Developing and Sustaining a collaborative research relationship among the Laboratory of Comparative Human Cognition, the Escuela Normal de Educación Primaria de Yucatán, and the University of Yucatan.

Abstract

The development of inter-institutional relationships aimed at enhancing educational environments is a central goal for much of the research that was studied in the Distributed Learning seminar. The current joint research project between the Laboratory of Comparative Human Cognition (LCHC), the University of Yucatan, and the Escuela Normal de Educación Primaria de Yucatán (ENEPY) applies this goal in an international context. The collaboration among these institutions is geared toward the development of pedagogies that incorporate materials from Mayan culture into the curricula of Yucatec primary schools. This is done in an effort to provide the Mayan children who attend these schools an additional familiar resource for enhancing their education. In this paper I will apply concepts from Cultural Historical Activity Theory and Organizational Learning in an effort to address current and potential problems concerning the development and sustainability of the LCHC-Yucatan project.

Introduction

Nearly all of the research examined over the past quarter in the Distributed Learning seminar addresses ways to provide better learning environments for kids and adults as well as ways to engage in and sustain the types of research that support these learning environments. Furthermore, most of the research groups we “visited” invest in a University-Community relationship as the basis for creating these improved learning environments. This is true of the Laboratory of Comparative Human Cognition’s (LCHC) Fifth Dimension model; CREATE’s charter school projects; the MUVE project at Harvard; and the Change Laboratory work conducted by the University of Helsinki’s Center for Activity Theory and Developmental Work Research. The core activity each week during the seminar meetings revolved around the task of elucidating the philosophical and methodological points of convergence and divergence across the different participating sites. It was through these discussions that seminar members worked to determine how these groups could initiate and sustain collaborative relationships.
In this paper I will engage in a similar exercise; however, instead of examining the theoretical and methodological complementarity across the different sites, I will examine how the approaches employed by some of these sites can help in thinking through some of the theoretical and practical issues entailed in the development of a new international research site. This new site, located in a Mayan village in the state of Yucatan, Mexico, forms part of a joint pedagogical research project between the LCHC, the Escuela Normal de Educación Primaria de Yucatán (ENEPY, a teachers college for primary school instructors), and the University of Yucatan. As a member of LCHC, and as a graduate student hoping to do field work examining the relationship of culture, play, and formal education, I am invested in the success of this project. The project is designed to do exactly what most of the participating sites in the Distributed Learning seminar already do: develop better learning environments for children and adults through collaborative research relationships between universities and local communities. In light of the fact that the project is in its beginning stages, I have chosen to focus my discussion in this paper on approaches from the seminar that address the importance of designing projects for sustainability. These are the perspectives of Cultural Historical Activity Theory (CHAT, represented by the work of Yrjo Engestrom and Mike Cole) and Organizational Learning (represented by the work of Bud Mehan).

I will begin by briefly describing the project. Through this description I will highlight some of the obstacles that the project has encountered and may encounter in the future. Following this discussion I will address ways in which we may apply CHAT and Organizational Learning to think through issues concerning the object and method of analysis. In conclusion, I will discuss the current state of communication among members of the project, and how this relates to the sustainability of the project.
The joint LCHC-Yucatan project is centered on an effort to reform the school curriculum of a group of primary schools in a Mayan village located in the state of Yucatan, Mexico. The project is currently underway in this village, Chacsinkin, which is located near the center of the state of Yucatan, southwest of the capital Merida. The goals for this project as they are stated in the research proposal submitted to the funding agency are:

1. To build a long term working relationship between UCSD and La Escuela Normal de Educación Primaria de Yucatán in order to develop basic and applied research projects specifically in the area of primary education.

2. To develop proposals and compatible pedagogical and didactic skills with these theoretical perspective and applied methodologies that will encourage Mayan children to more effectively achieve the primary educational standards of Mexico.

3. To understand the cognitive processes of Mayan children of the Yucatan through a study of educational anthropology applying the theoretical perspective of Cultural Psychology.

