

CASELINKS, A Multi-media Community of School Practice: How Does it Effect Learning?

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Abstract: The purpose of this short paper is twofold: (1) We first discuss project CASELINK'S model of professional development which utilizes interactive, web-based learning modules. These modules are based on a constructivist view of the learner and a problem-based pedagogy; (2) We then briefly discuss research results from an ongoing evaluation study that was designed to examine CASELINK'S impact on teacher learning during a pilot test of a module.

Project CASELINKS is a research and development project whose impetus was a question: How can traditional academic knowledge and the highly specific and contextualized "knowledge-in-practice" be integrated in a meaningful context for use in professional development? Utilizing a problem-based learning pedagogy (Bridges & Hallinger, 1995), the CASELINK team has designed, developed and is field-testing four interactive multimedia web modules for use with both pre-service and in-service teachers. The goal of this professional development is to enhance teachers' understanding of students with educational differences in general and their understandings of and ability to work with English Learners in particular.

Theory

Usually, when *knowledge-of-practice* and *knowledge-in-practice* are linked together in professional development programs the gap between the two can be wide. Traditional *knowledge-of-practice* is packaged and typically resides in textbooks and lectures whereas supervised teaching in the field is distributed over a geographical area defined by cooperating institutions and without much control of

the nature of experiences. Often the recipients of these college and field experiences view the two as separate learning entities and are unable to either apply what they have learned in the university setting to the classroom, or to view the instances of specific children that they work with in the classroom as cases to help them assimilate the theory that they are learning at the university into their schema of how children learn and how they should teach. Creative solutions to this problem are important in order to improve the overall quality of professional preparation. CASELINKS addresses this issue using problem-based learning pedagogy along with multimedia web technologies and a constructivist view of learning.

Constructivism as a Theory of Learning

The traditional model of learning assumes that knowledge of practice is easily transmitted from a textbook or professor to the prospective teacher, the assumption being that the mind is representational, a mirror of some pre-defined ontological reality, and that once "transmitted," this knowledge is easily applied to real-life contexts (Cobb, 1994). Under this theory of learning, there should be no conflict between what is learned in a lecture hall and its application in a school classroom. However, a plethora of writings by eminent researchers, tells us that this is not the case. For example, McDiarmid (1990), reminds us that "beginning teachers tend to believe that they were not taught essential knowledge, such as how to manage a classroom, regardless of whether or not they were exposed to such knowledge" (p12).

An alternative theory of learning is based on constructivist theory, which sees knowledge as an adaptive function (Glaserfeld, 1989), in which a learner comes to "know" by responding to experience and creating and modifying his/her own conceptual structures by means of assimilation, accommodation and reflective abstraction. According to Savery (1995), "we cannot talk about what is learned separately from how it is learned...rather, what we understand is a function of the content, the context, the activity of the learner" (p 31). CASELINKS is based on the premise that in order for prospective teachers to be able to build a bridge between the knowledge they learn at the university and the practical experience they learn in classrooms, high road transfer, the mindful abstraction of one piece of knowledge for use in a novel situation, needs to be fostered (Perkins and Salomon, 1988).

Problem-Based-Learning Pedagogy

The challenge is to find a means to link a constructivist theory of learning with a viable instructional method that combines knowledge-of-practice to its situated version knowledge-in-practice. In an attempt to make this link, the CASELINKS modules are grounded in the pedagogical theory of Problem Based Learning (PBL). Viewed simplistically, PBL involves teams of learners working in groups in order to solve difficult, real-life problems characteristic of those encountered in their chosen professional field. The collaborative work, which is usually undertaken over several weeks, results in a substantial "end-product" or solution. Applied to the context of teacher education, we made the assumption that development of professional knowledge requires a repeated need to learn new knowledge from, and apply learned knowledge to, real life messy problems. The CASE materials that have been developed bring together information from school professionals (including regular and special educators, administrators, counselors and psychologists) in school site-oriented, co-operative teams as these professionals collaborate on real-life messy problems, in an attempt to capture this knowledge-in-practice.

