

Teacher of Teachers, Companion of Children: An Interview with David Hawkins

by Thomas James

David Hawkins, director of the Mountain View Center for Environmental Education, discusses the role of the teacher as learner. "Good teaching requires the teacher's own involvement in learning," he maintains.

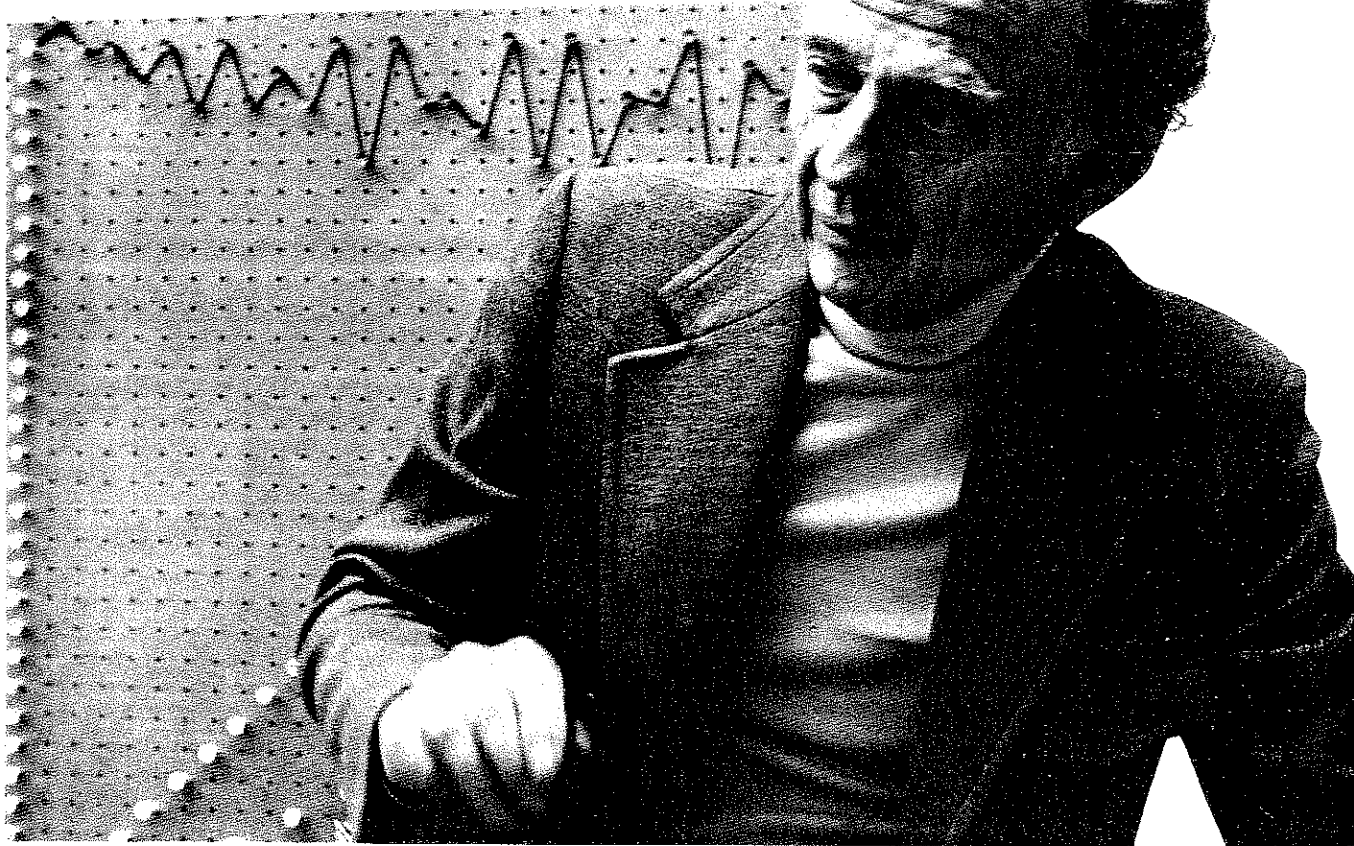


Photo by Betty Kellogg

David Hawkins is an educator whose life bridges the boundaries between scientist and philosopher, teacher and writer, scholar and activist. For more than two decades he has helped to bring teaching and curriculum materials in tune with the ways in which children learn. He has celebrated the curiosity of the young, their delight in questions. His writings have championed the notion that learners thrive on adventure and discovery more than on established facts and foregone conclusions, but he has also emphasized the intrinsic interest of cognitive subject matter as an experience in its own right.

