One fact is certain: since the evolution of Web 2.0 technologies and social media, collaborations such as CD4ME are becoming viable substitutes for face-to-face interactions. The feeling of 'being there' establishes a social presence and helps foster both commitment and belonging. As one CD4ME member wrote:

"From 2002-2005, I participated with an online distance Master's program that predominately used asynchronous message boards and the rare online meeting using audio only and uploaded slides. I found the commitment of students insufficient to maintain meaningful discourse and I really did not feel I was part of a group. I never saw them in action so they never seemed real to me. After I joined CD4ME, I feel like I am part of a team of colleagues whom I really enjoy working with and

I have a strong sense of responsibility to them. I can see them, watch them, and read their ideas in real time. I appreciate who they really are and what they are all about. The experience has changed my views about working across time and distance barriers."

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Appendix
CD4ME Publications/Presentations

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