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Communities of Learners & Communities of Teachers

Lee S. Shulman

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Communities of learners

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Communities of teachers

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EDITOR'S NOTE

Professor Lee Shulman has spent many years investigating fundamental conceptions of learning and teaching. His ideas on "pedagogical content knowledge" and on the use of portfolios and cases for the purposes of teaching and learning have become part of the educational discourse world wide.

In recent years Lee Shulman has made a further contribution to our understanding of teaching and learning by suggesting the establishment of "Communities of Learners," where tasks are shared among teachers and students.

In November 1995, the Mandel Leadership Institute in Jerusalem invited Professor Shulman to discuss this conception and its implementation with educational leaders from Israel and from Jewish communities around the world. His public address, "Communities of Learners and Communities of Teachers," is published in this monograph.

D. Marom

Communities of Learners & Communities of Teachers

Lee S. Shulman

I come tonight to talk to you about work in progress. This is work in which I am engaged with my colleague Judy Shulman, my students, and collaborators across the United States. Our topics are communities of learners and communities of teachers. I shall begin by summarizing the major themes of tonight's lecture. The rest, as Hillel said, is commentary; but as you know, in the Jewish tradition, the commentary always takes far longer than the text.

I will begin by describing a few examples of what I mean by communities of learners. One of the lovely things about being in Israel is that nothing can initiate a longer and more extensive discussion than the simple question, "How would you translate 'community' into Hebrew?" We could spend an entire week, I am sure, with the Hebrew *balshanut* [linguistical study] of the word community. We have tried *kehillah* [congregation]. *Kehiliyah* [a self-governing society] is what ended up in the Hebrew title. Chevrutah [society of learners] has certain implications that are interesting. I tried to invent a new word, *chevrutiyah*, but failed to receive approval from knowledgeable Hebrew speakers.

The difficulty of this translation in itself suggests the richness, the ambiguity and the multi-faceted character of the concept of community, both in reference to learners and teachers. In a deep sense, I agree with the educator in New York, Deborah Meier, who wrote that the essence of learning is telling, and the essence of teaching is listening.[1] Thus, perhaps communities of learners and communities of teachers are actually the same thing, when you come to understand them fully.

In any event, I will begin with examples of what we might mean by communities of learners. I expect that you will find that the examples do not sound too alien. In fact, you will probably say they sound very familiar and that you are doing these things already. Many of the approaches that I describe here are quite consistent with practices that many of us have tried to employ for many years.

After giving examples of what I mean by communities of learners, I will describe briefly the project in which I am currently engaged. Then I am going to ask the following kinds of questions:

1. What are the underlying principles which explain how these learning communities work as well as they do? What are the fundamental principles?

2. If these principles and practices are the answers, then to what questions are they the answers? We are often much more adept at giving the answers than explicating the underlying questions to which they respond.

3. If these principles are such good answers to important questions, then why is it that we so rarely find these principles put into practice? What makes them so very difficult to apply? Here I am reminded of the work of my teacher, the late Joseph Schwab, who wrote, on the 100th anniversary of the birth of John Dewey, a brilliant essay called, "The Impossible Role of the Teacher in Progressive Education."[2] I am going to ask the question "Is this conception of teaching in a community of learners fundamentally impossible?" And, in a related way, "Is that why, even though the theory is good, and we have good operational models, we so rarely see them put into practice?"

4. If we want this kind of learning to go on, how can the most critical component of the educational system learn to employ these principles? By that I do not mean school administrators, and I certainly do not mean professors. I refer to classroom teachers. What are the conditions under which teachers can learn to engage in this kind of teaching? Under what circumstances can teachers sustain these practices over time? As I see it, this is the key question. Indeed, I will conclude my address with the argument that the very same principles that explain why *students* can learn under these circumstances, explain the kinds of conditions we must create if we want teachers to learn to engage in this kind of teaching.

What is a Community of Learners?

What do we mean by a community of learners? This idea, and the very few documented enactments of this idea, were extremely inspiring to me, and to some of the leading experts in the field, such as Jerome Bruner and Marshall Smith, because we were able to observe and to read accounts of classrooms that were operating in ways that we had not encountered before.