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Hawkins is an advocate of teaching that combines direct experience with mastery and clear thinking. He played a central role in the Elementary Science Study (ESS), which set a pattern for the new science curricula that appeared in schools across the nation during the 1960s. In addition, he has been a respected interpreter of teaching strategies that once struggled for recognition in the U.S. and that flourished in the open education movement in England.

Since 1970, with his wife Frances, also an educator and writer, he has directed the Mountain View Center for Environmental Education, a nationally known teacher center in Boulder, Colorado. Now a Distinguished Professor of Philosophy

at the University of Colorado, he recently was awarded a grant by the MacArthur Foundation for research of his own choosing. This interview took place at the home of David and Frances Hawkins in Boulder on 22 July 1980.

JAMES: In the teaching of science, what common elements have you found among the best teachers?

HAWKINS: First of all, they know the subject matter, and they have a sense of style. But then, perhaps more important, they have a feeling that the way science is actually practiced is closer to the style of children than to the organization of textbooks. This sense of style shared with children is a key to much else.

Teaching is a difficult and complex profession, craft, art. Good teachers project an aura of enjoying their own attempts to learn.

JAMES: What constitutes children's style?

HAWKINS: They can be led into getting excited about investigating something, seeing why it works the way it does. In the process, they are able to accept the need to formulate, the need to learn from books as well as from direct experience. Children are curious and willing to take risks to try out what they think might be true. They can get involved in organizing a core of active investigation, which makes it exciting to be around them while they are learning. It's a challenge to teach children who are learning in this fashion. I don't know whether you remember the kind of high school textbook that was developed for the "new physics" of the 1960s, but it could only be taught well by a teacher who knew a lot more than was in the book, who enjoyed tinkering in the lab and didn't feel compelled to follow the textbook letter for letter. For teachers who didn't already have some scientific insight and skill, it was a difficult course to teach.

JAMES: How was it possible to train teachers to teach the course with the necessary poise and vitality?

HAWKINS: Actually, many of the first generation who designed and taught that course were not public school teachers at all, but university people. There was a tendency to disparage existing teachers as poorly educated, as if part of the mission of these new curriculum projects was to help teachers out of their misdirected ways and limited knowledge. Sometimes a tone of arrogance crept into the process. For my own part, working on the Elementary Science Study gave me a much deeper immersion in the real life of teachers in schools. I also had help from several people who had a great deal more experience than I — including my wife Frances. Also, while we were working on ESS in the Boston area, we invited over from England a man named Ron Wastnedge, who directed the corresponding English project. We became acquainted with the different style of teaching that had evolved in many classrooms there, and we came to believe that it was superior to much of what we had seen in the U.S.

JAMES: How would you characterize that difference?

HAWKINS: The difference was partly organizational. For the Junior Science Project the British had a group of about eight people — most of them from colleges of education — who worked as advisors in different parts of England and Wales. Each of these advisors was respon-

sible for a group of schools in a certain geographical area. The teachers were willing to cooperate and work intensively with these advisors to get things started in their classrooms. The advisors didn't have any notion of a fixed curriculum; they were just using their own experience to propose classroom activities. They would then visit each classroom for a day every week or two. In this way they helped those particular teachers to develop an active style of teaching science, with a heavy emphasis on fieldwork and biology but also on investigations of subjects such as optics and mechanics.

JAMES: What was special about this style of teaching, and how was it transmitted to other teachers?

HAWKINS: I remember one class that was trying to build a centrifuge, for example, which involved learning about the mechanics of gears. Most of the curriculum was interconnected with drawing and painting and descriptive or narrative writing. There was always the feeling that science was evolving along the way, with children as the primary investigators and teachers and an advisor privy to their work. The result was not a textbook or teacher's guide but a set of case histories of children learning. These case histories would simply be stories of what happened in various classrooms and how it came about, never twice the same. The English project then gathered together the case histories with some background writing and subject matter, plus useful supplements — for example, a book on apparatus that is cheap and readily available. This approach may sound haphazard, but it invited real teaching into the curriculum-building process, and it generated great enthusiasm among teachers and their students.

JAMES: What did you learn from the English experience?

HAWKINS: We learned firsthand about the changes that had been going on in English primary schools. We did this by spending first a little and then much more time visiting and working in parts of England where interesting things were happening in classrooms. The emphasis wasn't just on science and mathematics, though that was a strong component of our inquiry. We were observing the fundamental reorganization of classroom life; this is what excited our interest most of all. From those observations I picked up some strong convictions that the problem we had been trying to deal with in the U.S. — essentially a curriculum problem as we had formulated it — really had to

do with a renewal of the whole art of teaching. We had not looked seriously at the scope of this larger problem, which was no less than the evolution of new kinds of work in schools. It was far more than a matter of distributing textbooks and kits of equipment and teachers' guides, with no idea of how they would germinate and take root and grow in the minds of young people, except by sheer chance.