4. To exchange experiences among investigators, undergraduate and graduate students that will contribute to the understanding of the crucial role of culture in primary school educative processes.

Several researchers and institutions are participating in this work. On the Mexican side of the project there are two institutions: ENEPY and the University of Yucatan. The core group of researchers come from these institutions: eight student-teachers from ENEPY and their supervisor, Juan Carlos Mijangos (the co-principal investigator) from the University of Yucatan. On the U.S. side of the project there is the LCHC (Ginny Gordon, Mike Cole, and myself), and a group of consulting professors from Northeastern Illinois University, the University of Chicago, and the University of Arizona.
This past August, the student-teachers from ENEPY began to conduct ethnographies in Chacsinkin of everyday activities in the primary schools in Chacsinkin. Furthermore they are conducting ethnographies of the home life of the students who attend these schools. The information gathered from these ethnographies will form the basis for the development of new pedagogies that will incorporate aspects of the local Mayan culture in ways that will (hopefully) enhance the educational experience of the students in Chacsinkin. This work will continue through next spring. Once this stage of the project is complete the students will use the data they collected to produce a final project for their teaching certificate. In addition to conducting their research work in the village the student-teachers are also working as teachers in the primary schools where they are conducting the ethnographies. This service is one of their requirements for obtaining their teaching certificates.

Obstacles

The goals outlined in the previous section have thus far been somewhat difficult to assess and, in one case, sustain. The first goal is currently in the processes of being redefined. The project was initially set up to be a joint collaboration between LCHC and ENEPY only; however, a serious conflict arose between Juan Carlos and administrators at ENEPY. As a result, Juan Carlos, who was originally affiliated with ENEPY, resigned from his position and joined the University of Yucatan. This happened a few months after the project began, and so, not knowing how the funding agency for the project would react to this change, Ginny, by phone and by email, worked to ensure that ENEPY and Juan Carlos reached a compromise that would not threaten the life of the project. Fortunately, the funding for the project was tied to the investigators so that in this circumstance the money followed Juan Carlos when he moved to the University of Yucatan; however, the student-teachers, who remained affiliated with ENEPY, were stuck in the middle.
They needed to continue their work in Chacsinkin in order to obtain their teaching certificates and the only way they could do this was by working with Juan Carlos, as he was the only researcher in ENEPY who was familiar the project in Chacsinkin and, more importantly, he was the liaison between ENEPY, the student-teachers and the community, as he has worked in Chacsinkin for more than 10 years. The administration at ENEPY, despite the bad blood, had to compromise and allow the students to continue their work with Juan Carlos.

There is interdependence among the four project goals. Without one, the other three disappear. The surprise resignation of Juan Carlos momentarily threatened the first goal. This resignation, it seems, was the result of a miscommunication between ENEPY and Juan Carlos. The impression that the project was about to fall apart as a result of a failure in communication got me thinking about the importance of communication for the project as a whole, and in particular the importance of communication for the remaining three goals. Although the ethnographies that will form the basis of the pedagogical reforms (goal #2) are underway, it will be some time before the path from data to pedagogy is drawn and therefore sometime before we know whether or not the second goal has been reached. I am primarily concerned in this essay with the third and fourth goals. Why?

To begin, it is through the exchange among the students, researchers, teachers, families and other participants that the necessary shared understanding of project methods and goals will develop. At one level, both me and the student-teachers in Chacsinkin will adopt and adapt a CHAT approach to the documentation and analysis of data in the field. On another level, I hope to learn from these students, researchers and community members about the different cultures that inform their interpretations of the project. In a sense, the exchanges among me and the other participants about the research will reflect exchanges the student-teachers will have in the field.
while engaged in the research. Just like the student-teachers are dependent on the people of Chacsinkin for understanding the local culture, I will depend on these students to mediate my understanding of the same culture. Likewise, as I learn how to conduct ethnographic research, the teaching students may depend on me for a perspective on how U.S. institutions engage in this kind of work. Unfortunately, the work necessary to develop and maintain these mutual educational relationships has thus far been somewhat difficult to achieve.