The first example was developed in Oakland, California by the eminent psychologists, Anne Brown and Joseph Campione. Some of you may know their work, especially the work of Brown and Palinscar on reciprocal teaching[3] and the present research on communities of learners.[4] Anne Brown devoted her American Educational Research Association Presidential address to this latter topic.[5]

What would you see if you walked into one of the small number of classrooms in Oakland, California in which a group of youngsters is learning as a community of learners? Let us imagine that the class is about to begin. They are studying a unit in biology on the topic of endangered species, species that are in danger of becoming extinct. The instruction begins with a series of lessons that Brown and Campione call ***benchmark lessons***. These are lessons whose purpose is twofold. The first is to create a foundation, a shared base of knowledge among all the students, so that what they already understand about endangered species can be made explicit and put on the table. Their prior knowledge includes both their correct conceptions and their misconceptions, their prior theories and understandings, so that after the benchmark lessons, everyone starts in more or less a similar place. That is one aspect of a benchmark.

The second purpose of a benchmark is to help the students understand at the very beginning of the unit where they will be 15 weeks later. What is the goal? Where is all this heading? In this case, the teacher explains that at the end of the unit, the class is going to prepare a series of reports to the City Council of Oakland, and in these reports they will recommend new policies to protect endangered species that live in their community. This will not be merely an exercise, but in fact, three members of the City Council have already scheduled a date and the students are going to go to the Council and make a public report that may even be televised so that others can watch it. They thus can prefigure the goal of their activities.

How does the benchmarking begin? Again, nothing here will be a surprise to any of you. The teacher asks questions like, "Does anyone know what an endangered species is?", and, "Do you know examples of endangered species?" Students begin to pull out bits and pieces of the information they already have, and the teacher starts to organize it and collate it on the board in front of the students. The teacher offers other concepts and principles to fill in the gaps in the fundamental benchmark understanding of the students. The students are also asked to begin generating the important questions they will need to address if they wish to know enough to complete the final tasks. These student questions, once collected and organized, become the basis for the second phase.

The second phase is ***research groups***. At this point, something rather revolutionary happens. That is, the teacher forgoes the dream that all of the students will learn all of the material. Many of us are teachers, and we know the deep sense of guilt that accompanies those rare moments in which we acknowledge that everyone is not going to learn all of the material. Yet, this step is absolutely essential in this particular conception of a community of learners. Instead, the teacher says, "Now is the time for you to break up into smaller groups, and each group is going to become knowledgeable through its own research and its own reading, through its writing and through its communication by computers with other experts, through watching videos and through doing interviews. Each group is now going to become more proficient in only one aspect of the problem of endangered species."

They can then break up the problem in several different ways. One possibility, which some classes use, is that each group investigates a different species and tries to understand all the different aspects of its status as an endangered species. One group may become specialists on the spotted owl, another group may become specialists on the problem of the peregrine falcon, and another on some kind of whale. Thus, they can become knowledgeable about particular types of endangered species. Or, they can divide the problem differently. One group can look at aspects of habitat with respect to a variety of endangered species. Another group can become more expert in reproduction, while another investigates issues of toxicity and disease.

What matters is that two things happen in the research groups. The first is that students have the opportunity - through active investigation, reading, writing, interviewing, and learning - to become more deeply knowledgeable about a piece of the larger problem. This second aspect of their work is the most difficult part for us as educators to design. The parts in which they become expert must fit together like a jigsaw puzzle in the next phase of learning, because they are necessary pieces of what they will need in order to confront a more complicated task later on. Thus, the parts are already seen by the designer, by the teacher, and by the curriculum maker (who may all be the same person) as necessary, but not themselves sufficient parts of a larger task.

For the next month or two, each group does its investigations. They study in depth. They go out on the Internet and gather information. The Internet is increasingly becoming a regular part of many classrooms. The group members make phone calls and interview experts at museums and universities. They read widely. They learn from each other. Periodically, the members of the different groups talk to one another to see what the other groups are doing, so that they are not totally unaware of what is happening in the rest of the community. These are called ***crosstalks***. The teacher coaches and monitors the work of the groups and periodically brings all the students together for additional benchmark lessons. These may include lectures, interactive discussions or demonstrations.

At the end of the period of research, each group has essentially prepared a book. They have written a text on their specialty - in some of these classrooms, they actually compose it together on the computer, collate it and print it.