JAMES: How did you apply these convictions after you returned home?

HAWKINS: We realized immediately that you can't import an evolved style of work, but you can recognize the need for professional support of the learning and growth of teachers after they have become teachers. It has to be more than "inservice training" or "professional development." It is something to which the advisors and teachers must contribute equally. Exploration, invention, experimentation — but not training as though the trainer knew beforehand what the trainee should do.

JAMES: Were you trying to create a certain perspective on what it is to be a teacher — that the teacher is, above all, a learner?

HAWKINS: Yes — teacher as learner, advisor as learner, and also the learner as teacher. Teaching is a difficult and complex profession, craft, art. The people who are good at it usually invest many years in becoming good. They create an atmosphere that contributes to morale, which is terribly important for learning. They project an aura of enjoying their own attempts to learn and a knack for having fresh successes. This was the atmosphere my wife and I sought when we founded the Mountain View Center in 1970. We wanted to find out to what extent and in what ways American teachers would accept more professional support toward such goals. A good center for teachers is highly visible but has no coercive powers. Our center attracted teachers who wanted help and thought they might be able to get it there.

JAMES: And what did you do to help them?

HAWKINS: To begin with, we offered courses for teachers who could come to our center. In these courses the teachers became actively involved in making things, doing things, talking about processes, discussing ideas to develop an understanding of their experience. At the same time, we placed heavy emphasis on subject matter. We didn't concentrate on how to teach in the abstract, as is often

done in schools of education, but on teaching subject matter in a style that we hoped would get teachers involved in it as learners. The world is full of marvels for the eyes to see and for the ears to hear. Practice and detail, even memorization, are needed in education. But active intelligence will flourish only when we have known the romance of fresh subject matter.

JAMES: That *does* seem different from schools of education. But isn't there some advantage to teaching about methods that are relevant to different kinds of curricula?

HAWKINS: We always emphasized subject matter more than methods, but we exhibited the methods, we *used* the methods. We might also talk about them as we experienced them, but we didn't just lecture about them as if they were fixed pieces of knowledge.

JAMES: Did you have other strategies — besides offering courses for teachers at the Mountain View Center — for bringing this sort of renewal into classrooms?

HAWKINS: In addition to courses and our publications, the other way we worked with teachers was to visit classrooms. Such visits sometimes led to long-standing agreements that enabled us to visit periodically, work in the classrooms, and talk with teachers. We were available to give advice, but we were also trying to support the teacher's own initiatives. We tried not to make the mistake that we and others sometimes had made in the past, that is, visiting and relieving someone of teaching obligations and then learning afterward that nothing much happened after we left.

JAMES: What has been the result of these classroom visits?

HAWKINS: The result has been that, in 12 years of operating the Mountain View Center, we have reached a substantial number, but never a substantial proportion, of teachers in our region. Many of those we have worked with have become associates who have battled for us when we were about to go broke and who in many ways have contributed to our own development. Realistically, I think we have not had, and couldn't have had, the influence on schools that we saw in England. We were too few! But we have had a tangible impact — affecting not just single teachers but whole schools in some places. Change is a slow process; we had no illusion about this from the beginning. The English development evolved over a period of at least 30 years.

JAMES: What changes do teachers make in their approach to teaching when you visit their classrooms?

HAWKINS: Usually they expand their repertoire of activities and types of engagement in the classroom. They learn