This difficulty stems in part from three issues. First, and perhaps most crucially, there is the problem of maintaining communication between the research group in the Yucatan and LCHC. The second and third problems have to do with the issue of defining the methodological frame for conducting and analyzing the research in Chacsinkin: documenting and understanding each participant’s conception of the object of analysis, and, assuming some consensus is reached about the object(s) of analysis(es), understanding how to implement the different methods that will be appropriate for studying these objects.

**Defining the object and method of analysis.**

Of all the different projects and methodologies studied in the Distributed Learning Seminar this quarter, it is in the work of Yrjo Engestrom and Bud Mehan that we see the most overlap with the strategies and objectives of the Yucatan project. Like this project, Engestrom’s Change Laboratories and Mehan’s work with the Preuss and Gompers charter schools are geared toward mutual-learning between university researchers and educational institutions in the local community. Furthermore all three projects are designed to recognize and correct problems in the structure and content of educational environments in order to help students become more engaged in learning. Lastly, all these projects aim at increasing access to quality education by
underserved populations. How do the similarities across projects provide insight for thinking about the future direction of the LCHC-Yucatan project?

Before we can apply these theories to an examination of the potential trajectories of the Yucatan project, we must ask a few preliminary questions. First, although all these studies aim at improving educational environments for students, is the object of analysis the same in all three projects? Within each project, is the object of analysis the same for all those participating? Second, we must ask, as Bud Mehan did this quarter in his presentation, can principles from one part of an organization be useful to another part; can principles from one organization be useful in another organization? I will begin by addressing questions concerning the object of analysis.

**Object of Analysis**

In discussing the object of analysis, we must first distinguish between the object and the objective(s). By object of analysis I am here referring to the people, environments and practices that will be studied in an effort to achieve a particular objective. For example, in the Change Laboratory work of high school students in Finland the object of analysis for the teachers is, “the relationship between the students and the knowledge they are supposed to acquire,” (Engestrom, 2002). The objectives in this work vary according to the vision of the teacher. Engestrom and his collaborators documented a wide variety of complementary goals from increasing and improving current educational resources in the school to improving how the school is networked with the outside world.

If the goal is to improve education then being able to see the improvement requires observing changes in the object that reflects these changes, i.e. the students. The object of analysis is constrained by the objectives of those engaged in the research. Thus, considering the variety and distribution of participants in the Yucatan project (researchers and administrators at...
different institutions in the U.S. and in Mexico, primary school teachers, student-teachers, graduate students, families in Chacsinkin), it is important to keep in mind how each of these participants conceptualizes the object of analysis. Furthermore, it is also critical that we try to understand the relationship between this conceptualization and the objectives each participant brings to the project.

To begin, we could argue that the object of analysis for the primary school teachers in the Yucatan is similar, if not the same as that of the teachers in Finland: the relationship between the students and the knowledge they are supposed to acquire. However, we cannot say that the object of analysis is the same for the student teachers. Their focus is on developing a pedagogy that incorporates local culture, therefore their object of analysis encompasses the student’s relationship not only to the desired knowledge, but to the teachers who deliver this knowledge, and the parents who have a significant influence over the cultural and physiological development of their children. Moving a step further, anticipating that I will, for example, research the intersubjectivity among teachers and students in classroom interactions, the object of analysis for me would not only include the interrelationships between primary school teachers, students, and parents, but would also incorporate the interrelationship among all these participants and the student-teachers as well (not to mention my own relationship to all of the members of this group).

As we can see, the student-teachers, primary school teachers, and I have objects of analysis that share some of the same subjects (e.g. children, parents). The children at the center of the primary school teachers’ conceptualizations of the school as an activity system are the same children that I and the student teachers will be working with in order to answer questions about cognitive development. The parents I will be working with will be the same parents that the student-teachers will be interviewing in order to develop culturally relevant teaching.
materials. What differs from one researcher’s perspective to the next is not the subjects they are studying but the relationships among those different subjects. The kind of relationships that the researchers will focus on will depend on the objectives they have for their research as well as those objectives held by others involved in conducting research.