Instructional Delivery—Using Multi-media Technology

CASELINK utilizes multi-media, online technology to bring this constructivist, problem based learning experience to the user. The use of hypertext, QuickTime and Shockwave video, JSP web Interfaces and back-end databases was chosen as the appropriate forum for the teacher-user to interact with the CASELINK, subsequently all of the CASELINK materials are mounted in a systematic way on CDs and the web. These multimedia materials include photos and video segments of different children, their parents, peers, teachers and other school professionals, along with IEP's, student work other school artifacts, as well as professional publications such as journal articles and book chapters.

Components of the CASELINKS Learning Experience

For the remainder of this paper we use teacher questionnaire data along with teacher responses to online case assignments from an on-going pilot study to show how the components of each case (described below) form an amalgamation of theory, pedagogy and instructional delivery that allow the teacher-user to participate in an authentic *Community of [School] Practice* that fosters highroad transfer between knowledge-of-practice and knowledge-in-practice.

A. Framing the Problem

(<http://caselinks.education.ucsb.edu/casetrainer/narrativepedro/narrative/index.html>).

The process begins when the teacher-user interacts with a core problem (case). The URL above illustrates one such “case” the case of Pedro, a fourth grade English Learner, and some of the issues taking place in his school, classroom and home. The explicit objective for the case is to situate subsequent knowledge acquisition in “real-life” practice. Often these cases involve information from multiple sources. During their interaction with the case materials, teacher-users watch video clips of role-specific individuals involved in the case such as the student’s classroom teacher, their parents and their school principal; they may examine student work samples and other artifacts, and they may look at school demographic and achievement data. Once the case has been explored the teacher-users frame the problem (i.e. they submit online a description of the situation and what they view to be problematic in it).

(<http://caselinks.education.ucsb.edu/casetrainer/narrativepedro/frameProblem/stuactivity1.html>)

Regarding Pedro’s family I heard conflicting information about Pedro’s family being active in his academic life. The mother seemed to make a connection with the outreach coordinator who is Latino and is fluent in Spanish. Would the mother be more connected if she could communicate with Pedro’s teachers? After countless IEPs I often wonder how literate some of my student’s parents are. Often they have a hard time signing their own name. How educated are Pedro’s parents? Could they help Pedro with homework if the homework was in Spanish? Can they read Spanish? Was school so difficult for them that they shy away from being there for Pedro? I look forward to learning more about how to help Pedro in the coming sessions. (teacher-user 1)

Class members often view the problem differently from one-another.

Pedro seems to lack self-advocacy skills. He seems passive about learning. He is behind his peers in English language development. It is difficult to tell if there is more than just a language difficulty. How much do the teacher and/or reading specialist know about Pedro, his Spanish language development or his family? (This is a time problem...not a criticism of the teachers.) Pedro does not get to talk very much at all, even in his small group. The teachers must necessarily “move along” to cover the required

content. There is a lot of teacher talk. I didn't see any concrete example from his peers. Is the classroom culturally relevant for Pedro? Picasso may not have much meaning for someone like Pedro. Pedro is at risk due to his apparent poor SES. The family is rather passive about his education and not very involved. (teacher-user 2)

Users then meet in their work groups either in real [class] time or in CASELINKS chat rooms and discuss their problem statements (how they viewed the problem). After participant groups develop comfortable as well as efficient operating procedures (e.g., roles, responsibilities, note taking/keeping) they then retrieve their submitted framed problems (through a computer interface) and reflect on these responses in their groups. They then re-submit as a group after coming to some consensus about the nature of the problem. This allows for the cognitive restructuring of information to occur for each teacher-user based on the shared beliefs and knowledge of the group.

B. Constructing a solution to the problem

In order for each group of users to solve their proposed problem, they then interact with the CASELINKS materials. The teachers being described for the purposes of this paper are enrolled in a CLAD course, to learn about methods for teaching English learners. The online material that they are learning in this part of the module is tied back into context by encouraging reflective abstraction to occur, for instance, as teacher-users learn about affective factors that influenced language acquisition.