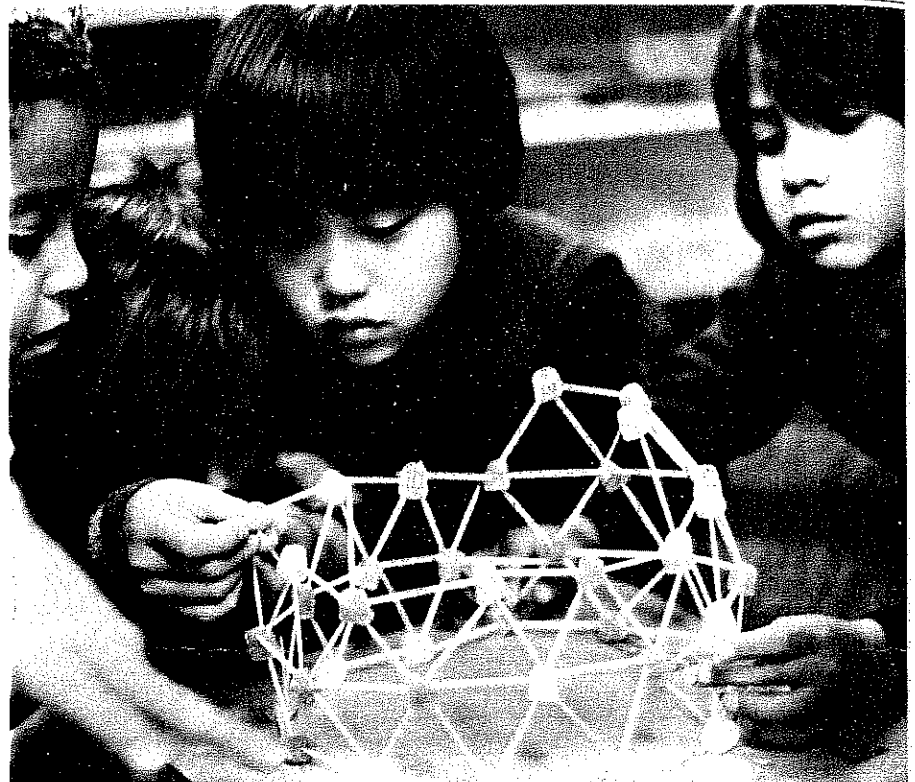


Photo by Betty Kellogg

through experience that, when children become more actively involved in investigating subject matter for themselves, the whole atmosphere of the classroom changes, reflecting a higher level of commitment to learning. Suddenly teachers and administrators realize that there are fewer discipline problems. It's odd, because often this kind of work is seen as chaotic and lacking in discipline, but when children are not bored they tend to solve their discipline problems by themselves.

JAMES: Isn't it really a question of whether teachers believe in the subject matter, whether they trust it and are committed to it, since they must create new methods of engaging their students?

HAWKINS: I like the idea of trust. Most of us are victims of a style of education that didn't give us trust either in the subject matter or in our capacity for independent investigation. I have seen teachers become extremely nervous when faced with the possibility that they might come home from a field trip and have 20 different leads into further activity coming out of the experiences of their students. Then, not having planned for half of them, they don't know which to engage in. How do you choose? In its very richness, however, a rich subject matter is trustworthy. It will certainly engage many children, and it will provide a context in which the teacher can work to engage others.

JAMES: Could you give me a concrete example of how to act on that trust as a teacher?

HAWKINS: I can give you one out of

my own teaching background. When I was working on the Elementary Science Study in the 1960s, I visited classrooms and took a load of equipment and materials with me. Of course, I had it easy because a new visitor is always welcomed, a man was not common in elementary school classrooms, and I had with me some nice shiny hardware.

Once I picked material that had to do with pendulums. Pendulums became our passion for a while. If you have a simple laboratory frame that is stable and sturdy, from which to hang things, and if you have various weights to hang from strings, you simply play with them, and it's easy to stimulate questions, which can usually be answered by straightforward observations. The first time I tried it I was nervous about whether this would hook the kids — they were fifth-graders. So I started with a little demonstration (later I learned that this isn't necessary). I coupled the string supports of the two pendulums together with a drinking straw so that when I started one, the swinging motion would gradually transfer to the other, then back again. I hid the straw with a piece of cardboard in front, so they could only see the pendulum weight swinging. I started one of them swinging and then the other began to pick up the motion. Pretty soon the first one had stopped and the other was swinging; then the transfer reversed itself. The children were amazingly attentive to all of this. I asked them what caused the phenomenon they had seen, and inevitably one child said, "Magnets!" Then I unveiled the straw and gave two or three suggestions about things they

might do to find out what was happening. The kinds of questions they started asking were not explanatory ones at all, but more like, "What happens if you do *this*?" Despite my inexperience, we were off to a fine start.

JAMES: You created an inquisitive frame of mind, and then let them take it from there, with your help. The situation reminds me of an article you wrote years ago, considered a classic by many educators now, called "Messing Around in Science."

HAWKINS: Yes, I used the same example in that article, of work with pendulums. The important point is that it doesn't take any learnedness to start. In this case, here was a very well-behaved subject, which could have been dreadfully dull in a textbook; we ventured into all aspects of the pendulum without ever talking formally — except a little bit at the end, to sum up our own case history of what we had learned. The kids understood how the thing behaved and began to have ideas about why, and in discussions I was able to smoke out their thinking, encouraging them to take the risk of having thoughts about it.