As Rosen and Mehan’s (2003) work reminds us, the educational objectives of researchers, teachers, and community members are not simply the product of problems that need to be solved locally. They emerge from a complex social process of constructing and negotiating meaning in concrete contexts. A large part of this process occurs through policy actions at the local, state, national, and, as we shall see in the context of the Yucatan project, the international level. These actions serve to “manage contested perceptions by focusing attention on some conditions rather than others and promoting a particular interpretation of those conditions. It is also a means by which powerful actors legitimate particular meanings, which acquire a sense of authority once they are solidified in policy,” (Rosen & Mehan, 2003). The situation in Chacsinkin is no exception; however, in contrast to the Preuss and Gompers projects, both of which represent responses to the institutionalized erasure of affirmative action policies in education, the work in Chacsinkin is taking place at time in Mexico when the Ministry of Education’s “theory of action”\(^1\) appears to support the type of intercultural curriculum reforms proposed by the Yucatec researchers. Indeed there currently exists as part of Mexico’s Secretariat of Education a National Coordination Group of Intercultural Education for the country which is interested in influencing the education of teachers towards an intercultural perspective.

Despite the strong support from the state for intercultural education, changing socioeconomic conditions in the Yucatan may impact life in Chacsinkin in ways that might lead

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\(^1\) “Theory of action” refers to the beliefs and interconnected explanatory structures that underlie educational leaders’ approach to instruction, curriculum, and the organization of schools (Mehan et. al, in press).
families in Chacsinkin to become apprehensive about the educational reforms that will emerge from the work of the project. Both Gaskins (2000) and Greenfield’s (1999, 2000) work document rapid shifts from agricultural subsistence to an entrepreneurial cash economy in Mexican Mayan communities. Greenfield’s work with Zinacantan Maya suggests that these recent economic shifts have radically changed the way children learn. Additionally, Gaskins documents how development of the Yucatan Peninsula has broken down barriers isolating Mayan communities from the larger Yucatec and Mexican Society. This has in turn increased for Mayans the perceived value of learning Spanish and of basic, formal education. Indeed, the Yucatan project has in part been predicated on fulfilling this need for enculturating children into Mexican, Spanish-speaking society using Mayan culture as a leg up. The failure to address this problem by the current curriculum is evident in the fact that Mayan children exhibit almost triple the national drop out rate and almost double the national rate of academic failure.

Returning to the discussion of objectives, if the Mayan parents in Chacsinkin hold as one of their goals that their children learn to speak Spanish, how welcoming will they be of a curriculum that might be seen as taking time away from Spanish language education? If in fact they have doubts about the project how will this affect the way they interact with the student-teachers, and other researchers who come to Chacsinkin? It is not unreasonable to expect that Mayan parents in Chacsinkin will carefully scrutinize the efforts of the student-teachers. Again, recalling Rosen and Mehan (2003), while the broader institutional (UCSD, Mexico’s Secretariat of Education) goals of educational reform and research serve as the foundation for the study in Chacsinkin, these same goals will likely have to be renegotiated if they conflict with the goals of community members in Chacsinkin.
In these negotiations of objectives between the different participants involved there is one set of goals that we can already point to as potentially disrupting the trust between the community and the researchers: the goals of UCSD. As Rosen and Mehan (2003) note, one of the consequences of the negotiations surrounding the creation of the Preuss School was an expansion of the definition of UCSD’s mission from the traditional, narrower definition of the university as primarily dedicated to cutting-edge research to one that incorporated a broader mission of social betterment that includes the improvement of K–12 schools and the enhancement of educational opportunity (Rosen and Mehan, 2003). As with the Mexican Secretariat of Education, the goals of the Yucatan project seem to overlap with those of UCSD. Despite this overlap however, in accepting the international institutional relationship with UCSD, the researchers in the Yucatan have had to carry some additional baggage for the university: the guidelines from the University’s Institutional Review Board.