At this point we come to the third phase, when the specialists from each group engage in what we call a ***jigsaw***. Here, one or more members of each of the specialist groups comes together in a new group, whose responsibility is to solve a problem that can only be solved by synthesizing and bringing together the knowledge that was previously possessed only by the separate groups. In this phase, the students begin to spend time teaching one another. They take turns literally teaching their ideas to one another, and beginning to address a new problem. This new problem often involves the process of design. The new problem might be something like designing an animal, where the teacher will present them with a new set of conditions, and the challenge for the students is to design a new animal that will succeed in adapting to these conditions

and will not be endangered. Or, they might be given an animal that is in the process of becoming extinct and be asked to design a set of conditions under which this animal that is currently endangered will he able to survive and flourish. To do this, they have to draw on the individual expertise that they bring to the problem in order to create the needed design.

Finally, the capstone experience - the ***consequential task*** - is a public exhibition, demonstration, or display, a presentation of what these new design groups have been able to do together. It can be a presentation of new ideas to the Oakland City Council. That is the way this community of learners worked in that Oakland classroom.

Towards a Deeper Understanding of the Community of Learners Model

What was striking, as you looked at community of learners classrooms, is first of all, how much the students were learning. Even though what they were doing did not map very well onto the standard tests that were used to measure student achievement, their test scores went up in reading, in science, in the areas being covered. There was impressive academic and social accomplishment by the students in the classroom. Yet, this kind of learning did not take up the entire day, five days a week; in most cases, it occupied about two hours a day, three days a week.

When care was taken to ensure that students really became expert in their research groups, every student had something important to contribute to the design (jigsaw) groups, because investment had been made in developing their understanding and knowledge in the earlier phase. What you saw was a kind of authentic interdependence. It did not depend on saying, "Ah, Shmulik draws well. Let us make sure that whenever we need something drawn, Shmulik does the drawing." I believe that is a weak basis for building on the strengths of the multiple intelligences which are to be found in any given classroom. In a community of learners under the model I am presenting, you engage students in acquiring precisely the kind of understanding and knowledge that you want the students to be able to contribute to the larger group and to the community.

In such classrooms you also encounter some surprises, because once you turn kids loose, the dangerous thing that happens is that they go where they want to go! I remember Anne Brown's account of one student who was trying to understand the relationship of disease to endangerment and he came up with an hypothesis. The hypothesis was this: "You know, in my community" - this was an African American youngster -"I have relatives who have both AIDS and sickle cell anemia [a very special kind of anemia, a hereditary blood disease that is unique to black Africans and those of black African descent]." The child's hypothesis was consistent with everything he knew up until that point. "I predict that black people have both conditions because you catch AIDS and sickle cell anemia in the same way." Of course he did not know enough science to know that his theory was incorrect, but his hypothesis initiated a research project to investigate how AIDS and sickle cell anemia were related.

Consequently, he learned that he had misformulated the problem and, in turn, others learned from him and he learned from them. This was something unplanned in the original design of the curriculum, yet also clearly something that neither he nor the other students would have learned if they had not been given the latitude to explore.

As I both observed and read about this kind of teaching and learning, I realized that if I was going to understand it better, I would have to try it myself. I therefore organized a graduate seminar on exactly the same basis. It was my annual graduate seminar on research on teacher education. I used the community of learners model in the following manner. We spent the first two weeks with all participants acquiring a common base of knowledge on teacher education, through reading, lectures and discussions. This was our benchmark or anchoring stage. I explained to the students that at the end of the course, they would form groups that would create proposals for the reform of teacher education. In order to do that, they then divided into research groups, in which they spent a number of weeks learning in depth some particular aspect of teacher education, and they then jigsawed as specialists into new groups to design new programs of teacher education. No individual student knew everything, but when does anyone know everything? They were all able to take what they had learned in depth, and then in a community of learners, teach one another and accomplish jointly what no one of them could have done alone.

I was also asked to design a community of learners exercise for teachers in Jewish education, one that could be completed in a single day. I created a brief unit for the study of *Tanach*. We worked with three groups of Jewish educators. One group studied a section from *Sefer Bereishit* dealing with the destruction of Sodom. A second studied a section from *Sefer Shoftim*, the infamous incident of the concubine at Givah, and a third group studied the coronation of Saul, from *Sefer Shmuel Aleph*. The members of each group became specialists, each of them in their own portion of the *Tanach* - specialists as much as one can be in an hour and a half. Then I divided them into new groups, made up of combinations of specialties and gave them textual interpretation problems to solve, that could only be solved if you could look at connections between the different texts. This meant that people would have to teach the others in the group their texts, and would then have to work together on the combinations.