(<http://caselinks.education.ucsb.edu/casetrainer/CLADContent/CladLanguage/node6index.html>) The teacher-user views more online clips of Pedro as he participates in a reading group and as he talks to an interviewer about his participation in science class. They are then required to submit their response to prompts asking them to reflect on how the classroom may be structured in order to better serve Pedro's needs. This has the effect of encouraging high road transfer of information by anchoring the new learning to a concrete situation on which the teacher-users were currently working.

One purpose of the reflective prompts that are present in each section of new material is to enable the teacher-user to organize their learning in such a way as to be able to bring it back to share with their classmates in the context of the problem at hand. After obtaining all information they deem relevant to represent Pedro's case, teacher-users bring their new knowledge to their team meeting at which point an agreement on a plan for the student in question is reached.

(<http://kady.education.ucsb.edu/netshare/casenet/html/CladPlan/LessonPlanMain.htm>) In this particular case, the plan consists of writing an appropriate lesson plan for Pedro.

C. Reflecting on and Discussing Solutions.

The final stage in the PBL module is reflection on and discussion of the submitted solution. When this stage occurs it will afford the teacher-users an opportunity to compare their problem solution to one developed by “experts” in the case. As a team, the teacher-users sift, weigh, and integrate what information has been gathered, then discuss differences that exist between the expert solution and their own. They also reflect on the both the possibilities for these differences and the knowledge that they have gained from this process. Finally they modify their final product if they wish and resubmit it.

Preliminary Results

Prior to each course, teacher-users’ understandings of English Learners were assessed with multiple measures. One such measure was a problem solving prompt which required them to predict what teaching strategies they would use with a particular EL student. The student in question shared certain characteristics both in common with and different from the case they studied during the course. This problem-solving measure was given again post course. Preliminary analyses of these responses using the constant comparative method (Strauss, 1987) indicate that, in general, teacher-users possessed a much wider range of instructional strategies that were appropriate to use with ELs after the course than before the course. Data also indicated that learning during case reflective assignments was carried over to be used in this new situation.

In addition pre/post quantitative data on teachers’ understandings (beliefs and knowledge) about English Learners was collected. (Full details of this study are reported in Hough, & Gerber, 2003). The knowledge measure consisted of 15 multiple choice items which were summed to give a total knowledge (TK) variable. A factor analysis of the 15 item graded response beliefs measure resulted in two latent variables, philosophy of curriculum (PC) and philosophy of pedagogy (PP).

Eg. Of item loading on Philosophy of Curriculum (PC)	Eg. Of item loading on Philosophy of Pedagogy (PP)
One of the goals of American education	Teaching children in their native

is to bring everyone into the mainstream. (Disagree="5"...Agree = "1")

language along with English slows their academic development. (Disagree="5"...Agree = "1")

Eg. Of Knowledge item (TK)

17. Which of the following is the *most* appropriate way to make a social studies lesson understandable to students whose primary language is other than English?
- (a) Include a filmstrip as part of the lesson.; (b) Use a larger number of worksheets than used with fluent English speakers;
- (c) Teach a comparable lesson from a lower grade level.; (d) Simplify the lesson by focusing on only a few of the key concepts.

One-way analyses of variance showed statistically significant (positive) pre/post course differences on the variables PP and TK.

Concluding Remarks

Closing the gap between "knowledge in practice" and "knowledge of practice" requires education professional development to be brought as close to the reality of authentic school practice as possible. Knowledge-in-use is messy and is based upon the interactions of teams of school professionals; it exists in on-the-fly decisions in classrooms--decisions that are grounded in years of professional experience; and it is always shaped by the context in which the specific problem-to-be-solved is situated. CASELINKS attempts not to bring these aspects of knowledge to the traditional learning environment, but to use multi-media online technology to recreate a learning space that more closely resembles an authentic school decision-making environment. Moreover, it gives teacher-users opportunities to generalize between this school environment and the concepts learned in their university classrooms.

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