The guidelines laid out by the IRB for creating human subjects consent forms fail to account for differences in receptivity to these forms across different communities around the world. In August of this year we submitted a series of consent forms that we felt struck a balance between Juan Carlos’ recommendations to keep the consent forms short and simple and the IRB guidelines. Although we have gotten assurances that the forms will be approved, it is now December and we’re still waiting. We have resubmitted these forms twice already, and each new version has caused Juan Carlos to express concern that these relatively lengthy and verbose forms may discourage the participation of the villagers, this despite the fact that he has worked in this community for over ten years.

The potential disruption of trust and rapport that IRB requirements pose on the flow of research and teaching activity in Chacsinkin hints at other potential problems of transplanting the
goals of one institution into a context that may have little or no relationship to the context in which these goals were originally developed. Thus far we have seen that there is significant overlap among the objectives of educational reform and the concomitant objects of analysis present in the work of CREATE, the University of Helsinki and the Yucatan Project. We have yet to examine how to translate the methods of analysis for these objects and objectives into a context that contrasts materially and culturally with those of the schooling environments found in Southern California and Finland.

**Method of Analysis**

Recalling the third goal of the Yucatan project (to understand the cognitive processes of Mayan children of the Yucatan through a study of educational anthropology applying the theoretical perspective of Cultural Psychology) we can see that this project has much in common methodologically with Engestrom’s Change Lab work in Finnish high schools. Indeed, considering the fact that the students will be taking classes in CHAT in order to apply this theory to their practice, it is possible to see these student-teachers as engaged in the kind of Double Stimulation approach employed by Engestrom in his Change Lab work in Finnish high schools (Engestrom, 2003). Double Stimulation refers to a method of restructuring the environment and practices of a person or group in order to exert a desired change in behavior. The method, originally developed by Vygotsky and Luria, is implemented by Engestrom in two stages. The first stage requires that the researchers collect ethnographic data in order to document the limitations and problems of the activity system that is the subject of the educational intervention. This data is then used to present to the participants in the activity system those practices that need to be changed in order for the transformation in behavior to occur. The second step in the
process involves introducing theoretical models to the participants so that they may use these as tools for making the desired change.

Although we can point to similarities between the methods being employed in the research in Chacsinkin and the method of Double Stimulation, there are some significant differences. Applying the Double Stimulation approach in the Yucatan context we see the community of Chacsinkin, its primary schools, its teachers, and students, as the activity system that the student-teachers are aiming to reform. If we were to take the example of the Finnish schools and directly apply it in this context, it would be the primary school teachers in Chacsinkin who would be the subjects of Double Stimulation. They would first observe themselves through the ethnographies completed by student-teachers. The student-teachers would then work together with these teachers to apply a CHAT approach in transforming the curriculum so that it engages students with culturally relevant materials. Unlike the researchers conducting the intervention in the Finnish high schools, the student-teachers in Chacsinkin are themselves arguably engaged in a process of Double Stimulation. They are involved in this project in part because they want to learn about and learn to implement CHAT principles in their work as researchers and teachers (the second stage of Double Stimulation). However, it is unclear whether the first stage of Double Stimulation is present here. There is no formal process in which an outside observer conducts ethnographic observations of the student-teachers learning to be teachers or working as teachers. This step, however, is arguably present. In what form? Directly, in the judgment by Juan Carlos, in his capacity as supervisor to the student-teachers, that CHAT is the appropriate theoretical framework for engaging in this kind of work. Indirectly it comes from the political atmosphere in Mexico that now encourages the development of intercultural pedagogies. (We might stop to ask here what is the criteria at the level of the
Mexican Secretariat of Education for selecting the methodological approach for reforming the cultural content of the curriculum in Mexican primary schools? Where does the Secretariat draw the line between the theoretical and educational approaches it deems appropriate and those preferred by teachers and researchers in the local communities? Is there a bias for Western pedagogies and research methods?)