How Do We Investigate Communities of Learners and Teachers?

We now have a national project in the United States, supported by the Mellon Foundation, to try to understand how and why the community of learners model seems to work. What is the character of the project? There are several research teams. One research team, directed by Brown and Campione, is from the University of California at Berkeley. This team continues to conduct more studies in a small number of classrooms to understand how these principles work with pupils, mainly at the elementary school and middle school level.

I am directing the second project at Stanford in collaboration with Judy Shulman of the Far West Laboratory. We are asking the following question: If pupils do learn well under these conditions, how can teachers learn to teach in these ways? We are asking the questions of teacher-learning in relation to those of student-teaming.

Then there is a third question, dealing with the organizational aspects of such reforms. Even if teachers can learn to teach in these ways, what does it take to create the conditions in an organization, whether a school or a network of teachers, to make it possible for teachers who have learned to teach this way to sustain such teaching? How many of us teach as well as we know how? Not a single one of us, I trust. Even though we have learned to teach in certain ways, we work within organizations, contexts and settings that often actively discourage the application of these understandings on our part. Even more important, what does it take to create an organization in which teachers can continue to learn to teach from their own practice? We have a third research team looking at these issues, and it is directed at Stanford by my colleagues Milbrey McLaughlin and Joan Talbert.

The fourth research group concerns itself with assessment. In Israel, people are interested in institutions like the bagrut matriculation examinations, because no matter what you want to teach, the students will end up learning what their important tests measure. All the effective influence will be from the tests, not from your good intentions. In the United States we typically create these wonderful school reforms, change the curriculum, modify teacher education and then never get around to changing the assessments. Therefore, very little eventually changes. Some of the most important lessons that we in the United States know about the centrality of assessment

is based on work that was done here in Israel by Pinchas Tamir in the biology reform 20 years ago, in which he and his colleagues reformed the biology matriculation exams. So, we have a research team led by my colleague at Stanford, Edward Haertel, who is looking at questions of how we can design new kinds of assessment that will be consistent with the goals of this kind of teaching.

Finally, since it is apparent that technology is going to play a larger part in the instruction of the teacher, we have a team at Peabody College at Vanderbilt University, Tennessee - which has, I think, the best group in the world in educational technology. They are looking at how technologies of different types can contribute to the education of both students and teachers who are attempting to create learning communities.

As you can see, our research teams themselves comprise a community of learners. Each group attempts to become expert in a part of the larger problem through its research work. We then combine our understanding to address the problem jointly.

Principles that Characterize

Communities of Learners

As I say, this is a work in progress. We are still trying to understand how and why such teaching and learning work. At least six distinct principles appear to characterize effective and substantive learning in the community of learners model. These are principles which I have found to be useful in trying to explain why this kind of learning seems to work so well.

The six principles which appear to characterize the conditions for authentic and enduring learning in the community of learners model are **generative content**; **active learning; reflective thinking** and **practice**; **collaboration**; **passion**; and **community** or **culture**.

These ideas were originally stimulated by an address to the American Educational Research Association by Jerome Bruner in 1994, but have been adapted to the point where Bruner might well neither recognize nor support them. They naturally owe a debt to the work of our collaborators Brown and Campione as well[6]. According to these principles, authentic and enduring learning occurs when:

- The subject-matter content to be learned is **generative**, essential and pivotal to the discipline or interdiscipline under study, and can yield new understandings and/or serve as the basis for future learning of contents, processes and dispositions.
- The learner is an **active** agent in the process, not passive, an audience, a client or a collector. Learning becomes more active through experimentation and inquiry, as well as through writing, dialogue and questioning.
- The learner not only behaves and thinks, but can "go meta"- that is, can **reflectively** turn around on his/her own thought and action and analyze how and why their thinking achieved certain ends or failed to achieve others. Metacognition-consciousness of how and why one is learning particular things in particular ways - is the key to deep learning.
- There is **collaboration** among learners. They can work together in ways that scaffold and support each other's learning, and in ways that supplement each other's knowledge. Collaboration is a marriage of insufficiencies, not exclusively cooperation in a particular form of social interaction. Moreover,

there are difficult intellectual challenges that are nearly impossible to accomplish alone, but are more readily addressed in the company of others.