JAMES: To what extent were they creating hypotheses in the usual scientific sense?

HAWKINS: They were doing that to a large extent, but not in a formal way. I once raised a question about the symmetry of the swing, asking as it went up one side how they would compare that motion to what it was doing on the other

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side. The kids got involved in an elaborate analogy about sleds going down in a valley and up the other side. But when you begin to communicate at the level of their own thinking and when you take their questions as seriously as they do, you find they often act as scientists.

JAMES: Do you find yourself confronting the artificial divisions that educators have created between the different kinds of subject matter? Don't these divisions automatically stunt the experience of learning, narrowing the questions that can be asked by a truly curious investigator?

HAWKINS: Every subject potentially leads to others. The great art is to know

some of those interconnecting pathways yourself; the more of them you know, the more likely it is that you will be able to entice children to go along and discover more about the world they live in. You see a teapot that has mold growing inside, confined to perfect concentric rings — where light has come in the spout. Why is this so? What is the connection between weaving or braiding in the classroom and the history of the Southwest? *Good teaching requires the teacher's own involvement in learning.* You can't do a good job unless you're keen on it yourself.

JAMES: But when you look at the educational system in this country, don't you see an uphill battle because of the way teachers are trained, the way they are hired and fired, and the conditions under which they must labor? Transmitting the art of teaching in the informal and delightful way you have described seems like an impossible dream — right and true as it may be.

HAWKINS: Remedies always involve breaking a closed circle of some sort. You want to affect one component of the system, but it is locked into all the others. And you can easily become pessimistic about that, as I think most of us properly are at some time. But success on a large scale isn't essential. We have a system that *can* accept a new kind of professional support for teachers, and teachers can affect the overall system. That's the thing I keep hammering at. Who trains the trainer? Who teaches the teacher? Who teaches the teacher of teachers? You have to break into this system *someplace*. A good advisory system can be such an invasion. It is feasible, financially and otherwise. But you have to believe in it and support it over time.

JAMES: What encouragement or resources can you suggest for people who are looking for opportunities to be learners as they teach, but who are in danger of losing heart as they work in the dispiriting, bureaucratic systems where they may find themselves?

HAWKINS: Start by looking for places where success is already visible. You rarely find cases where individuals all by themselves develop a style of teaching that genuinely enlists children in learning, but, when you do, it's a good place to start. Try to find a context where you can see it working, and get yourself into an apprenticeship role if possible. Many good teachers have learned to live in isolation because they must protect themselves and preserve the freshness of learning in an inhospitable environment. You can find them.

And here's another important point: Never despair. Good teaching is hard work, inordinately demanding, unrewarding socially, its value often unrecognized

— except I think it is recognized by parents. Once parents see that their children are learning, they relax about *how* you are teaching them.

We all must keep in mind, too, that there is a tradition of the kind of teaching I have been trying to describe, and we have learned from it over and over again. Such teachers may be a minority, but it is tremendously important that they be a strong and vital minority. This is why we started a teacher center. I believe it is crucial that every generation keep working at these things until the opportunities arise again, so that they can take hold and grow further. If we persevere, the style of teaching I have been describing will have worked its way far enough into the system and into the practice of teachers that it will be sturdy and resilient. It will be able to ride out the periods of retrenchment and loss of heart.

JAMES: This seems to suggest another kind of pendulum. When reformers have advocated a self-directed, discovery process of learning such as the one you have described, the traditionalist response has often been to demand a greater emphasis on authority and fixed tasks, on an overtly compulsory structure in which the student must work — whether that structure be back-to-basics, minimum competency requirements, or the learning required for the Scholastic Aptitude Test and entrance into college. How can educators preserve what is good in the open style of teaching against challenges from those who oppose it?

HAWKINS: That is not a new battle. John Dewey's essay, "The Child and the Curriculum," deals with the dialectics of this conflict in an elegant way, and he didn't favor *laissez-faire*. He didn't spend enough time, in my opinion, discussing what the teacher's role actually should be. Clearly, both of the views of education to which you refer are simplistic. The polarization makes each side hear the other saying something that's dead wrong. The role of the teacher is that of a managerial authority, and this authority is often fragile and tenuous. But the role of authority can be firm without being coercive. Individual teachers differ in how much they are able to diversify or how much they must keep things going in a more uniform way. Teachers have a wide range of roles, depending on circumstances and subject matter and on the teacher. The important thing to keep in mind is that the teacher has to be concerned with getting children involved in subject matter in a way that makes it possible for them not only to develop their own investigations but to want to acquire information from other sources — from adults, from books, from the great traditions of knowledge and of art. □