Considering the developing relationship among the LCHC, the teaching-students and the community of Chacsinkin, is perhaps most useful to view the Yucatan project as an example of Engestrom’s vision for a third generation of activity theory (Engestrom, 1998): an activity system that is developing out of the interaction of two other activity systems (LCHC Research and ENEPY/University of Yucatan research). As Cole and Engestrom (1993) point out, activity systems begin, “with almost exclusive emphasis on internalization, on socializing and training novices to become competent members of the activity as it is routinely carried out.” Indeed the research training of student-teachers and graduate students is one of the components of the beginning stages of the LCHC-Yucatan collaboration; however, one significant challenge in this situation is the fact that we are without a clear sense of the activity that is to be “routinely carried out.”

There is a blueprint though – one which holds distributed learning as a core principle in the development of educational environments. As part of the research proposal submitted to the agency funding this work, we indicated that part of the ethnographic work of the project would adhere to the Funds of Knowledge approach. This research model combines ethnographic observations, open-ended interviews, family histories, and case studies of homes in the community of the schools that are the object of the intervention. These techniques are used to document, “historically accumulated and culturally developed bodies of knowledge and skills
essential for household or individual functioning and well being,” (Moll et al., 1992). It is this body of knowledge that is then recruited in transforming not just the curriculum of the students in the community, but in changing the way the teachers view the students – seeing them not just as students but as whole persons (Moll et al., 1992).

On the surface Funds of Knowledge seems like an appropriate approach for gathering the type of data desired in the Yucatan project. However, as we learned in our first and only teleconference of all the research team members back in August, the perceptions that the student-teachers and community members have of one another will crucially constrain how these Funds of Knowledge are gathered and used. During this first teleconference Mike Cole, Suzanne Gaskins, and Luis Moll all suggested the creation of a space outside of the home and school where the student-teachers and community members could gather on equal grounds; a space where community members can share their knowledge and understanding of Mayan culture with the student-teachers without having to worry about traditional notions of power relations (e.g. maintaining respectful distance from a teacher); a space, in fact, where traditional structures of power relations are reversed so that the student-teachers learn from the children and parents.

The space suggested by Cole, Gaskins, and Moll is in the spirit of the spaces we find in Fifth Dimension projects. One particular instantiation of the Fifth Dimension model, Olga Vasquez’ La Clase Magica, seems particularly apt as a model for developing this space in Chacsinkin. This work, in line with the educational objectives for the Yucatan project, aims at creating bilingual, bicultural environments in which undergraduates, children, and parents can interact together in activities that promote joint collaborative activity (Vasquez, 2003). The motivation for creating these environments has parallels with the work in Chacsinkin. In both contexts ( a Mexican-American community in Southern California in the case of La Clase
Magica), the researchers designing the intervention believe that the native culture is at risk of disappearing as the next generation is socialized into the dominant culture through formal schooling. The hope in both settings is to rescue the native culture by recruiting it as cognitive resource to help children become more engaged in school. There is, however, some irony in this parallel. Whereas Hispanic, Spanish-language culture is the culture being rescued in La Clase Magica, it is the culture being struggled against in Chacsinkin. This reversal creates several interesting avenues of comparative research. One could examine cultural variations in parental attitudes toward education, and the consequence of these on the way the educational and play environments of children are constructed. One might also examine the relationship between these attitudes and migration, both human (of Mexicans to the U.S.) and cultural (of Hispanic, Spanish-language) curriculum into Chacsinkin.

Clearly there needs to be much dialogue among the different participants in the Yucatan project in order for the creation of these spaces to take place. The method of analysis, like the goals, like the objects of analysis, will likely need to be negotiated as the project progresses. Critically for this to take place, communication among the participants must occur at regular intervals. Thus far this has not been the case.

**Communication and Sustainability**

Formal communication between the project members in the U.S. and the Yucatan was planned at the outset of the project. To this end videoconferences and face-to-face meetings among the all the participants in the project have occurred and are scheduled for the future; however, the intervals between these meetings are considerable (twice a year at five and six month intervals). As noted, thus far there has only been one meeting of all the project
participants – a videoconference meeting in late August of this year. This meeting generated much dialogue and questions concerning how to go about the ethnographic observations. Immediately after the meeting there was a brief exchange of ideas via email about how to address problems surrounding community building between the studentteachers and the primary school teachers, children, and families in Chacsinkin; however, since these exchanges there has been very little contact among any of the project participants.