- Teachers and students share a **passion** for the material, are emotionally committed to the ideas, processes and activities, and see the work as connected to present and future goals.
- The processes of activity, reflection and collaboration are supported, legitimated and nurtured within a **community** or **culture** that values such experiences and creates many opportunities for them to occur and be accomplished with success and pleasure. Such communities create participant structures which reduce the labor-intensity of the activities needed to engage in the most daunting practices that lead to teaching and learning. Classrooms and schools that are characterized by activity, reflection and collaboration in learning communities are inherently uncertain, complex and demanding. Both learning and teaching in such settings entail high levels of risk and unpredictability for the participants. Both students and teachers require a school and community culture that supports, scaffolds and rewards those levels of risk-taking and invention characteristic of these new ways of learning for understanding and commitment.

The Question of Curricular Scope

Naturally, there are many kinds of questions which arise from the principles enumerated above. A particularly glaring problem is the eternal universal question of curriculum, namely, "How can we possibly teach everything we know when we have so little time?" Even if we have the time, the students do not. Even if we had three times as much time, there would not be enough. How do we solve the problem of creating a curriculum that is intellectually honest, to use Bruner's phrase, with respect to the knowledge that our communities have acquired?

There are different kinds of solutions to this dilemma. One is the solution of coverage. It is the one most of us practice in our national curricula, even though we know it is doomed to fail. There is a simple reason why we continue to cover everything, even though we know it fails, and that is because if we, as teachers, try to teach everything, we need no longer feel guilty. The student's problem is to learn all we have taught, and if she or he fails, it is not our fault.

There is also a political reason why we opt for coverage. The different stakeholders value different kinds of knowledge. If we really engaged in the kind of deliberations that Schwab argued for, and taught only those topics related to the deeper underlying principles, it would permit us, in an intellectually honest way, to make the curriculum more authentically learnable[7]. The curriculum would be shorter and more meaningful. However, we would have to have discussions that would be very painful and very difficult. Some favorite topics, books or heroes would not be covered. The politically easy solution is always to add three more chapters, to let everybody get a place at the bigger table by making the curriculum more extensive. The Advanced Placement biology text book in the United States is a symbol of this strategy. This book is so heavy that teachers now advise students not to carry it back and forth to their homes, because they might injure themselves. Every new edition grows larger. Why? It is because the system has surrendered to the principle of coverage.

A second approach attempts to identify the structures of the subject matter, the essential questions of disciplines and their applications. This is a very promising approach, but it has a fatal flaw. The fatal flaw is that the structures turn out to be incredibly complex, difficult, ambiguous and multifaceted themselves. So that when you say with Ted Sizer that less is more, and that you must teach the structures[8], no one faces the fact that less is more *complex*, less is more *ambiguous*, less is *more difficult to learn*, less is *more difficult to teach*.

Consequently, attempting to reduce the curriculum to its essence may not actually solve the problem, as long as all students are expected to learn the same essence.

The community of learners model suggests a third approach. The third approach argues that while it is worthwhile to look for the structures, to look for the essential questions, and for the generative topics, we must not believe for a moment that everyone can learn even these. We must be prepared to live in a world where different people have come to know different things in depth, and where they develop the capacity to collaborate with one another when there are problems to solve, problems that transcend what any individual can do alone.

One of the people who has most beautifully expressed this sense of the way the world is becoming, not just in schools, but in the world of work and play, is not a philosopher of education, but if you will, a philosopher of management, Peter Drucker. Drucker lately has been claiming that the world of work is increasingly becoming a place where the *individual* is no longer the unit; he or she has been supplanted by the *team*. A team is defined as a group of people who have individually specialized in particular bodies of understanding and skills, who have developed a capacity to learn how to learn, because what may be an understanding today, becomes obsolete next week. A manager is someone who has learned to bring together groups to optimize the contributions of each member.

Let me read you one quote from Drucker, which I shall modify in a particular way. Every place in this excerpt where Drucker uses a form of the word manage, I am going to replace it with a form of the word teach. I think you will understand the point:

> *Teaching is the distinctive organ of all organizations. All of them require teaching whether they use the term or not. All teachers do the same things, whatever the purpose of their organization. All of them have to bring people, each possessing different knowledge, together for joint performance. All of them have to make human strengths productive in human performance, and human weaknesses irrelevant. The essence of teaching is to make knowledge productive. Teaching, in other words, is a social function, and in its practice, teaching is truly a liberal art*[9].