As with all of the sites visited in the Distributed Learning seminar, the internet and email are the primary modes of informal communication employed by us at LCHC and by the group in Chacsinkin. In fact, with the exception of the one videoconference, all of the communication between the two sites has been through email. Furthermore, Ginny, who was/is responsible for initiating and continuing to coordinate the LCHC-Yucatan project, constructed a WIKI page for archiving relevant readings, field notes from the students, and transcripts of teleconferences, email exchanges, and other conversations related to the project.

Despite the available communications infrastructure for the project contact with the student-teachers in Chacsinkin is constrained by a variety of factors. There are only six computers in Chacsinkin with internet connections (wireless). These are easily accessible to the student-teachers as they are located in the town center in the municipal government offices; however, the speed and reliability of the internet connections on these computers are sub-standard because the municipal government itself does not reliably pay for servicing of these connections. As a result, the student teachers in Chacsinkin have had difficulty emailing, as well as downloading and uploading files. In addition to these difficulties, however, it is also possible that because of Juan Carlos resignation from ENEPY, the students, who remain affiliated with the school, feel uncomfortable reporting on their situation in Chacsinkin.
Clearly, achieving a level of communication that allows all the participants to exchange ideas on a regular basis is necessary for sustaining the project. Communication brings us back to the topic of distributed learning, as it highlights the fact that distribution means interaction (Hutchins, unpublished manuscript). Without communication a community of distributed learners is not connected, is not a network, it does not exist. Without communication there is no dissemination of ideas. And as we learned from our discussion of the work done by CREATE and LCHC, without dissemination the research and reforms cannot be sustained. It is through dissemination that CREATE succeeded in establishing its partnership with Gompers. It is through dissemination that the Fifth Dimension as methodology has spread to more than 100 sites. As should be clear by now, the Yucatan project, which aims to implement CHAT principles in the design of educational environments, is a product of this dissemination; however, the tenuous communication situation between Chacsinkin and the U.S. members of the Yucatan project threatens any benefits gained by the investment of this project in this extensive network of research sites.

It is this tenuous communication that differentiates the Yucatan project from the projects in the Distributed Learning seminar. All of the contributors to the Distributed Learning seminar can take for granted that they will have a reliable communications infrastructure with which to conduct their work. Thus, it has been difficult for me to extract lessons from the seminar about how to pursue internet-based research linkages with the developing world. Ironically, I have learned about ways to maintain communication when the communications infrastructure is reliable. It was as a result of dissatisfaction among some registered students with the discussion during the seminar meetings that I learned of different solutions for sustaining communication outside of these face-to-face gatherings. In the context of the Yucatan project, face-to-face
meetings will likely be the most important forum for developing and maintaining links between the researchers participating in the project.

Conclusion

Anticipating the creation of UCSD’s Science of Distributed Learning Center, we can see that the LCHC-Yucatan project will be a valuable addition to the work that will take place here, providing a rich environment for studying, “the distribution of learning in space and time and the mediation that crosses that distribution” (distributed learning def, ). The distribution across institutions and researchers at the international level will allow us to examine how the dissemination of theoretical and methodological approaches developed in one cultural context translate into another culture. Furthermore, there is the fact that the project itself is a study of distributed learning. In adapting the Funds of Knowledge approach we will be examining the distribution of knowledge and the concomitant distribution of strategies for spreading that knowledge in networks of families, teachers, and other community members in Chacsinkin. Indeed, if the project can be sustained for long enough, we may in turn be able to study how communities of distributed learners are formed through the process of identifying and applying local knowledge networks for pedagogical purposes as well as through observations of how these networks are then applied by the next generation both inside and outside of school. However, as I have attempted to show in this paper there is a considerable amount of work to be done in order to ensure that all of this can take place.
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