Now, Drucker was saying all that about management, not teaching. What he has not yet quite understood is that, in its essential character, management is a form of

pedagogy, a kind of teaching. Teaching is the highest and most complex of the liberal arts.

Why Is this Approach So Rare?

Another question is: "If these practices and these principles are so good, and if both our theory and the wisdom of our experience support these ideas, then why do we not engage in this kind of practice on a regular basis? Why, indeed, do we see it so rarely?" I have two related answers to that question. The first is that if you take those principles seriously, and you imagine what a classroom would look like, in which activity, reflection, collaboration, passion, generativity and community were all going on at the same time, you would likely have what you call in Hebrew a *balagan*, a chaotic mess. It would not be a quiet or an orderly place. In fact, it would violate the first rule of teachers' survival, that teachers create classroom organizations in order to reduce the amount of uncertainty and unpredictability in their environment.

The principles that characterize communities of learners, if taken seriously, say to teachers, "In spite of every instinct in your body and in your mind to design a classroom environment that will be under control, that will be predictable, where you can predict what is going to happen, design a classroom environment where the students will engage in the kind of reflective, collaborative, intellectual and emotional activities which, if successful, will lead them to construct understandings and to ask questions that were not in your lesson plans or in your unit designs. Design for uncertainty, not certainty. Design to maximize chance." This may be an exciting prospect for some teachers, but hardly a comforting one. Uncertainty is very uncomfortable.

This leads me to the second and related answer. We have prepared generations of teachers who are very uncomfortable with uncertainty, and who are intolerant of uncertainty. I would contend that the major reason why the kind of teaching we have been discussing, even though it is productive, is rarely put into practice, is because we have not yet created the conditions in schools, in institutions, or in teacher education that not only will tolerate the creation of uncertainty and unpredictability, but will in effect develop values that will support teachers and learners in those communities to engage in such activities. Even though we may pay lip service to the work of John Dewey, Joseph Schwab, or others who advocate this kind of progressive education, in fact, most of what we do, both to prepare teachers and to support them in schools, works directly contrary to those principles.

Communities of Teachers and the

Case Method of Learning

This leads me to the last section of this evening's lecture: Conceptions of teacher learning that might reverse the emphasis on seeking certainty and predictably, and might help create a cadre of teachers who are much more tolerant of, even engaged with, uncertainty and unpredictability.

Judy Shulman and I have been working on the use of **cases** and **case methods** in the preparation of teachers[10]. Most of the work we have traditionally done in the preparation of teachers has focused on design - planning lessons, planning units, coming up with systems for classroom organization and management. We are very invested in the design functions of a teacher, and this is certainty appropriate, because teachers require planning, design, organization. However, teachers also understand that the realities of classrooms are that no one can fully design the world. Once the teaching and learning begin to unfold, uncertainty never disappears. That is even more the case if you engage in the kind of teaching we have been talking about in this lecture, the kind of teaching that occurs in communities of learning. Such teaching may begin with design, but in the end it is shaped by uncertainty and it becomes a case.

What is a case? A case is a special kind of story; it is a narrative. My colleague and friend Jerome Bruner has a lovely definition of a narrative, of a story. Bruner says that a story is an account of the vicissitudes of intention[11]. These are the accidents of planning. A story happens when intention collides with reality. What do we mean? If I tell you the following story, "Little Red Riding Hood took a walk into the forest to bring her grandmother lunch. And that is what she did," you sit there waiting for the story. You ask yourself, what is the story? But if I say to you, "Little Red Riding Hood went into the forest to bring her grandmother lunch and she happened to meet the big bad wolf," now we have got a story! It became a narrative because the plan collided with chance, an accident, something that was not intended.

If you look in the *Oxford English Dictionary*, you will find that the root of the word case means chance. So, if I say to you, "Let us meet at such and such a corner, but just in case we miss each other, I will see you at the restaurant," I am changing what was a plan into a story which includes chance. Thus, a case is a story, because it involves chance.

Being accounts of what happens when intention and chance meet, cases are useful for the training of professionals. They are already used in the training of business and

military people. In the field of education they are badly needed for teacher preparation. Teachers understand that it is not enough just to study the theories, the intentions, the plans, the designs. We need to create strategies of teacher education that permit both intention and chance to be represented in their collision as well as in their separateness. The most important source of such cases is the experiences of the teachers themselves. That is why we must shape institutions of teacher education and of teaching that create opportunities for teachers to actively reflect on their own practice by collaboratively investigating their own experiences through the use of cases.

If you attend to my language carefully, you will understand how we have come full circle in this lecture. The very same principles that explain why students learn in communities of learners explain how teachers can learn in communities of teachers. Teachers must be in communities where they can actively and passionately investigate their own teaching, where they can consistently reflect on their own practice and its consequences, where they can engage collaboratively with one another, to investigate, discuss, explore and learn from one another about what happens when chance occurs in their teaching and thereby, where they can, as members of the community, generate a base of knowledge that goes beyond what any one of them could learn in the isolation which now characterizes their classrooms.

That is the principle of a community of teachers. It is so bound up with the principle of a community of learners that if you ask me what is my definition of an effective school, I will say: An effective school is an institution that is as educative for its teachers as it is for its students. It creates the same kinds of conditions for both.

I have come to the end of this journey. It was a long journey, but the problem is a hard one. It cannot be solved by good intentions alone. It can be solved only through courage in both policy investment and practice. And lest you think that I place too much emphasis on the issue of chance and learning from experience, keep in mind what John Donne, the poet, said about love, because in this sense good love is like good teaching. He said, "Though it is got by chance, it is kept by art." That is, many fruitful activities begin with a fortuitous accident, but it requires serious and persistent effort (art in the language of the poet) to sustain the fruits of chance and make them endure. In the case of improved teaching, enduring improvement will be accomplished through disciplined reflection, through active experimentation, and through the collaborations that we pursue together in a learning community of teachers.

Notes

1. Deborah Meier, *The Power of Their Ideas* (Boston: Beacon Press, 1995), p. xi.

2. Joseph Schwab, "The Impossible Role of the Teacher in Progressive Education"' This essay appeared originally in School Review 67 (1959), pp. 13159 and was reprinted in an anthology of Schwab's essays entitled *Science, Curriculum, and Liberal Education: Selected Essays*, edited by Ian Westbury and Neil J. Wilkof (Chicago: University of Chicago Press, 1978), pp. 167-183.

3. See A.S. Palinscar and A.L. Brown, "Reciprocal teaching of comprehension-fostering and monitoring activities," in Cognition and Instruction, 1(2), (1984), pp. 117-175.

4. See A.L. Brown and J.C. Campione, "Communities of learning and thinking, or a context by any other name," in *Human Development* 21 (1990), pp. 108-125. See also, Joan I. Heller and Anne Gordon, "Lifelong learning: a unique school-university collaboration is preparing students for the future," in *Educator* (Spring 1992), vol. 6. no. 1, pp. 4-19.

5. Anne Brown's Presidential address to the American Educational Research Association was published as, A. L. Brown, "The Advancement of Learning," in *Educational Researcher*, 23 (8) 1994, pp. 4-12.

6. Jerome Bruner's address to the American Educational Research Association in 1994 was published in J.S. Bruner, 'Teaching the Present, Past and Possible," in *The Culture of Education* (Cambridge MA: Harvard University Press, 1996), pp, 86-99. On the work of Campione and Brown, see above note 4.

7. See Schwab's suggestions in "The Practical; A Language fur Curriculum", in *Science, Curriculum and Liberal Education*, op.cit., pp. 287-321.

8. See Sizer's suggestions in *Horace's Compromise: The Dilemma of the American High School*, (Boston: Houghton Mifflin Company, 1985), pp. 225, 230.

9. Peter Drucker, 'The Age of Social Transformation" in *The Atlantic*, November 1994, v. 274, n5, p. 53(18).

10. See *Case Methods in Teacher Education*, edited by Judith H. Shulman (New York: Teachers College Press, 1992), and my paper "Toward a Pedagogy of Cases," on pages 1-32 therein. See also, *The Intern Teacher Casebook*, edited, by Judith H. Shulman and

Joel A. Colbert (Far West Laboratory and ERIC Clearinghouse; volume 1: 1987 and volume 2: 1988), and *Diversity in the Classroom*, edited by Judith H. Shulman and Amalia Mesa-Bains (New Jersey: Research for Better Schools and Lawrence Erlbaum Associates; *Casebook for Teachers and Teacher Educators*: 1993, and *Facilitators Guide*: 1994).

11. J. S. Bruner, *Actual Minds, Possible Worlds* (Cambridge MA; Harvard University Press_, 1986), , p. 16.